Educational Course
Preclinical Imaging

Organizers: Kevin M. Bennett, Ph.D. & Mark D. Pagel, Ph.D.

Room 701 A 08:00-16:00 *Moderators:* Kevin M. Bennett, Ph.D. & Julio Cárdenas-Rodríguez, Ph.D.

Anatomy & Microstructure

08:00 **Anatomy & Microstructure: Introduction**
Kevin M. Bennett

08:30 **Quantitative Susceptibility Mapping for Preclinical Imaging**
Luke Xie

09:00 **Diffusion Techniques to Image Microstructrure**
Harish Poptani

09:30 **Quantitation**
Barjor Gimi

10:00 **Break - Meet the Teachers**

Physiology & Metabolism

10:30 **Physiology & Metabolism: Introduction**
Jeff F. Dunn

11:00 **Spectroscopy**
David L. Morse

11:30 **fMRI**
Shella D. Keilholz

12:00 **Perfusion**
Afonso C. Silva

12:30 **Break - Meet the Teachers**

Genotyping, Phenotyping & Morphology

14:00 **Molecular Imaging & MEMRI**
Robia G. Pautler

14:30 **Quantitative Phenotyping**
R. Mark Henkelman

15:00 **Morphology & Development**
Daniel H. Turnbull

15:30 **Imaging in Cancer**
Sabrina M. Ronen

16:00 **Adjournment & Meet the Teachers**

Educational Course
Clinical Cancer MRI: Case-Based

Organizer: Masoom A. Haider, M.D.

Room 701 B 08:30-17:15 *Moderators:* Masoom A. Haider, M.D. & Evis Sala, M.D., Ph.D.

Guidelines & Reporting Standards

08:30 **Liver MRI & HCC (LiRads)**
Claude B. Sirlin

09:00 **Rectal MRI: Adoption of Gudielines & Standards**
Laurent Milot

09:30 **Imaging of Lymph Nodes: Update**
Mukesh Harisinghani

10:00 **Roundtable**

10:15 **Break - Meet the Teachers**

Addressing Clinical Needs

10:30 **Staging Uterine & Cervical Cancer**
Caroline Reinhold

11:00 **Rising PSA & Prior Negative Biopsy in Prostate Cancer**
Daniel J. A. Margolis

11:30 **Finding Cancer in the Dense Breast: MRI or Tomosynthesis**
Emily F. Conant

12:00 **Roundtable**

12:15 **Break - Meet the Teachers**

New Horizons

13:30 **Applications of 7T in Cancer**
Tom W. J. Scheenen

14:00 **Theranostics: Chemotherapy Response in Breast Cancer**
Nola M. Hylton

14:30 **DWI Is a Relevant Biomarker in Cancer**
Dow-Mu Koh

15:00 **Roundtable**

15:15 **Break - Meet the Teachers**

Benign, Indolent or Aggressive

15:30 **Prostate MRI (PiRads)**
Jelle O. Barentsz

16:00 **Small Renal Mass**
Ivan Pedrosa

16:30 **Nodule in Cirrhosis**
Jeong M. Lee

17:00 **Roundtable**

17:15 **Adjournment & Meet the Teachers**

Educational Course
Neuro 1

Organizer: Jonathan H. Gillard, M.D., FRCR, MBA & Howard A Rowley, M.D.
Room 714 A/B 07:30-18:00

Acute Stroke
Moderators: Jeffry R. Alger, Ph.D. & Kei Yamada, M.D

07:30 **Acute Stroke: What the Clinician Wants**
Michael D. Hill

08:00 **Acute Stroke: What the Radiologist Provides**
Max Wintermark

08:30 **Acute Stroke: What the Physicist Can Add**
Richard Frayne

09:00 **Discussion**

09:30 **Break - Meet the Teachers**

Carotid Disease
Moderators: Martin J. Graves, Ph.D. & Steven W. Hetts, M.D.

10:00 **Carotid Disease: What the Clinician Wants**
Thomas S. Hatsukami

10:30 **Carotid Disease: What the Radiologist Provides**
Alan Moody

11:00 **Carotid Disease: What the Physicist Can Add**
Chun Yuan

11:30 **Discussion**

12:00 **Break - Meet the Teachers**

Parenchymal CNS Hemorrhage
Moderators: E. Mark Haacke, Ph.D. & Karen A. Tong, M.D.

13:30 **Parenchymal CNS Hemorrhage: What the Clinician Wants**
Edip M. Gurol

14:00 **Parenchymal CNS Hemorrhage: What the Radiologist Provides**
Patrick A. Turski

14:30 **Parenchymal CNS Hemorrhage: What the Physicist Can Add**
Tetsuya Yoneda

15:00 **Discussion**

15:30 **Break - Meet the Teachers**

Head & Neck Cancer
Moderators: Leon J. van Rensburg, Ph.D. & Osamu Sakai, M.D., Ph.D.

16:00 **Head & Neck Cancer: What the Clinician Wants**
Ian J. Witterick

16:30 **Head & Neck Cancer: What the Radiologist Provides**
Lawrence Ginsberg

17:00 **Head & Neck Cancer: What the Physicist Can Add**
Andreas Boss

17:30 **Discussion**

18:00 **Adjournment & Meet the Teachers**

Educational Course
Cardiac MRI: Function, Perfusion & Viability

Organizers: Daniel B. Ennis, Ph.D. & Thomas K. F. Foo, Ph.D.
Room 716 A/B 08:00-12:55 *Moderators:* Victor A. Ferrari, M.D. & Michael Jerosch-Herold, Ph.D.

The Basics of a Cardiac MRI Exam

08:00 **The Basic Cardiac MRI Examination: Physical Principles**
Martin J. Graves

08:30 **Clinical Workflow, Anatomy, Cardiac Views, 17-Segment Model, Contrast Agents**
Ulrich Kramer

Evaluation of Cardiac Function

09:00 **Clinical Needs: Heart Failure (5-Min Background) & How We Image It**
Michael Salerno

09:25 **Technical Foundations: Physics of Bright Blood Imaging**
Subashini Srinivasan

09:50 **Research Promises: Real-Time/Free-Breathing/Ungated Functional Assessment**
Tobias Block

10:15 **Break - Meet the Teachers**

Evaluation of Cardiac Perfusion

10:30 **Clinical Needs: Ischemic Heart Disease & How We Image It**
Bobak Heydari

10:55 **Technical Foundations: Physics of Perfusion Imaging**
Daniel Kim

11:20 **Research Promises: Real-Time/Free-Breathing/Ungated Perfusion**
Edward DiBella

Evaluation of Late Gadolinium Enhancement

11:45 **Clinical Needs: Inflammation/Sarcoid/Non-Ischaemic Applications & How We Image It**
Joao Lima

12:10 **Technical Foundations: Physics of LGE Imaging**
Peter Kellman

12:35 **Research Promises: Parametric Mapping**
Richard B. Thompson

12:55 **Adjournment & Meet the Teachers**

Educational Course
Cardiovascular MRI: Vascular Flow & Angiography

Organizers: Daniel B. Ennis, Ph.D. & Harald Kramer, M.D.
Room 716 A/B 14:00-17:50 *Moderators:* Kim-Lien Nguyen, M.D. & Pauline W. Worters, Ph.D.

The Basics of a Vascular MRI Exam

14:00 **Basic Contrast & Non-Contrast Methods**
Frank R. Korosec

14:30 **Anatomy, Stenoses/Coarct, Shunts, Dissections, Contrast Agents & Application Protocols**
Konstantin Nikolaou

15:00 **Break - Meet the Teachers**

15:10 **Clinical Needs: Flow in Abdominal Disease (5-Min Background) & How We Image It**
Thomas M. Grist

15:35 **Technical Foundations: PC-MRI, Eddy Currents, ROIs & Accuracy/Precision**
Aurelien F. Stalder

16:00 **Research Promises: Faster Methods, 4D**
Michael Markl

16:25 **Break - Meet the Teachers**

16:35 **Clinical Needs: Congenital Heart Disease (5-Min Background) & How We Image It**
Bernd J. Wintersperger

17:00 **Technical Foundations: CE-MRA, Acceleration Methods**
Stanislas Rapacchi

17:25 **Research Promises: Advanced Acceleration Methods, Cardiac Gated MRA**
Peng Hu

17:50 **Adjournment & Meet the Teachers**

Educational Course
Perfusion Imaging Brain & Body

Organizers: David L. Buckley, Ph.D. & Linda Knutsson, Ph.D.
Room 718 A 08:00-12:20 *Moderators:* Susan T. Francis, Ph.D. & Linda Knutsson, Ph.D.

08:00 **What Is Perfusion, and How Is It Measured?**
Bradley J. MacIntosh

08:40 **Perfusion Measured by MRI Using an Intravascular Tracer**
Ronnie Wirestam

09:20 **Perfusion Measured by MRI Using an Extravascular Tracer**
Michael S. Ingrisch

10:00 **Break - Meet the Teachers**

10:20 **Perfusion Measured by MRI Using a Diffusive Tracer**
Susan T. Francis

11:00 **Applications of Perfusion MRI in the Brain**
Greg Zaharchuk

11:40 **Applications of Perfusion MRI in the Body**
Mike Notohamiprodjo

12:20 **Adjournment & Meet the Teachers**

Educational Course
Quantitative Physiology

Organizers: Jonathan R. Polimeni, Ph.D. & Eric C. Wong, M.D., Ph.D.
Room 718 A 14:00-17:50 *Moderators:* Richard B. Buxton, Ph.D. & Arno Villringer, M.D.

14:00 **From Neurons to BOLD**
Anna Devor

14:30 **From BOLD to Neurons**
Richard B. Buxton

15:00 **Neurometabolic & Neurovascular Couplings Underlying Quantitative BOLD**
Fahmeed Hyder

15:30 **Break - Meet the Teachers**

15:50 **Imaging Oxygenation**
Divya S. Bolar

16:20 **Vascular Permeability Imaging & Quantitative ASL**
Danny J. J. Wang

16:50 **4D Flow Imaging of Vascular & CSF Dynamics**
Michael Markl

17:20 **Diffusion-Weighted Functional MRI**
Allen W. Song

17:50 **Adjournment & Meet the Teachers**

Educational Course
Advanced fMRI: Techniques & Applications

Organizers: Jay J. Pillai, M.D. & Jonathan R. Polimeni, Ph.D.
Room 718 B 08:30-11:50 *Moderators:* Jay J. Pillai, M.D. & Jonathan R. Polimeni, Ph.D.

08:30 **Data Driven & Exploratory Analyses**
Vesa J. Kiviniemi

09:00 **Dynamic Functional Connectivity**
Catherine E. Chang

09:30 **Comparing fMRI with Electrophysiological Eecordings**
Afonso C. Silva

10:00 **Break - Meet the Teachers**

10:20 **fMRI Using CBF, CBV, & CMRO2**
Daniel Bulte

10:50 **Simultaneous fMR-PET Imaging**
Joseph B. Mandeville

11:20 **Emerging Clinical Applications of fMRI**
Beau M. Ances

11:50 **Adjournment & Meet the Teachers**

Educational Course
Introduction to Functional MRI

Organizers: Peter Jezzard, Ph.D. & James J. Pekar, Ph.D.
Room 718 B 14:00-17:50 *Moderators:* James J. Pekar, Ph.D. & Joshua S. Shimony, M.D., Ph.D.

14:00 **The Physiological Basis of the fMRI Signal**
Claudine Gauthier

14:30 **Data Acquisition Considerations**
Fa-Hsuan Lin

15:00 **Paradigm Design**
Jeoen C. W. Siero

15:30 **Break - Meet the Teachers**

15:50 **Pre-Processing of fMRI Data**
Stephen C. Strother

16:20 **Analyzing Data Using the General Linear Model**
Robert L. Barry

16:50 **Introduction to Resting-State fMRI & Functional Connectivity**
Joshua S. Shimony

17:20 **Example Applications of fMRI in Basic & Clinical Neuroscience**
Natalie L. Voets

17:50 **Adjournment & Meet the Teachers**

Educational Course
MR Systems Engineering

Organizer: Christopher M. Collins, Ph.D.
Room 801 A/B 08:30-17:00 *Moderators:* Ed B. Boskamp, Ph.D. & Maxim Zaitsev, Ph.D.

Introduction

08:30 **MR System Overview (What Is Required to Accomplish MRI?)**
Shin-ichi Urayama

Magnets & Shims

09:00 **Magnet Design, Manufacture & Installation**
Michael Mallett

09:30 **Shimming: Superconducting, Static & Active**
Anke Henning

10:00 **Break - Meet the Teachers**

Gradients

10:30 **Gradient Coil Design & Manufacture**
William B. Handler

11:00 **Gradient Train: Power Amplification Through Chiller Requirements**
Blaine A. Chronik

11:30 **Eddy Current Calibration & Gradient Preemphasis°**
Thomas Witzel

12:00 **Break - Meet the Teachers**

RF & The Console

13:30 **RF Transmit & Receive Chains**
Greig C. Scott

14:00 **Control in Execution: Pulse Sequences to Waveforms & Real-Time Controllers**
Maxim Zaitsev

14:30 **Signal Processing & Reconstruction: FIDs to Images**
Graeme C. McKinnon

15:00 **Break - Meet the Teachers**

Safety & Field Interactions

15:30 **MR Safety**
Alayar Kangarlu

16:00 **SAR & RF Power Monitoring**
Ingmar Graesslin

16:30 **Safety of Devices & Implants in MR**
Gregor Schaefers

17:00 **Adjournment & Meet the Teachers**

Educational Course
Physics for Physicists

Organizers: Jürgen R. Reichenbach, Ph.D. & N. Jon Shah, Ph.D.

John Bassett Theatre 102 08:30-18:00 *Moderators:* Jürgen R. Reichenbach, Ph.D. & N. Jon Shah, Ph.D.

NMR Physics: Firming Up the Foundations

08:30 **Quantum Mechanical Description of NMR**
James Tropp

09:00 **Problems in MR That Really Need Quantum Mechanics: The Density Matrix Approach**
Robert V. Mulkern

09:30 **Multiple Quantum Coherence, Editing & Multidimensional NMR**
Jianhui Zhong

10:00 **Break - Meet the Teachers**

10:30 **From Bloch Equation to MR Contrasts: Relaxation & Physical Bases of Tissue Contrast**
Greg J. Stanisz

11:00 **Other Contrast: Polarization Transfer, Chemical Exchange & Magnetization Transfer**
Penny A. Gowland

11:30 **Bloch Equation in the Rotating Frame, Multidimensional Excitation**
John M. Pauly

12:00 **Bloch-Torrey Equation & Diffusion Imaging (DWI, DTI, q-Space Imaging)**
Dmitry S. Novikov

12:30 **Break - Meet the Teachers**

Electromagnetic Fields in MRI: from Theory to Practice

14:00 **Maxwell Equations & EM Field Modeling for MRI**
Andreas K. Bitz

14:30 **Static Magnetic Field: Magnetic Field (In)Homogeneity, Susceptibility-Related Contrast & Artifcats**
Ferdinand Schweser

15:00 **Understanding Gradients from an EM Perspective: (Gradient Linearity, Eddy Currents, Maxwell Terms, & Peripheral Nerve Stimulation)**
Johan A. Overweg

15:30 **Break - Meet the Teachers**

16:00 **RF Coils & B1 Mapping**
Pierre-Francois A. Van de Moortele

16:30 **B1 Shimming & Parallel Transmission**
Martijn A. Cloos

17:00 **Signal Detection, Reciprocity, Noise & SNR**
Klaas P. Prüssmann

17:30 **<u>Descerning Electrical Properties & Electrical Field Distributions from MR Images</u>**
Ulrich Katscher

18:00 **Adjournment & Meet the Teachers**

Educational Course
Molecular Imaging

Organizers: Kristine Glunde, Ph.D. & Mark D. Pagel, Ph.D.

Room 701 A 08:30-17:00 *Moderators:* Robert Bartha, Ph.D. & Chris A. Flask, Ph.D.

08:30	**Quantitative Preclinical Imaging: Strategies, Pitfalls & Alternatives** *Chris A. Flask*
09:15	**CEST Agents** *Mark Woods*
10:00	**Break - Meet the Teachers**
10:30	**PET-MR Advantages & Challenges** *Ambros J. Beer*
11:00	**Optical-MRI Advantages & Challenges** *Keith D. Paulsen*
11:30	**Multimodal Contrast Agents** *Xiaoyuan Chen*
12:00	**Break - Meet the Teachers**
13:30	**Multimodal Molecular Imaging for Image Guided, Ultrasound Triggered & Drug Delivery** *Chrit T. Moonen*
14:00	**Imaging of Nucleic Acid-Based Therapies** *Anna V. Moore*
14:30	**Reporter Genes** *Michal Neeman*
15:00	**Break - Meet the Teachers**
15:30	**Fundamentals of Hyperpolarization** *Matthew Merritt*
16:00	**How to Detect HP Agents: Pulse Sequences** *John P. Mugler, III*
16:30	**How to Use HP Agents** *John Kurhanewicz*
17:00	**Adjournment & Meet the Teachers**

Educational Course
Body MRI- Optimize Your Clinical Practice

Organizers: Lorenzo Mannelli, M.D., Ph.D., Ivan Pedrosa, M.D., Scott B. Reeder, M.D., Ph.D. & Edwin J.R. van Beek, M.D., Ph.D., M.Ed., FRCR

Room 701 B 08:00-16:30

Approach to Setting Up a Body MRI Practice

Moderator: Scott B. Reeder, M.D., Ph.D.

08:00 **How to Run a Successful Body MRI Practice**
Russell N. Low

08:30 **Sequences: General Approach to Body MRI (Abdomen & Pelvis)**
Donald G. Mitchell

09:00 **Contrast Agents**
Bachir Taouli

09:30 **Break - Meet the Teachers**

Focal Liver Lesions
Moderator: Lorenzo Mannelli, M.D., Ph.D.

10:00 **MRI of Focal Lesions in the Non-Cirrhotic Liver**
Kartik S. Jhaveri

10:30 **MRI in the Cirrhotic Liver**
Hero K. Hussain

GI
Moderator: Ivan Pedrosa, M.D.

11:00 **MR Enterography**
Gabrielle Masselli

11:30 **Rectal CA Staging**
Gina Brown

12:00 **Break - Meet the Teachers**

Pelvis
Moderators: Richard Kinh Gian Do, M.D., Ph.D. & Reena C. Jha, M.D.

13:30 **Uterus: Benign Disease**
Caroline Reinhold

14:00 **Uterus: Malignant Disease**
Andrea G. Rockall

14:30 **Adnexal Masses**
Evis Sala

15:00 **Break - Meet the Teachers**

GU

15:30 **Adrenal & Renal**
Peter L. Choyke

16:00 **MRU & Bladder CA Staging**
Maryellen Sun

16:30 **Adjournment & Meet the Teachers**

Educational Course
Neuro 2

Organizers: Jonathan H. Gillard, M.D., FRCR, MBA & Howard A Rowley, M.D.
Room 714 A/B 07:30-17:45

Brain Tumors
Moderators: Thomas L. Chenevert, Ph.D. & John R. Griffiths, M.B.B.S., D.Phil.

07:45 **Brain Tumors: What the Clinician Wants**
Andrew Sloan

08:15 **Brain Tumors: What the Radiologist Provides**
Marco Essig

08:45 **Brain Tumors: What the Physicist Can Add**
Benjamin M. Ellingson

09:15 **Discussion**

09:45 **Break - Meet the Teachers**

Multiple Sclerosis
Moderators: Aaron S. Field, M.D., Ph.D. & Seth A. Smith, Ph.D.

10:00 **Multiple Sclerosis: What the Clinician Wants**
Eric C. Klawiter

10:30 **Multiple Sclerosis: What the Radiologist Provides**
Rolf Jager

11:00 **Multiple Sclerosis: What the Physicist Can Add**
Mark J. Lowe

11:30 **Discussion**

12:00 **Break - Meet the Teachers**

Pediatric Epilepsy
Moderators: Steven M. Stufflebeam, M.D. & Michael M. Zeineh, M.D., Ph.D.

13:30 **Pediatric Epilepsy: What the Clinician Wants**
Edward J. Novotny

14:00 **Pediatric Epilepsy: What the Radiologist Provides**
Elysa Widjaja

14:30 **Pediatric Epilepsy: What the Physicist Can Add**
Graeme D. Jackson

15:00 **Discussion**

15:30 **Break - Meet the Teachers**

Schizophrenia
Moderators: Sofia Chavez, Ph.D. & Nancy J. Lobaugh, Ph.D.

15:45 **A Systems Biology Approach Towards Schizophrenia & Neuro Psychiatric Disease**
John- Paul J. Yu

16:15 **Schizophrenia: What the Radiologist Provides**
John D. Port

16:45 **Schizophrenia: What the Physicist Can Add**
Vincent A. Magnotta

17:15 **Discussion**

17:45 **Adjournment & Meet the Teachers**

Educational Course
Clinical Interpretation & Advanced Imaging

Organizers: William B. Morrison, M.D., & Ravinder R. Regatte, Ph.D.
Room 716 A/B 08:00-17:45 *Moderators:* William B. Morrison, M.D. & Ravinder R. Regatte, Ph.D.

Basic

08:00 **Shoulder**
Philip Robinson

08:30 **Elbow**
Tetyana A. Gorbachova

09:00 **Wrist & Hand**
William E. Palmer

09:30 **Pelvis & Groin**
Johannes B. Roedl

10:00 **Break - Meet the Teachers**

10:30 **Hip**
Florian M. Buck

11:00 **Knee**
Lawrence M. White

11:30 **Ankle/foot**
Mark Schweitzer

12:00 **Break - Meet the Teachers**

Advanced

12:30 **Rapid Three-Dimensional Musculoskeletal Imaging Techniques**
Richard Kijowski

13:00 **Dynamic Contrast-Enhanced MRI (DCEMRI) - Clinical Uses**
Mary K. Jesse

13:30 **Cartilage Mapping Techniques & Applications**
Timothy J. Mosher

14:00 **Neurography: How Do I Do It?**
Alissa J. Burge

14:30 **Break - Meet the Teachers**

15:00 **Spectroscopy of Musculoskeletal Tumors & More**
Laura M. Fayad

15:30 **MR-PET in Musculoskeletal**
Garry E. Gold

16:00 **Ultra High Field MRI**
Guillaume N. Madelin

16:30 **Metal Artifact Suppression**
Eric Y. Chang

17:00 **Adjournment & Meet the Teachers**

Educational Course
Imaging Microstructure

Organizers: Daniel C. Alexander, Ph.D., Adam W. Anderson, Ph.D., & Derek K. Jones, Ph.D., DipIPSM
Room 718 A 09:00-16:40

Moderators: Adam W. Anderson, Ph.D. & Karin Shmueli, Ph.D.

09:00 **Relaxometry Basics**
Cornelia Laule

09:20 **Relaxometry Modelling**
Sean C. L. Deoni

09:40 **Magnetisation Transfer Basics**
Greg J. Stanisz

10:00 **Magnetisation Transfer Modelling**
John G. Sled[1]

10:20 **Break - Meet the Teachers**

11:00 **Diffusion Basics**
Louise E. Emsell

11:20 **Advanced Diffusion Sequences**
Evren Ozarslan

11:40 **Diffusion Modelling**
Markus Nilsson

12:00 **Break - Meet the Teachers**

Moderators: Cornelia Laule, Ph.D. & Greg J. Stanisz, Ph.D.

13:30 **Susceptibility Basics**
Karin Shmueli

13:50 **Susceptibility Modelling**
Chunlei Liu

14:10 **Multi-Modal Modelling**
Nikola A. Stikov

14:30 **Microstructure Informed Tractography**
Saâd Jbabdi

14:50 **Break - Meet the Teachers**

15:20 **Applications in Neuroscience**
Yaniv Assaf

15:40 **Applications in Neurology**
Michael M. Zeineh

16:00 **Applications in Cancer**
Eleftheria Panagiotaki

16:20 **Applications Elsewhere in the Body**
Roger M. Bourne

16:40 **Adjournment & Meet the Teachers**

Educational Course
Big Data: A Primer on Models & Methods

*Organizers:*Brian B. Avants, Ph.D. & James C. Gee, Ph.D.
Room 718 B 08:00-12:00 *Moderators:*Brian B. Avants, Ph.D. & James C. Gee, Ph.D.

08:00 **Frontiers in Massive/Big Data Analysis**
Vince D. Calhoun

08:30 **Kernelized Methods**
Tom Fletcher

09:15 **Graph-Theoretical Methods**
Danielle S. Bassett

10:00 **Break - Meet the Teachers**

10:30 **Statistical Learning**
Ruslan Salakhutdinov

11:15 **Mutivariate/Modal Modeling & Analysis**
Brian Avant

12:00 **Adjournment & Meet the Teachers**

Educational Course
A Practical Guide to MR Safety

*Organizers:*Michael Bock, Ph.D. & Mark E. Ladd, Ph.D.
Room 718 B 13:30-17:30 *Moderators:*Michael Bock, Ph.D. & Mark E. Ladd, Ph.D.

13:30 **MR Safety: Where Do the Risks Come From?**
Harald Kugel

14:00 **Planning an MR Suite: What Can Be Done to Ensure MR Safety?**
Emanuel Kanal

14:30 **Screening the Patient: How to Deal with the Individual Subject**
Anne Marie Sawyer

15:00 **Break - Meet the Teachers**

15:30 **Side Effects of High Magnetic Fields**
Richard W. Bowtell

16:00 **Contrast Agent Use in the Age of NSF**
Tim Leiner

16:30 **MR Safety of Implants: How to Separate the Good from the Bad & the Ugly**
Oliver Kraff

17:00 **MRI Safety Events: Lessons Learned**
Robert E. Watson

17:30 **Adjournment & Meet the Teachers**

Educational Course
RF Engineering - Coils

Organizers: Christopher M. Collins, Ph.D. & Nicola F. De Zanche, Ph.D.
Room 801 A/B 08:30-16:15 *Moderators:* Andreas K. Bitz, Ph.D. & Graeme C. McKinnon, Ph.D.

08:30 **Basics of Transmission Lines & Wave Guidance**
Steven M. Wright

09:00 **Volume & Surface Coils**
Ed B. Boskamp

09:30 **Multi-Tuned Coils**
Ryan J. Brown

10:00 **Break - Meet the Teachers**

10:30 **Receive Arrays & Circuitry**
Boris R. Keil

11:00 **Transmit Arrays & Circuitry**
Mark E. Ladd

11:30 **RF Modelling**
Bei Zhang

12:00 **Break - Meet the Teachers**

14:00 **Dielectric Materials & Resonators**
Sebastian A. Aussenhofer

14:30 **Dipoles & Traveling Waves (Was Coils for Hybrid Systems)**
Alexander J.E. Raaijmakers

15:00 **Break - Meet the Teachers**

15:30 **Construction of Rx Arrays - Chronik**
Blaine A. Chronik
Kyle M. Gilbert
Ravi S. Menon

16:15 **Adjournment & Meet the Teachers**

Educational Course
Imaging Acquisition & Reconstruction

Organizers: N. Jon Shah, Ph.D. & Xiaohong Joe Zhou, Ph.D., D.A.B.R.
John Bassett Theatre 102 08:30-17:30 *Moderators:* Priti Balchandani, Ph.D. & Maxim Zaitsev, Ph.D.

Pulse Sequence Building Blocks

08:30 **RF Pulses Designs: From Basics to the State-Of-The-Art**
Michael Garwood

09:00 **Gradients: Spatial Encoding, Contrast Manipulation & Artifact Management**
Yong Zhou

09:30 **Dealing with Motion: Gating, Triggering & Sampling**
Frederick H. Epstein

10:00 **Break - Meet the Teachers**

Contrast Manipulation

10:30 **Magnetization-Preparation Modules (Saturation, Inversion & T2-Preparation)**
Pippa Storey

11:00 **Pulse Sequence Modules II: (Tagging, Labeling, Diffusion Sensitization & MT)**
Peter Jezzard

11:30 **Flow Contrast Without Using Exogenous Agent**
Yiping P. Du

12:00 **Break - Meet the Teachers**

Advanced Acquisition Strategies

13:30 **Echo-Train Pulse Sequences: EPI, RARE & Beyond**
Oliver Speck

14:00 **Non-Cartesian K-Space Sampling**
Kevin F. King

14:30 **Spoiled & Balanced Gradient-Echo Sequences**
Brian A. Hargreaves

15:00 **Break - Meet the Teachers**

Image Reconstruction

15:30 **Reconstruction of Non-Cartesian K-Space Data**
Ricardo Otazo

16:00 **Parallel Imaging Reconstruction**
Felix Breuer

16:30 **Phase-Sensitive Image Reconstruction (Dixon, Temperature Mapping, Phase Imaging, SWI, PS-IR, MRE, Etc.)**
E. Mark Haacke

17:00 **Compressed Sensing**
William A. Grissom

17:30 **Adjournment & Meet the Teachers**

Opening Reception

Exhibition Hall 17:45-19:15

Plenary Session
Lauterbur Lecture

Plenary Hall FG 07:30-09:15 *Moderators:* Daniel C. Alexander, Ph.D. & James C. Gee, Ph.D.

07:30 **Welcome & Awards**
Jeffrey Joseph Neil, M.D., Ph.D.

08:30 **Lauterbur Lecture: About Recent Developments of Gradients, Magnets & RF & its Impact on MR Imaging: A Collaborative Effort of Academic Research & MR Industry**
Franz Schmitt, Ph.D.

Plenary Session
Big Data: Population - Scale Imaging

Organizers: Daniel C. Alexander, Ph.D. & James C. Gee, Ph.D.

Plenary Hall FG 09:15-10:15 *Moderators:* Daniel C. Alexander, Ph.D. & James C. Gee, Ph.D.

09:15 **0001.** **What Is Big Data?**
Paul Thompson[1]
[1]University of California

09:35 **0002.** **Collecting Big Data**
Monique Breteler[1]
[1]Erasmus Medical Center

09:55 **0003.** **Big Data in Action**
Viren Jain[1]
[1]Janelia Research Campus

10:15 **Adjournment**

Traditional Poster Session: Muscoskeletal

Exhibition Hall 10:45-12:45 *(no CME credit)*

Traditional Poster Session: Cancer

Exhibition Hall 10:45-12:45 *(no CME credit)*

Electronic Poster: Diffusion

Exhibition Hall 10:45-11:45 *(no CME credit)*

Electronic Poster: Perfusion

Exhibition Hall 10:45-11:45 *(no CME credit)*

Study Group Session
Psychiatric MR Spectroscopy & Imaging

Reception Hall 104 BCD 10:45-12:45 *(no CME credit)*

Power Pitch Session: Microstructure in CNS

Power Pitch Theatre, Exhibition Hall 10:45-11:45 *(no CME credit)*

Moderators: Shannon Kolind, Ph.D. & Robert V. Mulkern, Jr., Ph.D.

0004. **Whole-Brain *In-Vivo* Measurements of the Axonal G-Ratio in a Group of 19 Healthy Volunteers**

ISMRM MERIT AWARD summa cum laude

Siawoosh Mohammadi[1], *Daniel Carey*[2], *Fred Dick*[2], *Joern Diedrichsen*[3], *Martina F. Callaghan*[4], *Marty Sereno*[2], *Marco Reisert*[5], *Nikolaus Weiskopf*[4]
[1]Department of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Birkbeck/UCL Centre for NeuroImaging, London, United Kingdom; [3]UCL Institute of Cognitive Neurology, London, United Kingdom; [4]Wellcome Trust

Centre for Neuroimaging, UCL Institute of Neurology, London, United Kingdom; [5]University of Freiburg Medical Center, Freiburg, Germany

0005. *In Vivo* Mapping of Myelin G-Ratio in the Human Spinal Cord
T. Duval[1], S. Lévy[1], N. Stikov[1, 2], A. Mezer[3], T. Witzel[4], B. Keil[4], V. Smith[4], L. L. Wald[4], E. Klawiter[4], J. Cohen-Adad[1, 5]
[1]Institute of Biomedical Engineering, Polytechnique Montréal, Montréal, Québec, Canada; [2]Montreal Neuronal Institute, McGill University, Montréal, Québec, Canada; [3]Edmond and Lily Safra Center for Brain Sciences (ELSC), The Hebrew University, Jerusalem, Israel; [4]A.A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA, United States; [5]Functional Neuroimaging Unit, CRIUGM, Université de Montréal, Montréal, Québec, Canada

0006. Physiological Noise Compensation in Gradient Echo Based Myelin Water Imaging
Yoonho Nam[1], Jongho Lee[1]
[1]Department of Electrical and Computer Engineering, Seoul National University, Seoul, Korea

0007. Comparison of ViSTa Myelin Water Imaging with DTI and MT
Han Jang[1], Yoonho Nam[1], Yangsoo Ryu[1], Jongho Lee[1]
[1]Department of Electrical and Computer Engineering, Seoul National University, Seoul, Korea

0008. The Role of Myelin Geometry on Magnetic Susceptibility-Driven Frequency Shifts: Toward Realistic Geometries
Tianyou Xu[1], Sean Foxley[1], Michiel Kleinnijenhuis, Karla Miller
[1] Oxford Centre for Functional Magnetic Resonance Imaging of the Brain, University of Oxford, Oxford, Oxfordshire, United Kingdom

0009. Understanding Signal Sources of MT Asymmetry and Inhomogeneous MT for Imaging Myelination
Jae-Woong Kim[1], Seung Hong Choi[2], Sung-Hong Park[1]
[1]Korea Advanced Institute of Science and Technology, Daejeon, Korea; [2]Seoul National University, Seoul, Korea

0010. Fast Absolute Myelin Water Mapping Without an External Water Standard
Thanh D. Nguyen[1], Sneha Pandya[1], Pascal Spincemaille[1], Susan A. Gauthier[1], Yi Wang[1]
[1]Weill Cornell Medical College, New York, NY, United States

0011. Frequency Difference Mapping for Measurement of White Matter Microstructure
Benjamin Tendler[1], Samuel Wharton[1], Richard Bowtell[1]
[1]Sir Peter Mansfield Imaging Centre, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

0012. Modelling the Effect of White Matter Microstructure on Gradient Echo Signal Evolution
Benjamin Tendler[1], Samuel Wharton[1], Richard Bowtell[1]
[1]Sir Peter Mansfield Imaging Centre, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

0013. Possible Contribution of the Extracellular Matrix to the MRI Contrast in the Brain
Riccardo Metere[1], Markus Morawski[2], Henrik Marschner[1], Carsten Jäger[2], Tobias Streubel[1], Stefan Geyer[1], Katja Reimann[1], Andreas Schäfer[1], Harald E. Möller[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; [2]Paul-Flechsig-Institute for Brain Research, University of Leipzig, Leipzig, Germany

0014. Signatures of Microstructure in Conventional Gradient and Spin Echo Signals
Pippa Storey[1], Sohae Chung[1], Noam Ben-Eliezer[1], Gregory Lemberskiy[1], Yvonne W. Lui[1], Dmitry S. Novikov[1]
[1]Radiology Department, New York University School of Medicine, New York, NY, United States

0015. Dependance of the Apparent T_1 on Magetization Transfer
Peter van Gelderen[1], Xu Jiang[1], Jeff H. Duyn[1]
[1]AMRI, LFMI, NINDS, National Institutes of Health, Bethesda, MD, United States

0016. Towards an Optimized and Standardized Amide Proton Transfer (APT) MRI Sequence and Protocol for Clinical Applications

ISMRM MERIT AWARD magna cum laude

Hye-Young Heo[1], Yi Zhang[1], Jochen Keupp[2], Yansong Zhao[3], Michael Schar[1], Dong-Hoon Lee[1], Peter C.M van Zijl[1, 4], Jinyuan Zhou[1, 4]
[1]Russell H Morgan Department of Radiology and Radiological Science, Johns Hopkins University, Baltimore, MD, United States; [2]Philips Research, Hamburg, Germany; [3]Philips Healthcare, Cleveland, OH, United States; [4]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute , Baltimore, MD, United States

0017. Can Nuclear Overhauser Enhancement Mediated Chemical Exchange Saturation Transfer (NOE-CEST) Offer a New Insight in Acute Stroke Diagnosis?

Yee Kai Tee[1], George WJ Harston[2], Nicholas Blockley[3], Robert Frost[3], Thomas W. Okell[3], Sivarajan Thandeswaran[2], Fintan Sheerin[4], Peter Jezzard[3], James Kennedy[2], Stephen Payne[5], Michael Chappell[5]
[1]Department of Mechatronics and BioMedical Engineering, Universiti Tunku Abdul Rahman, KL, Malaysia; [2]Acute Stroke Programme, Radcliffe Department of Medicine, Oxford University, Oxfordshire, United Kingdom; [3]Oxford Centre of Functional MRI of the Brain, Nuffield Department of Clinical Neurosciences, Oxford University, Oxfordshire, United Kingdom; [4]Department of Neuroradiology, Oxford University Hospitals NHS Trust, Oxfordshire, United Kingdom; [5]Department of Engineering Science, Institute of Biomedical Engineering, Oxford University, Oxfordshire, United Kingdom

0018. GluCEST Imaging in a Primate Model of Alzheimer's Disease

Julien Flament[1, 2], Charlotte Gary[2, 3], James Koch[2, 4], Fabien Pifferi[5], Emmanuel Comoy[6], Jean-Luc Picq[7], Julien Valette[2, 3], Marc Dhenain[2, 3]
[1]INSERM US27, CRC-MIRCen, Fontenay-aux-Roses, France; [2]CEA/DSV/I2BM/MIRCen, Fontenay-aux-Roses, France; [3]CNRS URA 2210, Fontenay-aux-Roses, France; [4]Department of Psychology, University of Wisconsin, Oshkosh, WI, United States; [5]CNRS-MNHN UMR 7179, Brunoy, France; [6]CEA/DSV/iMETI/SEPIA, Fontenay-aux-Roses, France; [7]EA 2027, Université Paris 8, Saint-Denis, France

New Insights & Innovations in Cardiovascular MRI

Constitution Hall 105 10:45-12:45 *Moderators:* Daniel Kim, Ph.D. & Sonia Nielles-Vallespin, Ph.D.

10:45 **0019. Novel Biomarkers of Mitochondrial Function: The Mitochondrial Index and the Crossing Point of Glucose and Oxygen Consumption Curves Obtained *In Vivo* by Dynamic Deuterium Magnetic Resonance**

Gheorghe D. Mateescu[1], Chris A. Flask[2, 3], Allen Ye[4], Bernadette Erokwu[5], Michael Twieg[6], Karishma Gupta[5], Mark Griswold, [35]
[1]Chemistry, Case Western Reserve University, Cleveland, OH, United States; [2]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [3]Case Western Reserve University, OH, United States; [4]Bioengineering, University of Indiana at Chicago, IN, United States; [5]Radiology, Case Western Reserve University, OH, United States; [6]Biomedical Engineering, Case Western Reserve University, OH, United States

10:57 **0020. Chronic Diabetes Reprograms Carbohydrate Metabolism in the Heart and Kidney: A Hyperpolarised 13C Magnetic Resonance Spectroscopy Study**

Marie A. Schroeder[1, 2], Albert P. Chen[2, 3], Albert Tsui[4], M Mitchell[4], Jean-Francois Desjardins[4], Golam Kabir[4], Charles H. Cunningham[2], Kim A. Connelly[2, 4]
[1]Singapore Bioimaging Consortium, Agency for Science, Technology and Research, Singapore, Singapore; [2]Schulich Heart Research Program, Sunnybrook Health Science Centre, Toronto, ON, Canada; [3]GE-Healthcare, Toronto, ON, Canada; [4]Keenan Research Centre in the Li Ka Shing Knowledge Institute, St. Michael's Hospital, Toronto, ON, Canada

11:09 **0021. Cardiac Metabolic Adaptations in Diabetic Mice Protect the Heart from Pressure Overload-Induced Failure: A Combined *In Vivo* MRI, MRS, and PET Approach**

Desiree Abdurrachim[1], Miranda Nabben[1], Verena Hoerr[2, 3], Michael T. Kuhlmann[4], Philipp R. Bovenkamp[2], Michael Schäfers[4], Klaas Nicolay[1], Cornelius Faber[2], Sven Hermann[4], Jeanine J. Prompers[1]
[1]Biomedical NMR, Eindhoven University of Technology, Eindhoven, Netherlands; [2]Department of Clinical Radiology, University Hospital Münster, Münster, Germany; [3]Institute of Medical Microbiology, Jena University Hospital, Jena, Germany; [4]European Institute for Molecular Imaging, Münster, Germany

11:21 **0022. Alterations in Myofiber Architecture in Response to Left Ventricular Pressure Overload Are Associated with the Upregulation of Genes Encoding for Cell Adhesion and Matrix Remodeling**

Choukri Mekkaoui[1], Howard H. Chen[1], Yin-Ching Iris Chen[1], Marcel P. Jackowski[2], William J. Kostis[1], Timothy G. Reese[1], Ronglih Liao[3], David E. Sosnovik[1]

[1]Harvard Medical School-Massachusetts General Hospital, Boston, MA, United States; [2]University of São Paulo, São Paulo, Brazil; [3]Brigham and Women's Hospital, Boston, MA, United States

11:33 **0023. Flexible Time-Resolved Golden Angle Dual-Inversion Recovery Acquisition to Facilitate Sequence Timing in High-Resolution Coronary Vessel Wall MRI at 3T**

ISMRM MERIT AWARD summa cum laude

Giulia Ginami[1, 2], Jérôme Yerly[1, 2], Matthias Stuber[1, 2]
[1]Department of Radiology, University Hospital (CHUV) and University of Lausanne (UNIL), Lausanne, Switzerland; [2]Center for Biomedical Imaging (CIBM), Lausanne and Geneva, Switzerland

11:45 **0024. *In Vivo* Measurement of Vessel Wall Diffusion Anisotropy in Carotid Arteries**

Peter Opriessnig[1], Harald Mangge[1], Rudolf Stollberger[2], David Porter[3], Hannes Deutschmann[4], Gernot Reishofer[5]
[1]Clinical Institute for Medical and Chemical Laboratory Diagnosis, Medical University of Graz, Graz, Austria; [2]Institute of Medical Engineering, Graz University of Technology, Austria; [3]MR R&D, Siemens AG, Healthcare Sector, Erlangen, Germany; [4]Department of Radiology, Division of Vascular and Interventional Radiology, Medical University of Graz, Austria; [5]Department of Radiology, Division of Neuroradiology, Medical University of Graz, Austria

11:57 **0025. Steady-State Real-Time Cine Imaging of Stress/Rest Myocardial Perfusion for Rapid Detection of High-Grade Coronary Stenosis**

Behzad Sharif[1], Reza Arsanjani[1], Hsin-Jung Yang[1], Rohan Dharmakumar[1], Noel Bairey Merz[1], Daniel S. Berman[1], Debiao Li[1]
[1]Biomedical Imaging Research Institute, Dept. of Biomedical Sciences, Cedars-Sinai Medical Center, Los Angeles, CA, United States

12:09 **0026. MR Fingerprinting for Quantification of Myocardial T1, T2, and M0**

ISMRM MERIT AWARD magna cum laude

Jesse I. Hamilton[1], Yun Jiang[1], Yong Chen[2], Dan Ma[1], Wei-Ching Lo[1], Mark Griswold, [12], Nicole Seiberlich[1, 2]
[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Radiology, Case Western Reserve University, Cleveland, OH, United States

12:21 **0027. Five-Dimensional Cardiac and Respiratory Motion-Resolved Whole-Heart MRI**

ISMRM MERIT AWARD summa cum laude

Li Feng[1], Simone Coppo[2], Davide Piccini[2, 3], Ruth P. Lim[4], Matthias Stuber[2], Daniel K. Sodickson[1], Ricardo Otazo[1]
[1]Center for Advanced Imaging Innovation and Research (CAI2R), Department of Radiology, New York University School of Medicine, New York, NY, United States; [2]Department of Radiology, University Hospital (CHUV) and University of Lausanne (UNIL) / Center for Biomedical Imaging (CIBM), Lausanne, Switzerland; [3]Advanced Clinical Imaging Technology, Siemens Healthcare IM BM PI, Lausanne, Switzerland; [4]Department of Radiology, Austin Health and The University of Melbourne, Melbourne, Victoria, Australia

12:33 **0028. Improved Free-Running Self-Navigated 4D Whole-Heart MRI Through Combination of Compressed Sensing and Parallel Imaging.**

ISMRM MERIT AWARD summa cum laude

Simone Coppo[1], Li Feng[2], Davide Piccini[3, 4], Jérôme Chaptinel[1], Gabriele Bonanno[1], Gabriella Vincenti[5], Juerg Schwitter[5], Ricardo Otazo[2], Daniel K. Sodickson[2], Matthias Stuber[1]
[1]Department of Radiology, University Hospital (CHUV), University of Lausanne (UNIL), Center for Biomedical Imaging (CIBM), Lausanne, Switzerland; [2]Center for Advanced Imaging Innovation and Research (CAI2R), Department of Radiology, New York University School of Medicine, New York, United States; [3]Advanced Clinical Imaging Technology, Siemens Healthcare IM BM PI, Lausanne, Switzerland; [4]Department of Radiology, University Hospital (CHUV), University of Lausanne (UNIL), Center for Biomedical Imaging (CIBM), Lausanne,, Switzerland; [5]Department of Cardiology, University Hospital (CHUV), University of Lausanne (UNIL), Lausanne, Switzerland

Young Investigator Awards Presentations

Room 701 A 10:45-12:45

10:45 **0029. Selective Magnetic Resonance Imaging of Magnetic Nanoparticles by Acoustically Induced Rotary Saturation (AIRS)**

Bo Zhu[1, 2], Thomas Witzel[1], Shan Jiang[3], Susie Y. Huang[1], Bruce R. Rosen[1, 4], Lawrence L. Wald[1, 2]
[1]Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Charlestown, MA, United States; [2]Harvard-MIT Division of Health Sciences Technology, Massachusetts Institute of Technology, Cambridge, MA, United States; [3]David H Koch Institute for Integrative Cancer Research, Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States; [4]Department of Meridian & Acupuncture, Collaborating Center for Traditional Medicine, East-West Medi, Kyung Hee University, Seoul , Korea

11:05 0030. Spin Echoes in the Regime of Weak Dephasing

Jakob Assländer[1], Steffen Glaser[2], Jürgen Hennig[1]
[1]Dept. of Radiology - Medical Physics, University Medical Center, Freiburg, Germany; [2]Dept. of Chemistry, Technische Universität München, Germany

11:25 0031. k-T FASTER: Acceleration of fMRI Data Acquisition Using Low Rank Constraints

Mark Chiew[1], Stephen M. Smith[1], Peter J. Koopmans[1], Nadine N. Graedel[1], Thomas Blumensath[1], Karla L. Miller[1]
[1]FMRIB Centre, University of Oxford, Oxford, Oxfordshire, United Kingdom

11:45 0032. Free-Breathing Pediatric MRI with Nonrigid Motion Correction and Acceleration

Joseph Yitan Cheng[1, 2], Tao Zhang[1, 2], Nichanan Ruangwattanapaisarn[3], Marcus T. Alley[2], Martin Uecker[4], John M. Pauly[1], Michael Lustig[4], Shreyas S. Vasanawala[2]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Radiology, Stanford University, Stanford, CA, United States; [3]Ramathibodi Hospital, Mahidol University, Bangkok, Thailand; [4]Electrical Engineering and Computer Sciences, University of California, Berkeley, CA, United States

12:05 0033. *In Vivo* Visualization of Mesoscopic Anatomy of Healthy and Pathological Lymph Nodes Using 7T MRI: A Feasibility Study

Martin Thomas Freitag[1], Mathies Breithaupt[2], Moritz Berger[2], Reiner Umathum[2], Armin M. Nagel[2], Jessica Hassel[3], Mark E. Ladd[2], Wolfhard Semmler[2], Bram Stieltjes[4], Heinz-Peter Schlemmer[4]
[1]Section Quantitative Imaging Based Disease Characterization, German Cancer Research Center, Heidelberg, Baden-Wuerttemberg, Germany; [2]Department of Medical Physics in Radiology, German Cancer Research Center, Heidelberg, Germany; [3]Department of Dermatology, National Center for Tumor Diseases (NCT), University of Heidelberg, Heidelberg, Germany; [4]Department of Radiology, German Cancer Research Center, Heidelberg, Baden-Wuerttemberg, Germany

12:25 0034. Automatic and Quantitative Assessment of Total and Regional Muscle Tissue Volume Using Multi-Atlas Segmentation

Anette Karlsson[1, 2], Johannes Rosander[3], Joakim Tallberg[4], Anders Grönqvist[2, 5], Magnus Borga[1, 2], Olof Dahlqvist Leinhard[2, 6]
[1]Department of Biomedical Engineering (IMT), Linköping University, Linköping, Sweden, Sweden; [2]Center for Medical Image Science and Visualization (CMIV), Linköping University, Linköping, Sweden; [3]Advanced MR Analytics (AMRA) AB,, Linköping, Sweden; [4]Center for Medical Image Science and Visualization (CMIV), Linköping University,, Linköping, Sweden; [5]Department of Radiation Physics and Department of Medical and Health Sciences, Linköping University, Linköping, Sweden; [6]Department of Medical and Health Sciences (IMH), Linköping University, Linköping, Sweden

Thermometry & Thermotherapy

Room 701 B 10:45-12:45 *Moderators:* Allison H. Payne, Ph.D. & Elena A. Kaye, Ph.D.

10:45 0035. MRI-Guided Focal Laser Ablation for Localized Prostate Cancer: a Single Center Report on Technique and Intermediate-Term Outcomes

Sherif G. Nour[1, 2], Tracy E. Powell, [23], Peter J. Rossi[4, 5]
[1]Radiology & Imaging Sciences, Emory University, Atlanta, GA, United States; [2]Interventional MRI Program, Emory University, GA, United States; [3]Radiology & Imaging Sciences, Emory University, GA, United States; [4]Radiation Oncology, Emory University, GA, United States; [5]School of Medicine, Emory University, GA, United States

10:57 0036. Multi-Parametric MRI Assessment of Tumor Response to High-Intensity Focused Ultrasound in a Rat Glioma Model

Yi Zhang[1], Dong-Hoon Lee[1], Kai Zhang[1], Antonella Mangraviti[2], Chen Yang[1], Hye-Young Heo[1], Betty Tyler[2], Ari Partanen[3], Keyvan Farahani[1, 4], Paul Bottomley[1], Peter van Zijl[1, 5], Jinyuan Zhou[1, 5]
[1]Division of MR Research, Department of Radiolgoy, Johns Hopkins University, Baltimore, MD, United States; [2]Department of Neurosurgery, Johns Hopkins University, Baltimore, MD, United States; [3]Clinical Science MR Therapy, Philips Healthcare, Andover, MA, United States; [4]National Cancer Institue, Bethesda, MD, United States; [5]F. M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States

11:09 0037. MR-Guided Blood-Brain Barrier Disruption by Transcranial Focused Ultrasound: Preclinical Testing on a Trans-Human Skull Pig Model

Yuexi Huang[1], Ryan Alkins[1], Michael L. Schwartz[2], Kullervo Hynynen[1, 3]
[1]Sunnybrook Research Institute, Toronto, ON, Canada; [2]Division of Neurosurgery, Sunnybrook Health Sciences Centre, Toronto, ON, Canada; [3]Department of Medical Biophysics, University of Toronto, Toronto, ON, Canada

11:21 **0038.** **Respiration Artifact Correction in PRF MR Thermometry Using Phase Navigators**

ISMRM MERIT AWARD magna cum laude

Bryant T. Svedin[1, 2], Allison Payne, [13], Dennis L. Parker[1, 4]
[1]Utah Center for Advanced Imaging Research, Salt Lake City, UT, United States; [2]Physics, University of Utah, Salt Lake City, UT, United States; [3]Mechanical Engineering, University of Utah, Salt Lake City, UT, United States; [4]Radiology, University of Utah, Salt Lake City, UT, United States

11:33 **0039.** **White-Matter-Nulled MP-RAGE Permits Patient-Specific Tracking of Focused Ultrasound Thalamic Ablation for Essential Tremor**

ISMRM MERIT AWARD summa cum laude

Jason Su[1], Thomas Tourdias[2], Manojkumar Saranathan[3], Casey Halpern[4], Kim Butts-Pauly[3], Jaimie Henderson[4], Pejman Ghanouni[3], Brian K. Rutt[3]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Neuroradiology, Bordeaux University Hospital, Bordeaux, France; [3]Neuroradiology, Stanford University, Stanford, CA, United States; [4]Neurosurgery, Stanford University, Stanford, CA, United States

11:45 **0040.** **Screen Printed HIFU Compatible Receive Coil**

ISMRM MERIT AWARD magna cum laude

Joseph Russell Corea[1], Patrick Ye[2], Anita Flynn[1], Kim Butts-Pauly[2], Ana Claudia Arias[1], Michael Lustig[1]
[1]University of California Berkeley, Berkeley, CA, United States; [2]Radiology, Stanford, Stanford, CA, United States

11:57 **0041.** **Hybrid MR/US-Guided HIFU for Abdominal Targets: *In Vivo* Demonstration of 3D Motion Correction and Focal Point Locking on an Absolute Reference Marker**

Lorena Petrusca[1], Gibran Manasseh[2], Zarko Celicanin[3], Romain Breguet, Oliver Bieri[3], Vincent Auboiroux[4], Christoph D. Becker, Sylvain Terraz, Rares V. Salomir[2]
[1]University of Geneva, Geneva, Switzerland; [2]Radiology, University Hospitals of Geneva, Geneva, Switzerland; [3]University Hospital Basel, Basel, Switzerland; [4]LETI CEA, Grenoble, France, France

12:09 **0042.** **Motion Correction Strategies for Cardiac MR Thermometry During RF-Ablation.**

Valéry Ozenne[1], Solenn Toupin[1, 2], Baudouin Denis de Senneville[3], Pierre Bour[1], Fanny Vaillant[1], Matthieu Lepetit-Coiffé[2], Pierre Jaïs[1], Bruno Quesson[1]
[1]L'Institut de Rythmologie et Modélisation Cardiaque, Bordeaux, France; [2]SIEMENS Healthcare, Saint Denis, France; [3]IMB, UMR 5251 CNRS/University of Bordeaux, Bordeaux, France

12:21 **0043.** **Model-Based Multi-Echo Water/Fat-Separated MR Thermometry**

ISMRM MERIT AWARD magna cum laude

Megan E. Poorman[1, 2], Chris J. Diederich[3], Graham Sommer[4], Kim Butts Pauly[4], William A. Grissom[1, 2]
[1]Biomedical Engineering, Vanderbilt University, Nashville, TN, United States; [2]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [3]Radiation Oncology, University of California, San Francisco, CA, United States; [4]Radiology, Stanford University, Stanford, CA, United States

12:33 **0044.** **Interventional Magnetic Resonance Elastography for MRI-Guided Percutaneous Procedures.**

ISMRM MERIT AWARD magna cum laude

Nadège Corbin[1], Jonathan Vappou[1], Elodie Breton[1], Quentin Boehler[1], Laurent Barbé[1], Pierre Renaud[1], Michel de Mathelin[1]
[1]ICube, Université de Strasbourg, CNRS, IHU Strasbourg, Strasbourg, France

fMRI: Resting-State Functional Connectivity

Room 714 A/B 10:45-12:45 *Moderators:* Mark J. Lowe, Ph.D. & T.B.A.

10:45 **0045.** **Comparison of BOLD and CBV-Weighted Resting State Connectivity to an Anatomical 'gold Standard' in the Motor Network of the Squirrel Monkey Brain**

ISMRM MERIT AWARD summa cum laude

Yurui Gao[1, 2], Feng Wang[2, 3], Iwona Stepniewska[4], Ann S. Choe[1, 2], Kurt G. Schilling, [12], Landman A. Bennett[2, 5], Adam W. Anderson[1, 2], Zhaohua Ding[2, 3], Limin Chen[2, 3], John C. Gore[2, 3]
[1]Department of Biomedical Engeneering, Vanderbilt University, Nashville, TN, United States; [2]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [3]Department of Radiology and Radiological Science, Vanderbilt University, Nashville, TN, United States; [4]Department of Psychology, Vanderbilt University, TN, United States; [5]Department of Electrical Engeneering, Vanderbilt University, Nashville, TN, United States

10:57 0046. Remodeled Resting State Functional Connectivity Pattern in the Default Mode Network and Cortico – Striatal Circuitry of GPR88 Knock-Out Mouse Brain

ISMRM MERIT AWARD summa cum laude

Tanzil Mahmud Arefin[1, 2], Anna Mechling[2, 3], Thomas Bienert[2], Hsu-Lei Lee[2], Sami Ben Hamida[4], Dominik V. Elverfeldt[2], Jürgen Hennig[2], Brigitte Kieffer[5], Laura-Adela Harsan[2]
[1]Computational Neuroscience, Bernstein Center Freiburg, University of Freiburg, Freiburg, Baden - Württemberg, Germany; [2]Diagnostic Radiology, Medical Physics, University Hospital Freiburg, Freiburg, Baden - Württemberg, Germany; [3]Faculty of Biology, University of Freiburg, Freiburg, Baden - Württemberg, Germany; [4]4Institut de Génétique et de Biologie Moléculaire et Cellulaire, Strasbourg, France; [5]Douglas Research Center, McGill University, Montreal, Canada

11:09 0047. Voxel-Scale Mapping of the Mouse Brain Functional Connectome

Adam Liska[1, 2], Alberto Galbusera[1], Adam J. Schwarz[3], Alessandro Gozzi[1]
[1]Center for Neuroscience and Cognitive Systems @ UniTn, Istituto Italiano di Tecnologia, Rovereto, TN, Italy; [2]Center for Mind/Brain Sciences, University of Trento, Rovereto, TN, Italy; [3]Department of Psychological and Brain Sciences, Indiana University, Bloomington, IN, United States

11:21 0048. Mapping Resting-State Dynamics on Spatio-Temporal Graphs: A Combined Functional and Diffusion MRI Approach

ISMRM MERIT AWARD magna cum laude

Alessandra Griffa[1, 2], Kirell Benzi[3], Benjamin Ricaud[3], Xavier Bresson[3], Pierre Vandergheynst[3], Patric Hagmann, [12], Jean-Philippe Thiran[1, 2]
[1]Signal Processing Laboratory 5 (LTS5), École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; [2]Department of Radiology, Lausanne University Hospital (CHUV) and University of Lausanne, Lausanne, Switzerland; [3]Signal Processing Laboratory 2 (LTS2), École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland

11:33 0049. Does Vasomotion Alter Functional Connectivity? a Multi-Modal Study Using Optical Imaging Spectroscopy and BOLD fMRI

ISMRM MERIT AWARD magna cum laude

Priya Patel[1], Aneurin James Kennerley[1], Luke Boorman[1], Myles Jones[1], Jason Berwick[1]
[1]Psychology, University of Sheffield, Sheffield, South Yorks, United Kingdom

11:45 0050. Can Resting State fMRI Be Used to Map Cerebrovascular Reactivity?

Peiying Liu[1], Babu G. Welch[2], Darlene King[2], Yang Li[1], Marco Pinho[1, 3], Hanzhang Lu[1]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Neurological Surgery Clinic, University of Texas Southwestern Medical Center, Dallas, TX, United States; [3]Department of Radiology, University of Texas Southwestern Medical Center, TX, United States

11:57 0051. Subject-Specific Modeling of Physiological Noise in Resting-State fMRI at 7T

Sandro Nunes[1], Marta Bianciardi[2], Afonso Dias[1], Rodolfo Abreu[1], Juliana Rodrigues[1], L. Miguel Silveira[3], Lawrence L. Wald[2], Patricia Figueiredo[1]
[1]Institute for Systems and Robotics and Department of Bioengineering, Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal; [2]Department of Radiology, A.A. Martinos Center for Biomedical Imaging, MGH and Harvard Medical School, Boston, MA, United States; [3]INESC-ID and Department of Electrical and Computer Engineering, Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal

12:09 0052. Inter-Scanner Reliability of Graph-Theoretic Brain Network Metrics

ISMRM MERIT AWARD magna cum laude

Thomas Welton[1], Dorothee P. Auer[1], Robert A. Dineen[1]
[1]Sir Peter Mansfield Imaging Centre, School of Medicine, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

12:21 0053. Anisotropy of Local Functional Connectivity (LFC) in Resting State fMRI Time Series: What Does It Say About the fMRI Signal?

ISMRM MERIT AWARD summa cum laude

Michael J. Tobia[1], David Gallagher[1], Rahul Dewal[1], Prasanna Karunanayaka[1], Sebastien Rupprecht[1], Qing X. Yang[1]
[1]Center for NMR Research, Penn State University, Hershey, PA, United States

12:33 0054. fMRI-Derived Functional Connectivity Density Mapping as a Biomarker of State Changes as Reflected by Glucose Metabolism

ISMRM MERIT AWARD magna cum laude

Garth John Thompson[1], Valentin Riedl[2, 3], Timo Grimmer, [34], Alexander Drzezga[5], Peter Herman[1], Fahmeed Hyder[1, 6]
[1]Diagnostic Radiology, Magnetic Resonance Research Center, Yale University, New Haven, CT, United States; [2]Neuroradiology, Nuclear Medicine, Universität München, München, Germany; [3]Technische, Universität München - Neuroimaging Center, München,

Germany; [4]Psychiatry, Universität München, München, Germany; [5]Nuclear Medicine, Uniklinikum, Koeln, Germany; [6]Biomedical Engineering, Yale University, New Haven, CT, United States

New Encoding Methods for MRS & Non-Proton MRI

Room 716 A/B 10:45-12:45 *Moderators:* Daniel M. Spielman, Ph.D. & Assaf Tal, Ph.D.

10:45 0055. Hybrid Encoding for Quantitative Electron Paramagnetic Resonance Imaging

Hyungseok Jang[1, 2], Chandramouli Gadisetti[3], Devasahayam Nallathamby[4], Murali C. Krishna[4], Alan B. McMillan[1]
[1]Radiology, University of Wisconsin, Madison, WI, United States; [2]Electrical and Computer Engineering, University of Wisconsin, Madison, WI, United States; [3]GenEpria Consulting Inc., Columbia, MD, United States; [4]Radiation Biology Branch, Center for Cancer Research, National Cancer Institute, Bethesda, MD, United States

10:57 0056. Efficient Quantification of Metabolite Concentration and T_1 Relaxation by ^{31}P Spectroscopic Magnetic Resonance Fingerprinting

Charlie Yi Wang[1], Mark Alan Griswold[2], Xin Yu[2]
[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Radiology, Case Western Reserve University, Cleveland, OH, United States

11:09 0057. Accelerated Multi Voxel MR Spectroscopy

Vincent Boer[1], Dennis Klomp, Peter Barker[2]
[1]Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]Radiology, Johns Hopkins University, baltimore, MD, United States

11:21 0058. Quantitative Proton MR Spectroscopy of Non-Enhancing Lesions and Pre-Lesional Tissue in Early Multiple Sclerosis

Ivan I. Kirov[1, 2], Shu Liu[1, 2], William E. Wu[1, 2], Assaf Tal[3], Matthew Davitz[1, 2], Henry Rusinek[1, 2], Joseph Herbert[4], Oded Gonen[1, 2]
[1]Radiology, New York University School of Medicine, New York, NY, United States; [2]Center for Advanced Imaging Innovation and Research (CAI2R), New York University, New York, NY, United States; [3]Chemical Physics, Weizmann Institute of Science, Israel; [4]Neurology, New York University School of Medicine, New York, NY, United States

11:33 0059. *In Vivo* Quantitative MR Spectroscopy Using Relaxation Enhancement: Unassigned Brain Metabolite Resonances at 21T Upon Stroke

Tangi Roussel[1], Jens T. Rosenberg[2, 3], Samuel C. Grant[2, 3], Lucio Frydman[1]
[1]Department of Chemical Physics, Weizmann Institute of Science, Rehovot, Israel; [2]National High Magnetic Field Laboratory, Tallahassee, FL, United States; [3]Chemical & Biomedical Engineering, The Florida State University, Tallahassee, FL, United States

11:45 0060. Accelerated Echo Planer J-Resolved Spectroscopic Imaging of Insular Cortex and Putamen in Obstructive Sleep Apnea

Manoj Kumar Sarma[1], Paul Michael Macey[2], Rajakumar Nagarajan[1], Ravi Aysola[3], M.Albert Thomas[1]
[1]Radiological Sciences, UCLA School of Medicine, Los angeles, CA, United States; [2]School of Nursing, UCLA School of Medicine, Los angeles, CA, United States; [3]Division of Pulmonary and Critical Care Medicine, UCLA School of Medicine, Los angeles, CA, United States

11:57 0061. Validation of Accelerated TE-Averaged Echo-Planar Spectroscopic Imaging in Healthy and HIV Youths

Zohaib Iqbal[1], Neil E. Wilson[1], Brian L. Burns[1], Margaret A. Keller[1], Michael Albert Thomas[1]
[1]University of California - Los Angeles, Los Angeles, CA, United States

12:09 0062. Multiband MR Spectroscopic Imaging in Human Brain

Jullie W. Pan[1], Tiejun Zhao[2], Victor Yushmanov[1], Hoby Hetherington[1]
[1]University of Pittsburgh, Pittsburgh, PA, United States; [2]Siemens Medical Systems, PA, United States

12:21 0063. Synchronous Sodium (^{23}Na) and Proton (^{1}H) Radial Imaging of the Human Knee on a Clinical MRI Scanner

Joshua Kaggie[1], Bijaya Thapa[1], Nabraj Sapkota[1], Glen Morrell[1], Neal Bangerter[2], Kyle Jeong[1], Xianfeng Shi[3], Eun-Kee Jeong[1]

[1]Utah Center for Advanced Imaging Research, Radiology, University of Utah, Salt Lake City, UT, United States; [2]Electrical and Computer Engineering, Brigham Young University, Provo, UT, United States; [3]The Brain Institute, Psychiatry, University of Utah, Salt Lake City, UT, United States

12:33 0064. Fast Sodium Imaging at 9.4 Tesla

ISMRM MERIT AWARD magna cum laude

Christian Mirkes[1, 2], G. Shajan[1], Klaus Scheffler[1, 2]
[1]High-Field MR Center, Max Planck Institute for Biological Cybernetics, Tuebingen, BW, Germany; [2]Department for Biomedical Magnetic Resonance, University of Tübingen, Tuebingen, BW, Germany

Brain Tumor Imaging - Focus on Treatment

Constitution Hall 107 10:45-12:45 *Moderators:* Janine M. Lupo, Ph.D. & T.B.A.

10:45 0065. MRI Tracked Tumor Physiology in the Hours After 20 Gy Single-Fraction Radiation

Rasha M. Elmghirbi[1, 2], Stephen L. Brown[3], Tavarekere N. Nagaraja[4], Madhava P. Aryal[2, 5], Kelly Ann Keenan[4], Swayamprav Panda[2], Hassan Bagher-Ebadian[2], James R. Ewing, [12]
[1]Physics, Oakland University, Rochester, MI, United States; [2]Neurology, Henry Ford Health System, Detroit, MI, United States; [3]Radiation Oncology, Henry Ford Health System, Detroit, MI, United States; [4]Anesthesiology, Henry Ford Health System, Detroit, MI, United States; [5]Radiation Oncology, University of Michigan, Ann Arbor, MI, United States

10:57 0066. Application of 3D High-Resolution Multi-Echo TOF-SWI Acquisition in Radiation-Induced Cerebral Microbleeds at 3T

ISMRM MERIT AWARD summa cum laude

Xiaowei Zou[1], Wei Bian[2], Jonathan I. Tamir[3], Suchandrima Banerjee[4], Susan M. Chang[5], Michael Lustig[3], Sarah J. Nelson[1], Janine M. Lupo[1]
[1]University of California San Francisco, San Francisco, CA, United States; [2]Radiology , Stanford University, Stanford, CA, United States; [3]Electrical Engineering and Computer Science, University of California Berkeley, Berkeley, CA, United States; [4]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [5]Neurological Surgery, University of California San Francisco, San Francisco, CA, United States

11:09 0067. Differentiation Between Progressive Disease and Treatment Necrosis in Patients with Glioblastoma Using Dynamic Contrast Enhancement MRI

ISMRM MERIT AWARD magna cum laude

Moran Artzi[1, 2], Gilad Liberman[1, 3], Guy Nadav[1, 4], Deborah T. Blumenthal[5], Felix Bokstein[5], Orna Aizenstein[1], Dafna Ben Bashat[1, 6]
[1]Functional Brain Center, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel; [2]Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel; [3]Department of Chemical Physics, Weizmann Institute, Rehovot, Israel; [4]Faculty of Engineering, Tel Aviv University, Tel Aviv, Israel; [5]Neuro-Oncology Service, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel; [6]Sackler Faculty of Medicine and Sagol School of Neuroscience, Tel Aviv University, Tel Aviv, Israel

11:21 0068. Dose and Volume Effects of Radiation on White Matter in Children Treated for Medulloblastoma

Iska Moxon-Emre[1, 2], Eric Bouffet[1], Michael D. Taylor[1, 2], Normand Laperriere, [23], Michael Sharpe, [23], Suzanne Laughlin[1], Nadia Scantlebury[1], Nicole Law[1, 2], David Malkin[1, 2], Jovanka Skocic[1], Logan Richard[1, 2], Donald Mabbott[1, 2]
[1]Hospital for Sick Children, Toronto, Ontario, Canada; [2]University of Toronto, Toronto, Ontario, Canada; [3]University Health Network, Toronto, Ontario, Canada

11:33 0069. The Effect of Systemic Chemotherapy on White Matter Tracts Involved with Cognition in Children with NF1-Associated Optic Pathway Gliomas

Peter MK de Blank[1], Michael J. Fisher[2], Timothy PL Roberts[2], Jeffrey I. Berman[2]
[1]UH Case Medical Center, Cleveland, OH, United States; [2]The Children's Hospital of Philadelphia, PA, United States

11:45 0070. Comparison of Diffusion and Perfusion Parameters in Distinguishing Radiation Effect and Necrosis from GBM

Melissa A. Prah[1], Mona M. Al-Gizawiy[1], Wade M. Mueller[2], Raymond G. Hoffmann[3], Mahua Dasgupta[3], Kathleen M. Schmainda[1, 4]
[1]Radiology, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Neurosurgery, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Pediatrics, Medical College of Wisconsin, Milwaukee, WI, United States; [4]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States

11:57 0071. Tissue Mapping in Brain Tumors with Partial Volume Magnetic Resonance Fingerprinting (PV-MRF)

Anagha Deshmane[1], Chaitra Badve[2], Matthew Rogers[3], Alice Yu[3], Dan Ma[1], Jeffrey Sunshine[2], Vikas Gulani[2], Mark Griswold[2]
[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Radiology, University Hospitals, Cleveland, OH, United States; [3]School of Medicine, Case Western Reserve University, Cleveland, OH, United States

12:09 **0072. Parameterization of Delayed Contrast Enhancement Maps for the Depiction of Necrosis in Glioblastoma**
Mary A. McLean[1], Stephen J. Price[2], Ferdia A. Gallagher[3], John R. Griffiths[1]
[1]Cancer Research UK Cambridge Institute, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom; [2]Dept of Neurosurgery, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom; [3]Dept of Radiology, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom

12:21 **0073. Abnormal Tumor and Peritumor Vasculature and Metabolism Differentiate Primary from Metastatic Brain Tumors**
Ingrid Digernes[1], Frédéric Courivaud[1], Cathrine Saxhaug[2], Marco C. Pinho[3], Oliver M. Geier[1], Einar Vik-Mo[4], Knut Haakon Hole[5], Grete Lovland[1], Svein Are Vatnehol[1], Torstein R. Meling[4], Otto Rapalino[6], Atle Bjornerud, [17], Kyrre E. Emblem[1]
[1]The Intervention Centre, Oslo University Hospital, Oslo, Norway; [2]Department of Radiology, Oslo University Hospital, Oslo, Norway; [3]Department of Radiology, University of Texas Southwestern Medical Center, Dallas, TX 75235, United States; [4]Department of Neurosurgery, Oslo University Hospital, Oslo, Norway; [5]Departement of Radiology, Oslo University Hospital, Oslo, Norway; [6]Department of Radiology, Massachusetts General Hospital and Harvard Medical School, Boston, MA 02114, United States; [7]Department of Physics, University of Oslo, Oslo, Norway

12:33 **0074. ^{13}C MRS of Hyperpolarized [1-13C] Pyruvate Can Differentiate Between SAHA Resistant and Sensitive Glioblastoma Cells**
Pia Eriksson[1], Myriam M. Chaumeil1, Joydeep Mukherjee[2, 3], Russell O. Pieper[2, 3], Sabrina M. Ronen[1, 3]
[1]Radiology & Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [2]Neurological Surgery, University of California San Francisco, San Francisco, CA, United States; [3]Brain Tumor Research Center, University of California San Francisco, CA, United States

Novel Image Reconstruction Methods

John Bassett Theatre 102 10:45-12:45 *Moderators:* Justin P. Haldar, Ph.D. & Daniel S. Weller, Ph.D.

10:45 **0075. Acquisition-Free Nyquist Ghost Correction for Parallel Imaging Accelerated EPI**
Eric Peterson[1], Murat Aksoy[1], Julian Maclaren[1], Roland Bammer[1]
[1]Department of Radiology, Stanford University, Stanford, CA, United States

10:57 **0076. Externally Calibrated Parallel Imaging in the Presence of Metallic Implants**
ISMRM MERIT AWARD summa cum laude
Curtis N. Wiens[1], Nathan S. Artz[1, 2], Hyungseok Jang[1], Alan B. McMillan[1], Scott B. Reeder[1, 3]
[1]Department of Radiology, University of Wisconsin, Madison, WI, United States; [2]Department of Radiological Sciences, St. Jude Children's Research Hospital, Memphis, TN, United States; [3]Department of Medical Physics, University of Wisconsin, Madison, WI, United States

11:09 **0077. Joint Compressed Sensing and Sparse Phase Retrieval: Reconstruction from a Combination of Complex and Magnitude-Only K-Space Measurements**
Mehmet Akcakaya[1], Vahid Tarokh[2], Reza Nezafat[1]
[1]Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, United States; [2]Harvard University, Cambridge, MA, United States

11:21 **0078. Simultaneous Multi-Slice MRI Reconstruction Using LORAKS**
ISMRM MERIT AWARD magna cum laude
Tae Hyung Kim[1], Justin P. Haldar[1]
[1]Department of Electrical Engineering, University of Southern California, Los Angeles, CA, United States

11:33 **0079. Complex-Difference Constrained Reconstruction for Accelerated Phase Contrast Flow Imaging**
ISMRM MERIT AWARD magna cum laude
Aiqi Sun[1], Bo Zhao[2], Rui Li[1], Chun Yuan[1, 3]
[1]Center for Biomedical Imaging Research, School of Medicine, Tsinghua University, Beijing, China; [2]Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [3]Department of radiology, University of Washington, WA, United States

11:45 0080. Total Generalized Variation Based Joint Multi-Contrast, Parallel Imaging Reconstruction of Undersampled K-Space Data

ISMRM MERIT AWARD magna cum laude

Adrian Martin[1, 2], Itthi Chatnuntawech[1], Berkin Bilgic[3], Kawin Setsompop[3, 4], Elfar Adalsteinsson[1, 5], Emanuele Schiavi
[1]Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA, United States; [2]Applied Mathematics, Universidad Rey Juan Carlos, Mostoles, Madrid, Spain; [3]A. A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General hospital, Charlestown, MA, United States; [4]Harvard Medical School, Boston, MA, United States; [5]Harvard-MIT Health Sciences and Technology, Massachusetts Institute of Technology, Cambridge, MA, United States

11:57 0081. Non-Linear Phase Correction in Model-Based Reconstruction of the Diffusion Tensor

Jose Raya[1, 2], Florian Knoll[1, 2]
[1]Center for Advanced Imaging Innovation and Research (CAI2R), NYU School of Medicine, New York, NY, United States; [2]Bernard and Irene Schwartz Center for Biomedical Imaging, Department of Radiology, NYU School of Medicine, New York, NY, United States

12:09 0082. Wave-CS: Combining Wave Encoding and Compressed Sensing

Andrew T. Curtis[1], Berkin Bilgic[2], Kawin Setsompop[2], Ravi S. Menon[3], Christopher K. Anand[1]
[1]Computing and Software, McMaster University, Hamilton, Ontario, Canada; [2]Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [3]Robarts Research Institute, London, Ontario, Canada

12:21 0083. TrueCISS: Genuine BSSFP Signal Reconstruction from Undersampled Multiple-Acquisition SSFP Using Model-Based Iterative Non-Linear Inversion

Tom Hilbert[1, 2], Damien Nguyen[3], Tobias Kober[1, 2], Jean-Philippe Thiran[2], Gunnar Krueger[1, 2], Oliver Bieri[3]
[1]Siemens ACIT – CHUV Radiology, Siemens Healthcare IM BM PI & Department of Radiology CHUV, Lausanne, Switzerland; [2]LTS5, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [3]Radiological Physics, Department of Radiology, University of Basel, Basel, Switzerland

12:33 0084. Multiscale Image Reconstruction for MR Fingerprinting

Eric Y. Pierre[1], Dan Ma[1], Yong Chen[2], Chaitra Badve[2], Mark A. Griswold[1, 2]
[1]Department of Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Department of Radiology, Case Western Reserve University & University Hospitals, Cleveland, OH, United States

Combined Educational & Scientific Session
Quantitative Biomarkers in Liver MRI: How to Use Them in the Real World

Room 718 A 10:45-12:45 *Moderators:* Catherine D. G. Hines, Ph.D. & Kartik S. Jhaveri, M.D.

10:45 Introduction

10:48 Liver Fat Quantification - Seriously, Who Cares?
Mustafa Rifaat Bashir

11:03 0085. Systematic Comparison Between Modified Dixon MRI Techniques, MR Spectroscopic Relaxometry, and Different Histologic Quantification Methods in the Assessment of Fatty Liver Disease

Guido Matthias Kukuk[1], Alois Martin Sprinkart[1], Wolfgang Block[1], Holger Eggers[2], Jürgen Gieseke[1, 3], Kanishka Hittatiya[1], Patrick Kupczyk[1], Julian Luetkens[1], Rami Homsi[1], Vera Keil[1], Michael Meier-Schroers[1], Milka Marinova[1], Asadeh Lakghomi[1], Dariusch Hadizadeh[1], Hans Heinz Schild[1], Frank Träber[1]
[1]University of Bonn, Bonn, NRW, Germany; [2]Philips Research Europe, Hamburg, Germany; [3]Philips Healthcare, Best, NL, Netherlands

11:15 0086. Multi-Site, Multi-Vendor Validation of Accuracy, Robustness and Reproducibility of Fat Quantification on an Oil-Water Phantom at 1.5T and 3T

Diego Hernando[1], Mustafa R. Bashir[2], Gavin Hamilton[3], Jean M. Shaffer[2], Samir D. Sharma[1], Claude B. Sirlin[3], Keitaro Sofue[2, 4], Nikolaus M. Szeverenyi[3], Takeshi Yokoo[5, 6], Qing Yuan[5], Scott B. Reeder[1, 7]
[1]Radiology, University of Wisconsin-Madison, Madison, WI, United States; [2]Radiology, Duke University, Durham, NC, United States; [3]Radiology, University of California, San Diego, San Diego, CA, United States; [4]Radiology, Kobe University Graduate School of Medicine, Kobe, Hyogo, Japan; [5]Radiology, University of Texas Southwestern Medical Center, Dallas, TX, United States; [6]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [7]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States

11:27 **Iron**
Takeshi Yokoo

11:42 **0087.** **Quantitative Ultra-Short Echo Time Imaging for Massive Iron Overload Assessment: A Way to Make It Happen**
Axel J. Krafft[1], [2], Ralf B. Loeffler[1], Ruitian Song[1], Mary E. McCarville[1], Matthew D. Robson[3], Jane S. Hankins[4], Claudia M. Hillenbrand[1]
[1]Radiological Sciences, St. Jude Children's Research Hospital, Memphis, TN, United States; [2]Radiology - Medical Physics, University Medical Center Freiburg, German Cancer Consortium (DKTK), Heidelberg, Germany; [3]Radcliffe Department of Medicine, University of Oxford, Oxford, United Kingdom; [4]Hematology, St. Jude Children's Research Hospital, Memphis, TN, United States

11:54 **0088.** **A T2* MRI Prospective Survey on Pancreatic Iron in Thalassemia Major Patients Treated with Deferasirox, Deferiprone and Desferrioxamine**
Antonella Meloni[1], Gennaro Restaino[2], Stefania Renne[3], Massimiliano Missere[2], Maria Chiara Resta[4], Vincenzo Positano[1], Daniele De Marchi[1], Gaetano Roccamo[5], Nicola Romano[6], Maria Giovanna Neri[1], Alessia Pepe[1]
[1]CMR Unit, Fondazione G. Monasterio CNR-Regione Toscana, Pisa, Italy; [2]Dipartimento di Radiologia, Università Cattolica del Sacro Cuore, Campobasso, Italy; [3]Struttura Complessa di Cardioradiologia-UTIC, P.O. "Giovanni Paolo II", Lamezia Terme, Italy; [4]Struttura Complessa di Radiologia, OSP. SS. Annunziata ASL Taranto, Taranto, Italy; [5]Unità di Prevenzione e Cura delle Mictrocitemie, PO di S. Agata di Militello (ASP-ME), S. Agata di Militello (ME), Italy; [6]S.C. Medicina Trasfusionale, AO Arcispedale "S. Maria Nuova", Reggio Emilia, Italy

12:09 **MR Imaging of Liver Fibrosis**
Laurent Huwart

12:21 **0089.** **Evaluation of Spin-Echo Based Sequences for MR Elastography of Liver with Iron Overload**
Bogdan Dzyubak[1], Yogesh K. Mariappan[2], Kevin J. Glaser[1], Sudhakar K. Venkatesh[1], Richard L. Ehman[1]
[1]Radiology, Mayo Clinic, Rochester, MN, United States; [2]Philips Healthcare, Bangalore, Karnataka, India

12:33 **0090.** **Analysis of Clinical and Histopathological Changes That Influence Liver Stiffness Measured by MR Elastography**
ISMRM MERIT AWARD summa cum laude
Wen-Pei Wu[1], [2], Ran-Chou Chen, [23], Chen-Te Chou[1], Chih-Wei Lee[1], Cheng-In Hoi[2], Yi-Chun Wang[2], [4], Kwo-Whei Lee[1]
[1]Radiology, Chang-Hua Christian Hospital, Chang-Hua, Taiwan, Taiwan; [2]Biomedical Imaging and Radiological Science,, National Yang-Ming Medical University, Taiwan, Taiwan; [3]Radiology, Taipei city Hospital, Taipei, Taipei, Taiwan, Taiwan; [4]Taoyuan general hospital ministry of health and welfare, Taiwan, Taiwan

12:45 **Adjournment & Meet the Teachers**

Educational Course
Osteoarthritis: Who, Where & Why?

Organizers: Garry E. Gold, M.D., Richard Kijowski, M.D., William B. Morrison, M.D., & Ravinder R. Regatte, Ph.D.
Room 718 B 10:45-12:45 *Moderators:* Garry E. Gold, M.D. & Richard Kijowski, M.D.

10:45 **Meniscal & Ligament Tears: Role in Knee Degeneration**
Timothy J. Mosher

11:15 **Hip Arthritis: Does Primary OA Exist?**
Jonelle Petscavage

11:45 **Rotator Cuff Arthropathy**
Michael J. Tuite

12:15 **Population Based OA Research: What Has It Shown?**
Ali Guermazi

12:45 **Adjournment & Meet the Teachers**

Combined Educational & Scientific Session
Hyperpolarized C-13 Imaging

Organizers: Peter Caravan, Ph.D. & Matthew Merritt, Ph.D.

Room 801 A/B 10:45-12:45 *Moderators:* Lloyd Lumata, Ph.D. & Mor Mishkovsky, Ph.D.

10:45 **Introduction to Hyperpolarized C-13 MR: What Is It? How Do You Do It?**
Matthew Merritt

11:05 **Acquisition & Reconstruction Strategies: State of the Art**
Charles H. Cunningham

11:25 **Imaging Metabolism with Hyperpolarized 13C-Labelled Cell Substrates**
Kevin M. Brindle

11:45 **0091.** **Hyperpolarized [1-^{13}C]octanoate: A Probe of Myocardial β-Oxidation**
Hikari A. I. Yoshihara[1, 2], Jessica A. M. Bastiaansen, [23], Magnus Karlsson[4], Mathilde Lerche[4], Arnaud Comment, [25], Juerg Schwitter[1]
[1]Division of Cardiology and Cardiac MR Center, Lausanne University Hospital, Lausanne, Switzerland; [2]Center for Biomedical Imaging (CIBM) , Lausanne, Switzerland; [3]Department of Radiology, Lausanne University Hospital and University of Lausanne, Switzerland; [4]Albeda Research ApS, Copenhagen, Denmark; [5]Institute of Physics of Biological Systems, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland

11:57 **0092.** **Hyperpolarized ^{13}C-Alpha-Ketobutyrate, a Pyruvate Analog**
Cornelius von Morze[1], Robert A. Bok[1], Michael A. Ohliger[1], Daniel B. Vigneron[1], John Kurhanewicz[1]
[1]Department of Radiology & Biomedical Imaging, UCSF, San Francisco, CA, United States

12:09 **0093.** **Slice Blipped EPI Trajectory for Compressed Sensing Acquisition of 3D Time Resolved Imaging of Hyperpolarized [1-^{13}C]Pyruvate and [1-^{13}C]Lactate**
ISMRM MERIT AWARD magna cum laude
Benjamin J. Geraghty[1, 2], Justin Y.C. Lau[1, 2], Albert P. Chen[3], William Dominguez-Viqueira[1], Charles H. Cunningham[1, 2]
[1]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada; [2]Dept. of Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [3]GE Healthcare, Toronto, Ontario, Canada

12:21 **0094.** **Parallel Imaging Using a Concentric Rings Trajectory and Application to Hyperpolarized ^{13}C MR Spectroscopic Imaging**
ISMRM MERIT AWARD magna cum laude
Wenwen Jiang[1], Michael Lustig[2], Peder E.Z. Larson[3]
[1]Bioengineering, UC Berkeley/UCSF, Berkeley, CA - California, United States; [2]EECS, UC Berkeley, Berkeley, CA, United States; [3]Radiology and Biomedical Imaging, UCSF, San Francisco, CA - California, United States

12:33 **0095.** **Hyperpolarized Metabolic MR Imaging of Acute Myocardial Changes and Recovery Upon Ischemia-Reperfusion**
Patrick Wespi[1], Darach O h-Ici[1, 2], Julia Busch[1], Lukas Wissmann[1], Marcin Krajewski[1], Kilian Weiss[1], Andreas Sigfridsson[1], Daniel Messroghli[2], Sebastian Kozerke[1, 3]
[1]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [2]Department of Congenital Heart Disease and Pediatric Cardiology, German Heart Institute, Berlin, Germany; [3]Division of Imaging Sciences and Biomedical Engineering, King's College London, London, United Kingdom

12:45 **Adjournment & Meet the Teachers**

Gold Corporate Symposium
Philips Healthcare Gold Corporate Symposia

Plenary Hall FG 13:00-14:00 *(no CME credit)*

Traditional Poster Session: Young Investigator Awards

Exhibition Hall 14:15-16:15 *(no CME credit)*

Electronic Poster Session: Engineering
Exhibition Hall 14:15-16:15 *(no CME credit)*

Electronic Poster Session: UHF
Exhibition Hall 14:15-16:15 *(no CME credit)*

Electronic Poster Session: MR Safety
Exhibition Hall 14:15-16:15 *(no CME credit)*

Study Group Session
Electro-Magnetic Tissue Properties (SWI)
Reception Hall 104 BCD 14:15-16:15 *(no CME credit)*

Study Group Session
MR Spectroscopy
Constitution Hall 105 14:15-16:15 *(no CME credit)*

Power Pitch Session: Powerful Acquisition
Power Pitch Theatre, Exhibition Hall 14:15-15:15 *(no CME credit)*

Moderators: Michael S. Hansen, Ph.D. & Nicole E. Seiberlich, Ph.D.

0096. Field-Map-Free First-Order Dynamic Shimming
ISMRM MERIT AWARD summa cum laude
Yuhang Shi[1], Johanna Vannesjo[1], Karla Miller[1], Stuart Clare[1]
[1]Oxford Centre for Functional Magnetic Resonance Imaging of the Brain, Oxford, United Kingdom

0097. Spatial Motion Model Driven by the Noise Covariance Matrix of a Receive Array.
Anna Andreychenko[1], Baudouin Denis de Senneville[1, 2], Robin J.M. Navest[1], Jan J.W. Lagendijk[1], Cornelis A.T. van den Berg[1]
[1]Imaging Division, UMC Utrecht, Utrecht, Netherlands; [2]IMB, UMR 5251 CNRS/University of Bordeaux, Bordeaux, France

0098. Improved Reconstruction of Nonlinear Spatial Encoding Techniques with Explicit Intra-Voxel Dephasing
ISMRM MERIT AWARD summa cum laude
Kelvin Layton[1], Stefan Kroboth[1], Feng Jia[1], Sebastian Littin[1], Huijun Yu[1], Maxim Zaitsev[1]
[1]Medical Physics, University Medical Center Freiburg, Freiburg, Baden-Württemberg, Germany

0099. Magnification Imaging by Radiofrequency-Induced Nonlinear Phase Encoding
Jun Shen[1]
[1]NIMH, Bethesda, MD, United States

0100. Reliable Phase Gradient Mapping and Phase Unwrapping for Low-SNR Images: A Novel Procedure Based on K-Space Energy Peak Quantification
Pei-Hsin Wu[1], Hsiao-Wen Chung[1], Nan-Kuei Chen[2]
[1]Institute of Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan; [2]Brain Imaging and Analysis Center, Duke University Medical Center, Durham, NC, United States

0101. Orthogonally Combined Motion- And Diffusion-Sensitized Driven Equilibrium (OC-MDSDE) Preparation for Improved Vessel Signal Suppression in 3D TSE Imaging of Peripheral Nerves
ISMRM MERIT AWARD magna cum laude
Barbara Cervantes[1], Jinnan Wang[2], Jan S. Bauer[3], Hendrik Kooijman[4], Peter Börnert[5], Axel Haase[6], Ernst J. Rummeny[1], Klaus Wörtler[1], Dimitrios C. Karampinos[1]
[1]Diagnostic and Interventional Radiology, Technische Universität München, Munich, Germany; [2]Philips Research North America, Seattle, WA, United States; [3]Neuroradiology, Technische Universität München, Munich, Germany; [4]Philips Healthcare, Hamburg, Germany; [5]Philips Research Laboratory, Hamburg, Germany; [6]Zentralinstitut für Medizintechnik, Technische Universität München, Garching, Germany

0102. Off-Resonance Positive Contrast Flow Imaging Using Extraneous Paramagnetic Biomarker-Induced Spin Labeling

Jessica A.M. Bastiaansen[1, 2], Helene Feliciano[1, 2], Andrew Coristine[1, 2], Matthias Stuber[1, 2]
[1]Department of Radiology, University Hospital (CHUV) and University of Lausanne (UNIL), Lausanne, Switzerland; [2]Center for Biomedical Imaging (CIBM), Lausanne, Switzerland

0103. Hierarchically Semiseparable Generalized Encoding Matrix Compression for Fast Distortion Corrected Inverse Imaging

Stephen F. Cauley[1, 2], Kawin Setsompop[1, 2], Dan Ma[3], Yun Jiang[3], Elfar Adalsteinsson[4], Lawrence Wald[1, 2], Mark Griswold[3, 5]
[1]Athinoula A. Martinos Center for Biomedical Imaging, MGH/HST, Charlestown, MA, United States; [2]Dept. of Radiology, Harvard Medical School, Boston, MA, United States; [3]Dept. of Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [4]Harvard-MIT Div. of Health Sci. and Tech., Dept. of Electrical Engineering and Computer Science, Cambridge, MA, United States; [5]Dept. of Radiology, , Case Western Reserve University and University Hospitals of Cleveland, Cleveland, OH, United States

0104. Accelerated Multiparameter Mapping Using Low-Rank Tensors

Anthony G. Christodoulou[1], Zhi-Pei Liang[1]
[1]Beckman Institute and Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States

0105. Use of Pattern Recognition for Unaliasing Simultaneously Acquired Slices in Simultaneous MultiSlice Magnetic Resonance Fingerprinting

Yun Jiang[1], Dan Ma[1], Himanshu Bhat[2], Huihui Ye[3, 4], Stephen F. Cauley[3], Lawrence L. Wald[3, 5], Kawin Setsompop[3], Mark A. Griswold[1, 6]
[1]Department of Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Siemens Medical Solutions USA Inc., Charlestown, MA, United States; [3]Department of Radiology, Massachusetts General Hospital, Athinoula A. Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [4]Department of Biomedical Engineering, Zhejiang University, Hangzhou, Zhejiang, China; [5]Department of Electrical Engineering and Computer Science; Harvard-MIT Division of Health Sciences a, MIT, Cambridge, MA, United States; [6]Department of Radiology, Case Western Reserve University, Cleveland, OH, United States

0106. Non-CPMG Multi-Spectral PROPELLER for Diffusion-Weighted Imaging Near Metal Implants

Kevin M. Koch[1], Ajeet Gaddipati[2], Ali Ersoz[3], Robert Peters[2], Valentina Taviani[4], Brian A. Hargreaves[4], L. Tugan Muftuler[5]
[1]Biophysics and Radiology, Medical College of Wisconsin, Milwaukee, WI, United States; [2]GE Healthcare, Milwaukee, WI, United States; [3]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [4]Radiology, Stanford University, Stanford, CA, United States; [5]Neurosurgery and Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States

0107. Two-Dimensional Multiband Diffusion Weighted Imaging

Valentina Taviani[1], Suchandrima Banerjee[2], Bruce L. Daniel[1], Shreyas S. Vasanawala[1], Brian A. Hargreaves[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States

0108. *In Vivo* Simultaneous Acquisition of Diffusion Tensor Imaging (DTI) and MR Elastography (MRE) in Mouse Brain

Ziying Yin[1], Steven Kearney[2], Richard L. Magin[1], Dieter Klatt[1]
[1]1Richard and Loan Hill Department of Bioengineering, University of Illinois at Chicago, Chicago, IL, United States; [2]2Department of Mechanical and Industrial Engineering, University of Illinois at Chicago, Chicago, IL, United States

0109. Rapid and Accurate PTX B1 Mapping Using 3DREAM with Dual Interferometry

Daniel Brenner[1], Desmond H. Y. Tse[2, 3], Patrick J. Ledden[4], Claudine Neumann[1], Tony Stöcker[1, 5]
[1]German Center for Neurodegenerative Diseases (DZNE), Bonn, Germany; [2]Faculty of Psychology, Maastricht University, Maastricht, Netherlands; [3]Department of Radiology, Maastricht University Medical Centre, Maastricht, Netherlands; [4]Nova Medical, Inc., Wilmington, MA, United States; [5]Department of Physics and Astronomy, University of Bonn, Bonn, Germany

0110. **Accelerating Bloch-Siegert B1+ Mapping Using Modified Iterative SENSE and ESPIRiT (iSENSE)**
Mohammad Mehdi Khalighi[1], Peng Lai[1]
[1]Applied Science Lab, GE Healthcare, Menlo Park, CA, United States

Cartilage Imaging: Technical Developments

Room 701 A 14:15-16:15 *Moderators:* Xiaojuan Li, Ph.D. & Miika T. Nieminen, Ph.D.

14:15 **0111.** **Response of Quantitative MRI to Artificial Collagen Cross-Linking of Articular Cartilage**
ISMRM MERIT AWARD summa cum laude
Jari Rautiainen[1, 2], Mikko J. Nissi[1, 2], Elli-Noora Salo[3], Harri Kokkonen[2, 4], Shalom Michaeli[5], Silvi Mangia[5], Olli Gröhn[6], Juha Töyräs[2, 4], Miika T. Nieminen[1, 3]
[1]Medical Research Center Oulu and Department of Diagnostic Radiology, University of Oulu, Oulu, Finland; [2]Department of Applied Physics, University of Eastern Finland, Kuopio, Finland; [3]Department of Diagnostic Radiology, Oulu University Hospital, Oulu, Finland; [4]Diagnostic Imaging Center, Kuopio University Hospital, Kuopio, Finland; [5]Center for Magnetic Resonance Research, University of Minnesota, MN, United States; [6]Department of Neurobiology, A.I.Virtanen Institute for Molecular Sciences, University of Eastern Finland, Kuopio, Finland

14:27 **0112.** **Validation of Diffusion Tensor Imaging of Articular Cartialge in an Animal Model of Posttraumatic Osteoarthritis**
Jose G. Raya[1], Ignacio Rossi[1], Oran Kennedy[1], Natalie Danna[1], Bryan Beutel[1], You Jin Lee[1], Thorsten Kirsch[1]
[1]NYU Langone Medical Center, New York, NY, United States

14:39 **0113.** **Rapid T1 and T2 Mapping of the Hip Articular Cartilage with Radial MR Fingerprinting**
ISMRM MERIT AWARD summa cum laude
Martijn A. Cloos[1], Leeor Alon[1], Christian Geppert[2], Daniel K. Sodickson[1], Riccardo Lattanzi[1]
[1]Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States; [2]Siemens AG Healthcare, Erlangen, Germany

14:51 **0114.** **Correlation Between Cartilaginous Endplate Defects and Intervertebral Disc Degeneration: An *In Vivo* MRI Study at 3.0 Tesla**
Dong Xing[1], Jiao Wang[1], Yunfei Zha[1], Lei Hu[1], Hui Lin[2], Yuan Lin[1]
[1]Department of Radiology, Renmin Hospital of Wuhan University, Wuhan, Hubei, China; [2]GE Healthcare China, Shanghai, China

15:03 **0115.** **Metal Artifact Reduction Using a 3D UTE-MSI Sequence with Time-Frame Regularized Compressed Sensing Reconstruction**
Yifei Lou[1], Qun He[2], Xun Jia[3], Eric Chang[2], Christine B. Chung[2], Jiang Du[2]
[1]Department of Mathematical Sciences, University of Texas Dallas, Dallas, TX, United States; [2]Radiology, University of California, San Diego, CA, United States; [3]Department of Radiation Oncology, University of Texas Southwestern Medical Center, Dallas, TX, United States

15:15 **0116.** **Effects of Bath Solutions on the Quantitative Determination of Relaxation Times in Compressed Articular Cartilage by Microscopic MRI**
Nian Wang[1], Yang Xia[1]
[1]Department of Physics and Center for Biomedical Research, Oakland University, Rochester, MI, United States

15:27 **0117.** **Determination of Correlation Time in Articular Cartilage by T1rho Relaxation Dispersion**
Matti Hanni[1, 2], Mikko J. Nissi[3, 4], Jari Rautiainen, [34], Simo Saarakkala, [25], Jutta Ellermann[6], Miika T. Nieminen, [27]
[1]Department of Radiology, University of Oulu, Oulu, Finland; [2]Medical Research Center Oulu, Oulu University Hospital and University of Oulu, Oulu, Finland; [3]Department of Radiology, and Medical Research Center Oulu, University of Oulu and Oulu University Hospital, Oulu, Finland; [4]Department of Applied Physics, University of Eastern Finland, Kuopio, Finland; [5] Department of Diagnostic Radiology, Oulu University Hospital, Department of Medical Technology, University of Oulu, Oulu, Finland; [6]Center for Magnetic Resonance Research, Department of Radiology, University of Minnesota, Minneapolis, MN, United States; [7]Department of Diagnostic Radiology, University of Oulu and Oulu University Hospital, Oulu, Finland

15:39 **0118.** **Magnetic Resonance Imaging as Biomarker of Adverse Local Tissue Reactions in Total Hip Arthroplasty**
ISMRM MERIT AWARD magna cum laude
Matthew F. Koff[1], Parina H. Shah[1], Alissa Burge[1], Mauro Miranda[1], Christina Esposito[2], Elexis Baral[2], Thomas W. Bauer[3], Allina Nocon[4], Kara Fields[4], Stephen Lyman[4], HSS Adult Reconstruction & Joint Replacement Division[5], Douglas Padgett[5], Timothy Wright[2], Hollis G. Potter[1]

[1]Department of Radiology and Imaging - MRI, Hospital for Special Surgery, New York, United States; [2]Department of Biomechanics, Hospital for Special Surgery, New York, United States; [3]Department of Anatomic Pathology, Cleveland Clinic, Cleveland, OH, United States; [4]Healthcare Research Institute, Hospital for Special Surgery, New York, United States; [5]Adult Reconstruction & Joint Replacement Division, Hospital for Special Surgery, New York, United States

15:51 0119. Quantitative Susceptibility Mapping (QSM) to Correlate with Histology and Quantitative Parametric Mapping in Surgically Induced Juvenile Osteochondritis Dissecans

Luning Wang[1], Mikko J. Nissi, [12], Ferenc Toth, Michael Garwood[1], Cathy Carlson, Jutta Ellermann[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Twin Cities, Minneapolis, MN, United States; [2]Medical Research Center Oulu, Oulu University Hospital and University of Oulu, Finland

16:03 0120. Cartilage MR T1ρ and T2 Quantifications: Longitudinal Reproducibility and Variations Using Different Coils and Scanners at Single and Multi-Sites

Xiaojuan Li[1], Valentina Pedoia[1], Deepak Kumar[1], Drew Lansdown[1], Cory Wyatt[1], Julien Rivorie[1], Narihiro Okazaki[1], Dragana Savic[1], Matthew F. Koff[2], Joel Felmlee[3], Williams Steven[3], Sharmila Majumdar[1]
[1]University of California, San Francisco, CA, United States; [2]Hospital for Special Surgery, New York, NY, United States; [3]Mayo Clinic, Rochester, MN, United States

Relaxometry Applications Throughout the Body

Room 701 B 14:15-16:15 *Moderators:* Oliver Bieri, Ph.D. & Rexford D. Newbould, Ph.D.

14:15 0121. Regional Brain T1 and T2 Relaxometry in Healthy Volunteers Using Magnetic Resonance Fingerprinting

ISMRM MERIT AWARD summa cum laude

Chaitra Badve[1], Alice Yu[2], Matthew Rogers[2], Dan Ma[2], Jeffrey Sunshine[1], Vikas Gulani[1], Mark Griswold[1]
[1]Radiology, University Hospitals Case Medical Center, Cleveland, OH, United States; [2]Case Western Reserve University, OH, United States

14:27 0122. *In Vivo* Assessment of Age-Related White Matter Differences Using T_2* Relaxation

Erika P. Raven[1, 2], Peter van Gelderen[2], Jacco A. de Zwart[2], Diana H. Fishbein[3], John VanMeter[1, 4], Jeff H. Duyn[2]
[1]Georgetown University, Washington, DC, United States; [2]Advanced MRI, LFMI, NINDS, NIH, Bethesda, MD, United States; [3]University of Maryland School of Medicine, Baltimore, MD, United States; [4]Georgetown Center for Functional and Molecular Imaging, Washington, DC, United States

14:39 0123. Extensive and Intensive Measures of Corpus Callosum Health in Multiple Sclerosis

Manoj K. Sammi[1], Yosef A. Berlow[1], John G. Grinstead[2], Dennis M. Bourdette[3], William D. Rooney[1]
[1]Advanced Imaging Research Center, Oregon Health & Science University, Portland, OR, United States; [2]Siemens Healthcare, OR, United States; [3]Department of Neurology, Oregon Health & Science University, Portland, OR, United States

14:51 0124. Quantitative 3D Whole Liver T1rho Mapping at 3.0T

Weibo Chen[1, 2], Xin Chen[3], Guangbin Wang[3], Queenie Chan[4], He Wang[5], Jianqi Li[6], Xuzhou Li[7], Shanshan Wang[3], Bin Yao[3], Dongrong Xu[7, 8]
[1]Shanghai Key Laboratory of Magnetic Resonance and Department of Physics,East China Normal University, Shanghai, China; [2]Philips Healthcare, shanghai, China; [3]Shandong Medical Imaging Research Institute, Shandong University, Jinan, Shandong, China; [4]Philips Healthcare, Hongkong, China; [5]Philips Research China, shanghai, China; [6]Shanghai Key Laboratory of Magnetic Resonance and Department of Physics,East China Normal University, Shanghai, China; [7]Key laboratory of Brain Functional Genomics (MOE & STCSM), Institute of Cognitive Neuroscience, East China Normal University, shanghai, China; [8]Epidemiology Division & MRI Unit,Columbia University Department of Psychiatry, NY, United States

15:03 0125. Leveraging Transverse Relaxation Processes and Dixon Oscillations to Achieve High-Quality Segmentation of Bone Marrow

Mukund Balasubramanian[1, 2], Delma Y. Jarrett[1, 2], Robert V. Mulkern[1, 2]
[1]Department of Radiology, Boston Children's Hospital, Boston, MA, United States; [2]Harvard Medical School, Boston, MA, United States

15:15 0126. Significant Alterations on T2-Spectra Observed in the Calf of Myopathic Patients

ISMRM MERIT AWARD magna cum laude

Ericky Caldas de Almeida Araujo[1], Pierre G. Carlier[1, 2]
[1]NMR Laboratory, Institute of Myology, Paris, Île-de-France, France; [2]NMR Laboratory, CEA/I2BM/MIRCen, Paris, Île-de-France, France

15:27 0127. Endogenous Assessment of Diffuse Myocardial Fibrosis with T1ρ-Mapping in Patients with Dilated Cardiomyopathy

Joep van Oorschot[1], Johannes Gho[1], Sanne de Jong[1], Aryan Vink[1], Fredy Visser[2], Jacques de Bakker[3], Steven Chamuleau[1], Peter Luijten[1], Tim Leiner[1], Jaco Zwanenburg[1]
[1]University Medical Center Utrecht, Utrecht, Netherlands; [2]Philips Healthcare, Best, Noord-Brabant, Netherlands; [3]AMC, Amsterdam, Netherlands

15:39 0128. What Are the Blood T1 and T2 Values in Neonates?

Peiying Liu[1], Lina Chalak[2], Lisa Krishnamurthy[1], Imran Mir[2], Shin-Lei Peng[1], Hao Huang[1], Hanzhang Lu
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Department of Pediatrics, University of Texas Southwestern Medical Center, TX, United States

15:51 0129. Combined T_1 and T_2 Measurement for Non-Invasive Evaluation of Blood Oxygen Saturation and Hematocrit

ISMRM MERIT AWARD summa cum laude

Sharon Portnoy[1], Mike Seed[2], Julia Zhu[2], John G. Sled, [13], Christopher K. Macgowan, [14]
[1]Department of Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [2]Diagnostic Imaging, The Hospital for Sick Children, University of Toronto, Toronto, Ontario, Canada; [3]Mouse Imaging Centre, The Hospital for Sick Children, Toronto, Ontario, Canada; [4]Diagnostic Imaging, The Hospital for Sick Children, Toronto, Ontario, Canada

16:03 0130. Delta Relaxation Enhanced Magnetic Resonance (DreMR) Imaging of a Healthy Mouse for Determination of Spin-Lattice Relaxation Rates and R_1 Dispersion at 1.5 T

ISMRM MERIT AWARD magna cum laude

Yonathan T. Araya[1], Francisco M. Martinez-Santiesteban[1], Chad T. Harris[2], William B. Handler[3], Blaine A. Chronik[3, 4], Timothy J. Scholl[1, 4]
[1]Medical Biophysics, Western University, London, ON, Canada; [2]Synaptive Medical, Toronto, ON, Canada; [3]Physics and Astronomy, Western University, London, ON, Canada; [4]Robarts Research Institute, Western University, London, ON, Canada

fMRI Applications, Including Optogenetics

Room 714 A/B 14:15-16:15 *Moderators:* Victoria L. Morgan, Ph.D. & T.B.A.

14:15 0131. Hunting the Source of a Unique Negative fMRI Signal in the Striatum Using Optogenetics

ISMRM MERIT AWARD summa cum laude

Daniel Albaugh[1], Garret Stuber[2], Yen-Yu Ian Shih[3]
[1]Curriculum in Neurobiology, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States; [2]Department of Psychiatry, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States; [3]BRIC, Department of Neurology, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States

14:27 0132. Spatial Correlations of Neurovascular Coupling Studied Using Single Pulse Opto-fMRI

Jack A. Wells[1], Isabel N. Christie[1], Sergey Kasparov[2], Alexander Gourine[3], Mark F. Lythgoe[1]
[1]Centre for Advanced Biomedical Imaging, University College London, London, United Kingdom; [2]Department of Physiology and Pharmacology, University of Bristol, Bristol, United Kingdom; [3]Neuroscience, Physiology & Pharmacology, University College London, London, United Kingdom

14:39 0133. Intrahippocampal and Hippocampal-Cortical Interactions Driven by Frequency Specific Optogenetic Stimulation

ISMRM MERIT AWARD summa cum laude

Russell W. Chan[1, 2], Alex T.L. Leong[1, 2], Joe S. Cheng[1, 2], Partick P. Gao[1, 2], Shu-Juan J. Fan[1, 2], Kevin K. Tsia[2], Ed X. Wu[1, 2]
[1]Laboratory of Biomedical Imaging and Signal Processing, The University of Hong Kong, Hong Kong, China; [2]Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, China

14:51 0134. Uncovering the Functional Network of Medial Prefrontal Cortex in Awake Rodents Using Optogenetic fMRI

ISMRM MERIT AWARD magna cum laude

Zhifeng Liang[1, 2], Glenn D.R. Waston, [23], Kevin D. Alloway, [23], Gangchea Lee[4], Thomas Neuberger[4], Nanyin Zhang, [24]
[1]Dept. of Biomedical Engineering, Pennsylvania State University , University Park, PA, United States; [2]Center for Neural Engineering, The Huck Institutes of Life Sciences, Pennsylvania State University, University Park, PA, United States; [3]Neural and Behavioral Sciences, College of Medicine, Pennsylvania State University, Hershey, PA, United States; [4]Dept. of Biomedical Engineering, Pennsylvania State University, University Park, PA, United States

15:03 **0135. Frequency Specific Optogenetic Recruitment of Evoked Responses in the Somatosensory Thalamocortical Circuit**

ISMRM MERIT AWARD summa cum laude

Alex T.L. Leong[1, 2], Russell W. Chan[1, 2], Patrick P. Gao[1, 2], Joe S. Cheng[1, 2], Jevin W. Zhang[1, 2], Shu-Juan J. Fan[1, 2], Kevin K. Tsia[2], Kenneth K.Y. Wong[2], Ed X. Wu[1, 2]
[1]Laboratory of Biomedical Imaging and Signal Processing, The University of Hong Kong, Hong Kong, SAR, China; [2]Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, SAR, China

15:15 **0136. Characterizing Cortical Responses to the Stimulation of Single Mechanoreceptive Afferents Using fMRI at 7 T**

Rosa Maria Sanchez Panchuelo[1], Rochelle Ackerley[2], Paul Glover[1], Richard Bowtell[1], Francis McGlone[3], Johan Wessberg[2], Susan Francis[1]
[1]University of Nottingham, Nottingham, United Kingdom; [2]University of Gothenburg, Gothenburg, Sweden; [3]Liverpool Johns Moore University, Liverpool, United Kingdom

15:27 **0137. Odor-Evoked fMRI Maps Are Coupled to Calcium-Sensitive Dye Imaging Patterns of Input Activity in the Olfactory Bulb**

Basavaraju G. Sanganahalli[1], Michelle R. Rebello[2], Peter Herman[1], Gordon M. Shepherd[3], Justus V. Verhagen[2, 4], Fahmeed Hyder[1, 5]
[1]Diagnostic Radiology, Yale University, New Haven, CT, United States; [2]The John B. Pierce Laboratory, Yale University, New Haven, CT, United States; [3]Neurobiology, Yale University, New Haven, CT, United States; [4]Neurobiology, Yale University, CT, United States; [5]Biomedical Engineering, Yale University, New Haven, CT, United States

15:39 **0138. MEG and fMRI Localization of Infrasonic and Low-Frequency Sound**

Markus Weichenberger[1], Rüdiger Brühl[2], Martin Bauer[2], Robert Kühler[2], Albrecht Ihlenfeld[2], Johannes Hensel[2], Christian Koch[2], Bernd Ittermann[2], Simone Kühn[1], Tilmann Sander[2]
[1]Max Planck Institute for Human Development, Berlin, Germany; [2]Physikalisch-Technische Bundesanstalt (PTB), Braunschweig und Berlin, Germany

15:51 **0139. Encoding Self-Motion and External Motion During Pursuit Eye Movement, a Study at 9.4T**

F. Molaei-Vaneghi[1, 2], Jonas Bause[1], Philipp Ehses[1], Klaus Scheffler[1], Andreas Bartels[2]
[1]High Field Magnetic Resonance, Max-Planck Institute for Biological Cybernetics, Tübingen, Baden-Württemberg, Germany; [2]Center for Integrative Neuroscience (CIN), Vision and Cognition Lab, Tübingen, Baden-Württemberg, Germany

16:03 **0140. Endogenous GABA Concentration and Haemodynamic Responses to Graded Visual Contrast**

ISMRM MERIT AWARD magna cum laude

Mark Mikkelsen[1], C. John Evans[1], Alan J. Stone[1, 2], Esther A. H. Warnert[1], Krish D. Singh[1]
[1]CUBRIC, School of Psychology, Cardiff University, Cardiff, United Kingdom; [2]FMRIB, Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, United Kingdom

Hepatobiliary 1

Room 716 A/B 14:15-16:15 *Moderators:* Mustafa Shadi R. Bashir, M.D. & T.B.A.

14:15 **0141. Correlating Post-Operative Whole Mount Immunohistochemistry to Functional MRI Parameters in Pancreatic Cancer**

ISMRM MERIT AWARD summa cum laude

Remy Klaassen[1, 2], Anne Steins[1, 2], Oliver J. Gurney-Champion[3], Maarten F. Bijlsma[2], Hessel Wijkstra[4], Geertjan van Tienhoven[5], Marc G.H. Besselink[6], Johanna W. Wilmink[1], Mark J. van de Vijver[7], Jaap Stoker[3], Aart J. Nederveen[3], Hanneke W.M. van Laarhoven[1]
[1]Department of Medical Oncology, Academic Medical Center, Amsterdam, Netherlands; [2]Laboratory for Experimental Oncology and Radiobiology, Academic Medical Center, Amsterdam, Netherlands; [3]Department of Radiology, Academic Medical Center, Amsterdam, Netherlands; [4]Department of Urology, Academic Medical Center, Amsterdam, Netherlands; [5]Department of Radiation Oncology, Academic Medical Center, Amsterdam, Netherlands; [6]Department of Surgery, Academic Medical Center, Amsterdam, Netherlands; [7]Department of Pathology, Academic Medical Center, Amsterdam, Netherlands

14:27 **0142. Feasibility Study on Reduced FOV Diffusion Imaging of the Pancreas Using Navigator Triggering Technique**

Lorenzo Mannelli[1], Maggie M. Fung[2], Gregory Nyman[1], Sabrina Lopez[1], Richard Kinh Gian Do[1]
[1]Radiology, Memorial Sloan Kettering Cancer Center, New York, NY, United States; [2]Global MR Applications and Workflow, GE Healthcare, New York, NY, United States

14:39 0143. Free-Breathing Fat-Water-Separated Liver MRI Using a Multi-Echo 3D Stack-Of-Stars Technique

ISMRM MERIT AWARD magna cum laude

Tess Armstrong[1, 2], Isabel Dregely[1], Fei Han[3], Ziwu Zhou[1], Kyung Sung[1, 2], Peng Hu[1, 2], Holden Wu[1, 2]
[1]Radiological Sciences, University of California Los Angeles, Los Angeles, CA, United States; [2]Biomedical Physics, University of California Los Angeles, Los Angeles, CA, United States; [3]Radiological Sciences, University of California Los Angeles , Los Angeles, CA, United States

14:51 0144. Accuracy of Liver Fat Quantification by CT, MRI and US: a Prospective Comparison with Magnetic Resonance Spectroscopy (MRS)

Harald Kramer[1, 2], Mark A. Kliewer[2], Perry J. Pickardt[2], Diego Hernando[2], Guang-Hong Chen[2], Scott B. Reeder[2]
[1]Department of Clinical Radiology, University of Munich, Munich, Bavaria, Germany; [2]Department of Radiology, University of Wisconsin - Madison, Madison, WI, United States

15:03 0145. MRS and MRI-Determined Hepatic Proton Density Fat Fraction: Comparison of ROI Sampling Methods in Patients with Type 2 Diabetes

Kim Nhien Vu[1], Guillaume Gilbert[1, 2], Marianne Chalut[1], Miguel Chagnon[3], Gabriel Chartrand[4], Jacques de Guise[4], An Tang[1]
[1]Radiology, University of Montreal, Montreal, Qc, Canada; [2]Philips Healthcare Canada, Montreal, Qc, Canada; [3]Mathematics and Statistics, University of Montreal, Montreal, Qc, Canada; [4]Imaging and Orthopaedics Research Laboratory (LIO), École de technologie supérieure, Montreal, Qc, Canada

15:15 0146. MR Tagging-Based Liver Elasticity Study with the Use of Full Strain Tensor Analysis for Better Understanding of Mechanical Alterations in NAFLD

ISMRM MERIT AWARD magna cum laude

Anna Orzylowska[1], Krzysztof Jasinski[1], Pawel T. Jochym[2], Edyta Maslak[3], Tomasz Skorka[1]
[1]Department of Magnetic Resonance Imaging, Institute of Nuclear Physics Polish Academy of Sciences, Krakow, Poland; [2]Department of Materials Research by Computers, Institute of Nuclear Physics Polish Academy of Sciences, Krakow, Poland; [3]Department of Endothelium Experimental Pharmacology, Jagiellonian Center for Experimental Therapeutics (JCET), Krakow, Poland

15:27 0147. Interplatform Variability of Liver and Spleen MR Elastography

Temel Kaya Yasar[1], Octavia Bane[1], Cecilia Besa[1], Stephan Kannengiesser[2], Bachir Taouli[1]
[1]Icahn School of Medicine at Mount Sinai, New York, NY, United States; [2]Siemens Healthcare, Germany

15:39 0148. *In Vivo* Multifrequency MR Elastography for the Assessment of Portal Hypertension Before and After Transjugular Intrahepatic Portosystemic Shunt (TIPS) Implantation

ISMRM MERIT AWARD magna cum laude

Jing Guo[1], Christian Althoff[1], Carsten Büning[2], Eckart Schott[3], Thomas Kröncke[4], Jürgen Braun[5], Ingolf Sack[1]
[1]Radiology, Charité - Universitätsmedizin Berlin, Berlin, Germany; [2]Krankenhaus Waldfriede,Akademisches Lehrkrankenhaus der Charité, Berlin, Germany; [3]Department of Hepatology and Gastroenterology, Charité - Universitätsmedizin Berlin, Berlin, Germany; [4]Clinic for Diagnostic Radiology and Neuroradiology, Klinikum Augsburg, Bavaria, Germany; [5]Department of Medical Informatics, Charité - Universitätsmedizin Berlin, Berlin, Germany

15:51 0149. The Usefulness of Magnetic Resonance Elastography in Predicting Progression of Cirrhosis from Child-Pugh Class a to B

ISMRM MERIT AWARD magna cum laude

Tomohiro Takamura[1], Utaroh Motosugi[1], Shintaro Ichikawa[1], Katsuhiro Sano[1], Hiroyuki Morisaka[1], Tomoaki Ichikawa[1], Nobuyuki Enomoto[2], Hiroshi Onishi[1]
[1]Department of Radiology, University of Yamanashi, Kofu, Yamanashi, Japan; [2]First Department of Internal Medicine, University of Yamanashi, Yamanashi, Japan

16:03 0150. 4D-Flow MRI for Risk Stratification of Gastroesophageal Varices in Cirrhotic Patients

Utaroh Motosugi[1, 2], Peter Bannas[1, 3], Alejandro Roldan-Alzate[1], Sean G. Kelly[4], Adnan Said[4], Oliver Wieben[5], Scott B. Reeder[1, 5]
[1]Radiology, University of Wisconsin, Madison, WI, United States; [2]Radiology, University of Yamanashi, Chuo-shi, Yamanashi, Japan; [3]Radiology, University Hospital Hamburg-Eppendorf, Humburg, Germany; [4]Gastroenterology and Hepatology, University of Wisconsin, Madison, WI, United States; [5]Medical Physics, University of Wisconsin, Madison, WI, United States

Diffusion Phantoms & Validation

Constitution Hall 107 14:15-16:15 *Moderators:* Els Fieremans, Ph.D. & Markus Nilsson, Ph.D.

14:15 0151. Validation of Orientation Distribution Functions in 3D Using Confocal Microscopy

ISMRM MERIT AWARD summa cum laude

Kurt Schilling[1], Yurui Gao[1], Vaibhav Janve[1], Iwona Stepniewska[2], Prasanna Parvathaneni[3], Hua Li[1], Bennett A. Landman[4], Adam W. Anderson[1]
[1]VUIIS, Vanderbilt University, Nashville, TN, United States; [2]Psychology, Vanderbilt University, Nasvhille, United States; [3]Electrical Engineering, Vanderbilt University, TN, United States; [4]Electrical Engineering, Vanderbilt University, Nashville, TN, United States

14:27 0152. Diffusivity in Crossing and Diverging Fibers: A Multi-Site Phantom Experiment

Matthan W.A. Caan[1], Ezequiel Farrher[2], James Cole[3], Dirk H.J. Poot[4, 5], Farida Grinberg[2, 6], N. Jon Shah[2, 6]
[1]Department of Radiology, Academic Medical Center, Amsterdam, Netherlands; [2]Institute of Neuroscience and Medicine-4, Forschungszentrum Juelich, Juelich, Germany; [3]Computational, Cognitive, and Clinical Neuroimaging Laboratory, Division of Brain Sciences, Imperial College London, London, United Kingdom; [4]Quantitative Imaging Group, Department of Imaging Physics, Delft University of Technology, Delft, Netherlands; [5]Biomedical Imaging Group Rotterdam, Erasmus MC, Rotterdam, Netherlands; [6]Department of Neurology, Faculty of Medicine, JARA, RWTH Aachen University, Aachen, Germany

14:39 0153. Characterization of the Wallerian Degeneration Process in the Rat Spinal Cord with DIAMOND and NODDI: Comparison with Histological Obervations.

ISMRM MERIT AWARD summa cum laude

Damien Jacobs[1], Benoit Scherrer[2], Aleksandar Jankovski[3], Anne des Rieux[4], Maxime Taquet[1], Bernard Gallez[4], Simon K. Warfield[2], Benoit Macq[1]
[1]ICTEAM, Universite catholique de Louvain, Louvain-La-Neuve, Belgium; [2]Computational Radiology Laboratory, Boston Childrens Hospital, MA, United States; [3]Hopital universitaire Mont-Godinne, Universite catholique de Louvain, Godinne, Belgium; [4]LDRI, Universite catholique de Louvain, Brussels, Belgium

14:51 0154. Quantitative Histological Correlates of NODDI Orientation Dispersion Estimates in the Human Spinal Cord

ISMRM MERIT AWARD magna cum laude

Francesco Grussu[1], Torben Schneider[1], Richard L. Yates[2], Mohamed Tachrount[3], Hui Zhang[4], Daniel C. Alexander[4], Gabriele C. DeLuca[2], Claudia A. M. Wheeler-Kingshott[1]
[1]NMR Research Unit, Department of Neuroinflammation, Queen Square MS Centre, UCL Institute of Neurology, London, England, United Kingdom; [2]Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, England, United Kingdom; [3]Department of Brain Repair and Rehabilitation, UCL Institute of Neurology, London, England, United Kingdom; [4]Department of Computer Science and Centre for Medical Image Computing, University College London, London, England, United Kingdom

15:03 0155. Validation of Double Diffusion Schemes of Microscopic Fractional Anisotropy

Henrik Lundell[1], Tim B. Dyrby[1], Penny L. Hubbard Cristinacce[2, 3], Feng-Lei Zhou[2, 4], Geoffrey J.M. Parker[2, 3], Sune N. Jespersen[5, 6]
[1]Centre for Functional and Diagnostic Imaging and Research, Copenhagen University Hospital, Hvidovre, Denmark; [2]Centre for Imaging Sciences, The University of Manchester, United Kingdom; [3]Biomedical Imaging Institute, The University of Manchester, United Kingdom; [4]The School of Materials, The University of Manchester, United Kingdom; [5]CFIN/MINDLab, Aarhus University, Denmark; [6]Department of Physics and Astronomy, Aarhus University, Denmark

15:15 0156. Estimating Microstructural Properties of a Biomimetic Tumour Tissue Phantom Using Diffusion-Weighted MRI

Damien J. McHugh[1, 2], Fenglei Zhou[1, 3], Penny L. Hubbard Cristinacce[1, 2], Josephine H. Naish[1, 2], Geoff J M Parker[1, 2]
[1]Centre for Imaging Sciences, The University of Manchester, Manchester, United Kingdom; [2]Biomedical Imaging Institute, The University of Manchester, Manchester, United Kingdom; [3]Materials Science Centre, The University of Manchester, Manchester, United Kingdom

15:27 0157. Reduction of Susceptibility-Induced Field Gradients in Anisotropic Diffusion Fibre Phantoms Using Susceptibility Matching

Johannes Lindemeyer[1], Ezequiel Farrher[1], Farida Grinberg[1, 2], Ana-Maria Oros-Peusquens[1], N. Jon Shah[1, 2]
[1]Institute of Neuroscience and Medicine 4, INM-4, Medical Imaging Physics, Forschungszentrum Jülich GmbH, Jülich, Germany; [2]Faculty of Medicine, Department of Neurology, RWTH Aachen University, JARA, Aachen, Germany

15:39 0158. A Processing Pipeline and Anisotropic Diffusion Phantom to Calibrate DTI Experiments

Alexandru V. Avram[1], Michal E. Komlosh[1, 2], Alan S. Barnett[1, 2], Elizabeth Hutchinson[1, 2], Dan Benjamini[1, 3], Peter J. Basser[1]
[1]Section on Tissue Biophysics and Biomimetics, NICHD, National Institutes of Health, Bethesda, MD, United States; [2]The Henry Jackson Foundation, Bethesda, MD, United States; [3]Department of Biomedical Engineering, Tel-Aviv University, Tel-Aviv, Israel

15:51 0159. A Novel Phantom for Quantitative Diffusion MRI Based on Acetone and Deuterium Oxide

Xiaoke Wang[1], Scott B. Reeder[2, 3], Diego Hernando[2]
[1]Biomedical Engineering, University of Wisconsin, Madison, WI, United States; [2]Radiology, University of Wisconsin, Madison, WI, United States; [3]Medical Physics, University of Wisconsin, Madison, WI, United States

16:03 0160. Hyperpolarized Gas MR Diffusion Simulations and Experiments in Realistic 3D Models and Phantoms of Human Acinar Airways

Juan Parra-Robles[1], Bart Veeckmans[2], Madhwesha Rao[1], James C. Hogg[3], Jim M. Wild[1]
[1]University of Sheffield, Sheffield, South Yorkshire, United Kingdom; [2]Materialise, Leuven, Belgium; [3]University of British Columbia, Vancouver, British Columbia, Canada

Neurovascular & Stroke 1

John Bassett Theatre 102 14:15-16:15 *Moderators:* Tilak Das, M.D., Ph.D. & T.B.A.

14:15 0161. Changes in White-Matter Integrity and Evoked fMRI Responses in Chronic Hypertension

Yunxia Li[1, 2], Qian Wang[1], Qiang Shen[1], Shiliang Huang[1], Lora Talley Watts[1], Timothy Q. Duong[1]
[1]Research Imaging Institute, The University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Department of Neurology, Tongji Hospital, Tongji University, Shanghai, China

14:27 0162. Multi-Modality 4D Stroke Template for the Characterization of Arterial Ischemic Stroke Evolution Over Time

ISMRM MERIT AWARD magna cum laude

Samantha J. Ma[1], David S. Liebeskind[1], Songlin Yu[1], Holly Wilhalme[2], David Elashoff[2], Xin J. Qiao[3], Nerses Sanossian[1], Sidney Starkman[1, 4], Latisha K. Ali[1], Fabien Scalzo[1], Bryan Yoo[3], Jeffrey L. Saver[1], Noriko Salamon[3], Danny JJ Wang[1]
[1]Neurology, UCLA, Los Angeles, CA, United States; [2]Medicine Statistics Core, UCLA, Los Angeles, CA, United States; [3]Radiology, UCLA, Los Angeles, CA, United States; [4]Emergency Medicine, UCLA, Los Angeles, CA, United States

14:39 0163. Variations in Cerebral Haemodynamics and Capillary Transit Time Heterogeneity in Patients Before and After Carotid Endarterectomy

Amit Mehndiratta[1, 2], Chang Sub Park[2], David E. Crane[3], Ediri Sideso[4], James Kennedy[5], Bradley J. MacIntosh[3], Stephen J. Payne[2], Michael A. Chappell[2]
[1]CBME, Indian Institute of Technology Delhi, New Delhi, Delhi, India; [2]IBME, University of Oxford, Oxford, Oxfordshire, United Kingdom; [3]Medical Biophysics, Sunnybrook Research Institute, Toronto, ON, Canada; [4]Nuffield Department of Surgery, University of Oxford, Oxford, Oxfordshire, United Kingdom; [5]Acute Vascular Imaging Centre, Radcliffe Department of Medicine, University of Oxford, Oxford, Oxfordshire, United Kingdom

14:51 0164. A Multi-Parametric Investigation of Vascular Alterations in Elderly with Hypertension

ISMRM MERIT AWARD magna cum laude

Min Sheng[1], Kevin S. King[2], Adam Sheffield[3], Harshan Ravi[1], Shin-Lei Peng[1], Peiying Liu[1], Zohre German[4], Hanzhang Lu[1]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Department of Radiology, University of Texas Southwestern Medical Center, Dallas, TX, United States; [3]Medical program, University of Texas Southwestern Medical Center, Dallas, TX, United States; [4]Department of Neurology, University of Texas Southwestern Medical Center, Dallas, TX, United States

15:03 0165. A Non-Invasive Method for Measuring Perfusion in Moyamoya Disease with Functional Magnetic Resonance Imaging

Tianyi Qian[1], Zhiwei Zuo[2], Yituo Wang[2], Yuanyuan Kang[3], Penggang Qiao[2], Gongjie Li[2]
[1]MR Collaborations NE Asia, Siemens Healthcare, Beijing, China; [2]Radiology, Affiliated hospital of Academy of Military Medical Sciences, Beijing, China; [3]Siemens Shenzhen Magnetic Resonance Ltd., Shenzhen, China

15:15 0166. Postischemic Hyperperfusion on Arterial Spin Labeled Perfusion MRI Is Linked to Hemorrhagic Transformation in Stroke

ISMRM MERIT AWARD magna cum laude

Songlin Yu[1], David S. Liebeskind[1], Sumit Dua[2], Holly Wilhalme[3], David Elashoff[3], Xin J. Qiao[2], Jeffry R. Alger[1, 2], Nerses Sanossian[1], Sidney Starkman[1, 4], Latisha K. Ali[1], Fabien Scalzo[1], Xin Lou[1, 5], Jeffrey L. Saver[1], Noriko Salamon[2], Danny J.J. Wang[1, 2]
[1]Neurology, UCLA, Los Angeles, CA, United States; [2]Radiology, UCLA, Los Angeles, CA, United States; [3]Medicine Statistics Core, UCLA, Los Angeles, CA, United States; [4]Emergency Medicine, UCLA, Los Angeles, CA, United States; [5]Radiology, Chinese People's Liberation Army (PLA) General Hospital, Beijing, China

15:27 **0167.** **Hemodynamics of the Cerebral Border Zone Regions in Healthy, Young Volunteers**
ISMRM MERIT AWARD magna cum laude
Sophie Schmid[1], Wouter Teeuwisse[1], Hanzhang Lu[2], Matthias van Osch[1]
[1]Radiology, Leiden University Medical Center, Leiden, Zuid-Holland, Netherlands; [2]UT Southwestern Medical Center, Dallas, TX, United States

15:39 **0168.** **Velocity and Wall Shear Stress in the Circle of Willis in Sickle Cell Disease Using 4D Flow MRI**
ISMRM MERIT AWARD magna cum laude
Lena Vaclavu[1], Henk-Jan Mutsaerts[1], Wouter Potters[1], Veronica van der Land[1], Karin Fijnvandraat[1], Michael Markl[2], Charles Majoie[1], Aart Nederveen[1], Pim van Ooij[1]
[1]Academic Medical Center AMC, Amsterdam, Noord-Holland, Netherlands; [2]Radiology & Biomedical Engineering,, Northwestern University, Chicago, IL, United States

15:51 **0169.** **Automatic Segmentation of the Venous Vessel Network Based on Quantitative Susceptibility Maps and Its Application to Investigate Blood Oxygenation**
Barthélemy Serres[1], Andreas Deistung[1], Andreas Schäfer[2], Marek Kocinski[3], Andrzej Materka[3], Jürgen Reichenbach[1]
[1]Medical Physics Group, Institute for Diagnosis and Interventional Radiology, University Hospital Jena - Friedrich Schiller University Jena, Jena, Germany; [2]Max Plank Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; [3]University of Lodz, Lodz, Poland

16:03 **0170.** **Longitudinal Characterization of Brain Microstructure and Visuomotor Behavior Following Acute Ocular Hypertension Using Diffusion Tensor Imaging, Magnetization Transfer Imaging and Optokinetics**
ISMRM MERIT AWARD summa cum laude
Yolandi van der Merwe[1, 2], Leon C. Ho[1, 3], Xiaoling Yang[1, 4], Michael B. Steketee[4], Seong-Gi Kim[1, 5], Gadi Wollstein[4], Joel S. Schuman, [24], Kevin C. Chan[1, 4]
[1]Neuroimaging Laboratory, University of Pittsburgh, Pittsburgh, PA, United States; [2]Department of Bioengineering, Swanson School of Engineering, University of Pittsburgh, Pittsburgh, PA, United States; [3]Department of Electrical and Electronic Engineering, University of Hong Kong, Pokfulam, Hong Kong, China; [4]Department of Ophthalmology, School of Medicine, University of Pittsburgh, Pittsburgh, PA, United States; [5]Center for Neuroscience Imaging Research, Institute for Basic Science, Sungkyunkwan University, Suwon, Korea

Educational Course
ISMRM/SMRT Joint Forum: Whole Body DWI

Organizers: Mark A. Griswold, Ph.D. & James J. Stuppino, B.S., R.T.(R)(MR)

Room 718 A 14:15-16:15 *Moderators:* Mark A. Griswold, Ph.D. & James J. Stuppino, B.S., R.T.(R)(MR)

14:15 **DWI of the Liver**
Ihab Kamel

14:40 **Diffusion-Weighted Imaging in the Extrahepatic Abdomen & Pelvis**
Russell N. Low

15:05 **Sequence and Magnet Optimization, Post Processing & New Applications**
Ben Allen Kennedy

15:30 **WB DWI Lecture - How to Do It – Bone Metastases and Therapy Response**
James Stirling

15:55 **Summary Discussion**

16:15 **Adjournment & Meet the Teachers**

Combined Educational & Scientific Session
Dementia

Organizers: Jonathan H. Gillard, M.D., FRCR, MBA & Howard A Rowley, M.D.

Room 718 B 14:15-16:15 *Moderators:* Howard A. Rowley, M.D. & Greg Zaharchuk, M.D., Ph.D.

14:15 **Recent Advances in the Understanding of Dementias**
Aya M. Tokumaru

14:45 0171. Magnetic Resonance Elastography of Normal Pressure Hydrocephalus
Nikoo Fattahi[1], Arvin Arani[1], Kevin J. Glaser[1], Armando Manduca[1], Nicholas M. Wetjen[2], Perry Avital[2], Richard L. Ehman[1], John Huston III[1]
[1]Radiology, Mayo Clinic, Rochester, MN, United States; [2]Neurosurgery, Mayo Clinic, Rochester, MN, United States

15:05 0172. Diffusion Tensor Imaging Detects White Matter Changes in Preclinical Stages of Alzheimer Disease
ISMRM MERIT AWARD magna cum laude
Qing Wang[1], Yong Wang[1], Joshua S. Shimony[1], Anne M. Fagan[2], John C. Morris[2], Tammie L.S. Benzinger[1, 3]
[1]Radiology, Washington University School of Medicine, St. Louis, MO, United States; [2]Neurology, Washington University School of Medicine, St. Louis, MO, United States; [3]Neurological Surgery, Washington University School of Medicine, St. Louis, MO, United States

15:25 0173. APOE ε4 Allele Status Influences Early Neurodevelopment
Justin M. Remer[1], Douglas C. Dean III[1, 2], Jonathan O'Muircheartaigh[3], Sara D'Arpino[1], Holly Dirks[1], Sean C.L. Deoni[1, 4]
[1]Advanced Baby Imaging Lab, School of Engineering, Brown University, Providence, RI, United States; [2]Waisman Lab for Brain Imaging and Behavior, University of Wisconsin, Madison, WI, United States; [3]Department of Neuroimaging, King's College London, Institute of Psychiatry, London, United Kingdom; [4]Department of Pediatric Radiology, Children's Hospital Colorado, Aurora, CO, United States

15:45 Imaging Dementias with MRI
Mykol Larvie

16:15 Adjournment & Meet the Teachers

Educational Course
Cancer Theranostics & Monitoring Therapy with MRI

Organizers: Kristine Glunde, Ph.D. & Marty D. Pagel, Ph.D.
Room 801 A/B 14:15-16:15 *Moderators:* Kristine Glunde, Ph.D. & Guanshu Liu, Ph.D.

14:15 Theranostic Imaging in Cancer
Zaver M. Bhujwalla

14:45 Theranostic Near Infrared Photoimmunotherapy
Hisataka Kobayashi

15:15 Predictive MRI Biomarkers to Assess Therapeutic Outcome in Cancer
Bachir Taouli

15:45 Monitoring Tumor Response to Therapy with MRI
Alan Jackson

16:15 Adjournment & Meet the Teachers

Traditional Poster Session: Nuero A

Exhibition Hall 16:30-18:30 *(no CME credit)*

Electronic Poster Session: Relaxation

Exhibition Hall 16:30-17:30 *(no CME credit)*

Electronic Poster Session: Magnetic Susceptibility

Exhibition Hall 16:30-17:30 *(no CME credit)*

Electronic Poster Session: Magnetization Transfer
Exhibition Hall 16:30-17:30 *(no CME credit)*

Electronic Poster Session: Pulse Sequences A
Exhibition Hall 16:30-17:30 *(no CME credit)*

Study Group Session
MR Safety
Reception Hall 104 BCD 16:30-18:30 *(no CME credit)*

Study Group Session
Diffusion
Constitution Hall 105 16:30-18:30 *(no CME credit)*

Power Pitch Session: The Cardiovascular Power Hour
Power Pitch Theatre, Exhibition Hall 16:30-17:30 *(no CME credit)*
Moderators: Daniel B. Ennis, Ph.D. & Reza Nezafat, Ph.D.

0174. Gradient-Induced Voltages on 12-Lead ECGs During High-Duty-Cycle MRI Sequences and a Theoretically Based Method to Remove Them
HuaLei Zhang[1], Zion Tsz ho Tse[2], Charles L. Dumoulin[3], Ronald Watkins[4], Wei Wang[1], Jay Ward[5], Raymond Kwong[1], William Stevenson[1], Ehud J. Schmidt[1]
[1]Brigham and Women's Hospital, Boston, MA, United States; [2]University of Georgia, GA, United States; [3]Cincinnati Children's Hospital Medical Center, Cincinnati, United States; [4]Stanford University, CA, United States; [5]E-TROLZ, Inc, Andover, MA, United States

ISMRM MERIT AWARD magna cum laude
0175. Automatic Detection of Inflammatory 'hotspots' in Abdominal Aortic Aneurysms to Identify Patients at Risk of Aneurysm Expansion and Rupture
Yolanda Georgia Koutraki[1, 2], Chengjia Wang[1, 3], Jennifer Robson[2], Olivia Mcbride[2], Rachael O. Forsythe[2], Tom J. MacGillivray[1], Calum D. Gray[1], Keith Goatman[3], J. Camilleri-Brennan[2], David E. Newby[1, 2], Scott I. Semple[1, 2]
[1]Clinical Research Imaging Centre, University of Edinburgh, Edinburgh, United Kingdom; [2]Centre for Cardiovascular Science, University of Edinburgh, Edinburgh, United Kingdom; [3]Toshiba Medical Visualization System - Europe, Edinburgh, United Kingdom

0176. *In-Vivo* Lipid Quantification in Carotid Plaques Using Multi-Slice T2 Mapping: Histological Validation
Luca Biasiolli[1, 2], Joshua T. Chai[1], Linqing Li[3], Ashok Handa[4], Peter Jezzard[3], Robin P. Choudhury[1], Matthew D. Robson[2]
[1]AVIC, Radcliffe Department of Medicine, University of Oxford, Oxford, United Kingdom; [2]OCMR, Radcliffe Department of Medicine, University of Oxford, Oxford, United Kingdom; [3]FMRIB, Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, United Kingdom; [4]Nuffield Department of Surgical Sciences, University of Oxford, Oxford, United Kingdom

0177. Coronary Endothelial Function Assessment Using Self-Gated Cardiac Cine MRI with Golden Angle Acquisition and K-T Sparse SENSE
Jerome Yerly[1, 2], Giulia Ginami[1, 2], Giovanna Nordio[1, 2], Matthias Stuber[1, 2]
[1]Department of Radiology, University Hospital (CHUV) and University of Lausanne (UNIL), Lausanne, Switzerland; [2]Center for Biomedical Imaging (CIBM), Lausanne, Switzerland

ISMRM MERIT AWARD summa cum laude
0178. Inter-Study Repeatability of Self-Gated Quantitative Myocardial Perfusion MRI
Devavrat Likhite[1], Promporn Suksaranjit[2], Chris McGann[2], Brent Wilson[2], Imran Haider[2], Ganesh Adluru[1], Edward DiBella[1]
[1]UCAIR, University of Utah, Salt Lake City, UT, United States; [2]Division of Cardiovascular Medicine, Department of Medicine, University of Utah, Salt Lake City, UT, United States

0179. Initial Experience in Patients for Highly Accelerated Free-Breathing Whole-Heart Coronary MRA
Christoph Forman[1], Christoph Tillmanns[2], Michael O. Zenge[1], Michaela Schmidt[1]
[1]Siemens AG, Healthcare, Imaging and Therapy Systems, Magnetic Resonance, Erlangen, Germany; [2]Diagnostikum Berlin, Berlin, Germany

0180. Accelerated Four-Dimensional, Multiphase, Steady-State Imaging with Contrast Enhancement (MUSIC) Using Parallel Imaging and Compressed Sensing
Ziwu Zhou[1], Fei Han[1], Stanislas Rapacchi[1], Ihab Ayad[2], Isidro Salusky[3], Adam Plotnik[1], Paul Finn[1], Peng Hu[1]
[1]Radiology, UCLA, Los Angeles, CA, United States; [2]Anesthesiology, UCLA, Los Angeles, CA, United States; [3]Pediatrics, UCLA, Los Angeles, CA, United States

0181. Dual Agent Relaxivity Cancellation (DARC) Imaging, a Novel Imaging Method for Dark Blood Post-Contrast Imaging: Application to MR Lymphangiography
ISMRM MERIT AWARD magna cum laude
Jeffrey H. Maki[1], Noah Briller[1], Peter C. Neligan[2], Gregory J. Wilson[1]
[1]Radiology, University of Washington, Seattle, WA, United States; [2]Plastic Surgery, University of Washington, Seattle, WA, United States

0182. CMR-Footprinting: Quantifying Tissue Parameters with Clinical Pulse Sequence Simulations Improves Measurement Accuracy - An Example with MOLLI T1 Mapping
Christos G. Xanthis[1, 2], Sebastian L. Bidhult[1], Georgios Kantasis[1, 2], Mikael Kanski[1], Einar Heiberg[1, 3], Håkan Arheden[1], Anthony H. Aletras[1, 2]
[1]Cardiac MR group Lund, Dept. of Clinical Physiology, Lund University, Lund, Skåne, Sweden; [2]Department of Computer Science and Biomedical Informatics, University of Thessaly, Lamia, Greece; [3]Department of Biomedical Engineering, Faculty of Engineering, Lund University, Lund, Skåne, Sweden

0183. Modified Wideband 3D Late Gadolinium Enhancement (LGE) MRI for Patients with Implantable Cardiac Devices
ISMRM MERIT AWARD summa cum laude
Shams Rashid[1], Stanislas Rapacchi[1], Kalyanam Shivkumar, [12], Adam Plotnik[1], J. Paul Finn[1, 3], Peng Hu[1, 3]
[1]Radiological Sciences, University of California, Los Angeles, Los Angeles, CA, United States; [2]UCLA Cardiac Arrhythmia Center, University of California, Los Angeles, Los Angeles, CA, United States; [3]Biomedical Physics Inter-Departmental Graduate Program, University of California, Los Angeles, Los Angeles, CA, United States

0184. Black Blood Late Gadolinium Enhancement (BB-LGE) Using a Joint T_2 Magnetization Preparation and Inversion Preparation
ISMRM MERIT AWARD magna cum laude
Tamer Basha[1], Sébastien Roujol[1], Kraig V. Kissinger[1], Beth Goddu[1], Warren J. Manning[1, 2], Reza Nezafat[1]
[1]Department of Medicine, Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA, United States; [2]Radiology, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, United States

0185. "Squashing the Peanut": What It Means for *In-Vivo* Cardiac DTI
ISMRM MERIT AWARD summa cum laude
Andrew D. Scott[1, 2], Sonia Nielles-Vallespin, [13], Pedro Ferreira[1, 2], Laura-Ann McGill, [12], Dudley Pennell[1, 2], David Firmin, [12]
[1]NIHR Cardiovascular Biomedical Research Unit, The Royal Brompton Hospital, London, United Kingdom; [2]National Heart and Lung Institute, Imperial College London, London, United Kingdom; [3]National Heart, Lung and Blood Institute, National Institutes of Health, Bethesda, MD, United States

0186. Diffusion-Tensor Imaging Study of Myocardial Architecture of Situs Inversus and Situs Solitus Mutant Mouse Hearts
Yijen Lin Wu[1, 2], Yu Chen[1], XiaoQin Liu[1], Fang-Cheng Yeh[3], T. Kevin Hitchens[4], George C. Gabriel[1], Cecilia Wen Ya Lo[1]
[1]Developmental Biology, University of Pittsburgh, Pittsburgh, PA, United States; [2]Rangos Research Center Imaging Core, Children's Hospital of Pittsburgh of UPMC, Pittsburgh, PA, United States; [3]Psychology, Carnegie Mellon University, Pittsburgh, PA, United States; [4]Pittsburgh NMR Center for Biomedical Research, Carnegie Mellon University, Pittsburgh, PA, United States

0187. Mechanical Activation Time Mapping in Heart Failure Patients with and Without Myocardial Scar Using Cine DENSE MRI
ISMRM MERIT AWARD summa cum laude
Daniel A. Auger[1], Sophia X. Cui[1], Xiao Chen[1], Jeffrey W. Holmes[1], Kenneth C. Bilchick[2], Frederick H. Epstein[1, 3]
[1]Department of Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [2]Department of Medicine, Cardiovascular Medicine, University of Virginia, Charlottesville, VA, United States; [3]Department of Radiology and Medical Imaging, University of Virginia, Charlottesville, VA, United States

0188. **A Bayesian Approach for Accelerated Phase Contrast MRI**
Adam Rich[1], Lee C. Potter[1], Ning Jin[2], Joshua Ash[1], Orlando Simonetti[3], Rizwan Ahmad[3]
[1]Electrical and Computer Engineering, The Ohio State University, Columbus, OH, United States; [2]Siemens Medical Solution, Columbus, OH, United States; [3]Davis Heart and Lung Research Institute, The Ohio State University, Columbus, OH, United States

0189. **Validation of Radially Undersampled 4D-Flow-MRI in an Animal Model of Portal Hypertension**
Alex Frydrychowicz[1], Alejandro Roldan-Alzate[2], Emily Winslow[2], Dan Consigny[2], Camilo Campo[2], Utaroh Motosugi[2], Kevin M. Johnson[2], Christopher J. François[2], Oliver Wieben[2], Scott B. Reeder[2]
[1]Clinic for Radiology and Nuclear Medicine, University Hospital Schleswig-Hosltein, Campus Lübeck, Lübeck, Schleswig-Holstein, Germany; [2]University of Wisconsin - Madison, WI, United States

Perfusion & Permeability: Contrast Agent Methods

Room 701 A 16:30-18:30 *Moderators:* Hassan Bagher-Ebadian, Ph.D. & Stefan A. Reinsberg, Ph.D.

16:30 **0190.** **Real-Time Automatic Resolution Adaption (AURA) for Dynamic Contrast-Enhanced MRI**
ISMRM MERIT AWARD magna cum laude
Ina Nora Kompan[1, 2], Benjamin Richard Knowles[3], Matthias Guenther[1, 2]
[1]Fraunhofer MEVIS, Bremen, Germany; [2]mediri GmbH, Heidelberg, Baden-Württemberg, Germany; [3]Universitätsklinikum Freiburg, Freiburg, Baden-Württemberg, Germany

16:42 **0191.** **Mitigating Bias and Variance Associated with Fat Signal in Quantitative DCE of the Breast**
James H. Holmes[1], Kang Wang[1], Courtney K. Morrison[2], Frank R. Korosec[3], Ersin Bayram[4], Roberta M. Strigel[3], Diego Hernando[3], Scott B. Reeder[3], Edward F. Jackson[2], Ryan J. Bosca[2]
[1]Global MR Applications and Workflow, GE Healthcare, Madison, WI, United States; [2]Medical Physics, University of Wisconsin-Madison, WI, United States; [3]Radiology, University of Wisconsin-Madison, WI, United States; [4]Global MR Applications and Workflow, GE Healthcare, Houston, WI, United States

16:54 **0192.** ***In Vivo* Cross-Validation Study of Contrast Kinetic Model Analysis with Simultaneous B_1/T_1 Estimation**
Jin Zhang[1, 2], Kerryanne Winters[1, 2], Sungheon Gene Kim[1, 2]
[1]Center for Advanced Imaging Innovation and Research (CAI2R), Dept. Radiology, NYU School of Medicine, New York, NY, United States; [2]Bernard and Irene Schwartz Center for Biomedical Imaging, Dept. Radiology, NYU School of Medicine, New York, NY, United States

17:06 **0193.** **Improving the Arterial Input Function in Dynamic Contrast Enhanced MRI by Fitting the Signal in the Complex Plane**
ISMRM MERIT AWARD summa cum laude
Frank FJ Simonis[1], Alessandro Sbrizzi[2], Ellis Beld[1], Jan JW Lagendijk[1], Cornelis AT van den Berg[1]
[1]Radiotherapy, UMC Utrecht, Utrecht, Netherlands; [2]Radiology, UMC Utrecht, Utrecht, Netherlands

17:18 **0194.** **Interleaved Acquisition of a Radial Projection Based AIF with a Multi-Slice DCE Experiment**
ISMRM MERIT AWARD magna cum laude
Jen Moroz[1], Andrew Yung[1], Piotr Kozlowski[2, 3], Stefan Reinsberg[1]
[1]Physics and Astronomy, UBC, Vancouver, BC, Canada; [2]Radiology, UBC, Vancouver, BC, Canada; [3]MRI Research Centre, UBC, Vancouver, BC, Canada

17:30 **0195.** **Should DSC-MRI Based Blood Volume and Vessel Size Measures Be Corrected for Contrast Agent T2 Leakage Effects?**
ISMRM MERIT AWARD summa cum laude
Ashley M. Stokes[1], C. Chad Quarles[1]
[1]Institute of Imaging Science, Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States

17:42 **0196.** **Accelerated DCE MRI Using Constrained Reconstruction Based on Pharmaco-Kinetic Model Dictionaries**
ISMRM MERIT AWARD magna cum laude
Sajan Goud Lingala[1], Yi Guo[1], Yinghua Zhu[1], Samuel Barnes[2], R. Marc Lebel[3], Krishna S. Nayak[1]
[1]Electrical Engineering, University of Southern California, Los Angeles, CA, United States; [2]Division of Biology and Biological Engineering, California Institute of Technology, Pasadena, CA, United States; [3]GE Healthcare, Calgary, Canada

17:54 **0197.** **4-D Spatio-Temporal MR Perfusion Deconvolution Via Tensor Total Variation**
Ruogu Fang[1]
[1]School of Computing and Information Sciences, Florida International University, Miami, FL, United States

18:06 0198. Quantification of Water Exchange Between Intravascular and Extravascular Compartments Using Independent Component Analysis

Hatef Mehrabian[1, 2], Anne L. Martel[1, 2], Johann Le Floc'h[1], Hany Soliman[1, 3], Arjun Sahgal[1, 4], Greg J. Stanisz[1, 2]
[1]Physical Sciences, Sunnybrook Research Institute, Toronto, Ontario, Canada; [2]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [3]Odette Cancer Centre, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada; [4]Radiation Oncology, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada

18:18 0199. Multi-Compartment Analysis on Water Dynamics in Rat Brain by Heavy Water Perfusion

ISMRM MERIT AWARD magna cum laude

Zi-Min Lei[1], Cheng-He Li[1], Sheng-Min Huang[1], Chin-Tien Lu[1], Kung-Chu Ho[2], Fu-Nien Wang[1]
[1]Biomedical Engineering and Environmental Sciences, National Tsing Hua University, HsinChu, Taiwan; [2]Nuclear Medicine, Chang Gung Memorial Hospital, Taoyuan, Taiwan

New Methodological Approaches for MRS

Room 701 B 16:30-18:30 *Moderators:* Ovidiu C. Andronesi, M.D., Ph.D. & Stefan Bluml, Ph.D.

16:30 0200. Detection of Cerebral NAD+ in Humans at 7 T

Robin A. de Graaf[1], Henk M. De Feyter[1], Peter B. Brown[1], Terence W. Nixon[1], Douglas L. Rothman[1], Kevin L. Behar[1]
[1]MRRC, Yale University, New Haven, CT, United States

16:42 0201. GABA Concentration in the Superior Temporal Gyrus Predicts Gamma-Band Oscillations and Multisensory Perception

Ralf Mekle[1], Johanna Balz[2], Julian Keil[2], Yadira Roa-Romero[2], Semiha Aydin[1], Florian Schubert[1], Bernd Ittermann[1], Juergen Gallinat[3], Daniel Senkowski[2]
[1]Medical Physics, Physikalisch-Technische Bundesanstalt, Berlin, Germany; [2]Department of Psychiatry and Psychotherapy, Charité-Universitätsmedizin, Berlin, Germany; [3]Department of Psychiatry and Psychotherapy, University Hospital Hamburg-Eppendorf, Hamburg, Germany

16:54 0202. About Differences of the Transverse Relaxation Time (T_2) of 18 Brain Metabolites in Gray and White Matter at 3T

ISMRM MERIT AWARD summa cum laude

Patrik Oliver Wyss[1, 2], Andreas Hock[1, 3], Milan Scheidegger[1, 3], Niklaus Zoelch[1], Markus Rudin[1, 4], Spyros Kollias[2], Anke Henning, [15]
[1]Institute for Biomedical Engineering, UZH and ETH Zurich, Zurich, Switzerland; [2]Institute of Neuroradiology, University Hospital Zurich, Zurich, Switzerland; [3]Department of Psychiatry, Psychotherapy and Psychosomatics Hospital of Psychiatry, University of Zurich, Zurich, Switzerland; [4]Institute of Pharmacology and Toxicology, University of Zurich, Zurich, Switzerland; [5]Max Planck Institute for Biological Cybernetics, Tuebingen, Germany

17:06 0203. A Comparison of MEGA-SLASER and STEAM for *In Vivo* Quantification of GABA at 7T

ISMRM MERIT AWARD summa cum laude

Chen Chen[1], Peter Morris[1], Susan Francis[1], Penny Gowland[1]
[1]Sir Peter Mansfield Imaging Centre (SPMIC), University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

17:18 0204. Optimized Combination of Magnetic Resonance Spectroscopy Signal from Multi-Element Coil Arrays

ISMRM MERIT AWARD magna cum laude

Liang Fang[1, 2], Minjie Wu[1], Hengyu Ke[2], Anand Kumar[1], Shaolin Yang[1, 3]
[1]Department of Psychiatry, University of Illinois at Chicago, Chicago, IL, United States; [2]School of Electronic Information, Wuhan University, Wuhan, Hubei, China; [3]Department of Radiology, University of Illinois at Chicago, Chicago, IL, United States

17:30 0205. *Improvement of 2-Hydroxyglutarate Detectability by Optimized Triple-Refocusing at 3T In Vivo</I>ongxu An[1], Sandeep Ganji[1], Elizabeth A. Maher[1], Dianne Mendelsohn[1], Marco Pinho[1], Kevin Choe[1], Changho Choi[1]*

ISMRM MERIT AWARD magna cum laude

[1]University of Texas Southwestern Medical Center, Dallas, TX, United States

17:42 0206. Assessment of Hepatic Glycogen Turnover in Mice by *In Vivo* ^{13}C-MRS

ISMRM MERIT AWARD magna cum laude

Andreas Boss[1], Andor Veltien[1], Arend Heerschap[1]
[1]Radiology and Nuclear Medicine, Radboudumc, Nijmegen, Gelderland, Netherlands

17:54 0207. *In Vivo* Detection of ^{13}C Labeling of Glutamate and Glutamine Using Proton MRS at 7T

Li An[1], Shizhe Li[1], Maria Ferraris Araneta[1], Christopher Johnson[1], James B. Murdoch[2], Jun Shen[1]

[1]National Institute of Mental Health, National Institutes of Health, Bethesda, MD, United States; [2]Toshiba Medical Research Institute USA, Mayfield Village, OH, United States

18:06 **0208. Real-Time Tool to Forecast the Adequacy of Shim and to Define the Number of Acquisitions Needed to Answer the Clinical Question at Hand with the Prescribed 1H MR Spectroscopy Exam**

ISMRM MERIT AWARD magna cum laude

Sreenath Pruthviraj Kyathanahally[1], Roland Kreis[1]
[1]Depts. Radiology and Clinical Research, University Bern, Bern, Switzerland

18:18 **0209. Kinetic Analysis of Dynamic Deuterium MR Spectra for Simultaneous Assessment of Cerebral Glucose Consumption Rate and TCA Cycle Flux**

Ming Lu[1], Xiao-Hong Zhu[1], Wei Chen[1]
[1]Center for Magnetic Resonance Research, University of Minnesota Medical School, Minneapolis, MN, United States

fMRI: Physiology

Room 714 A/B 16:30-18:30 *Moderators:* Richard G. Wise, Ph.D. & J. Jean Chen, Ph.D.

16:30 **0210. fMRI Post-Stimulus Undershoots in Visual Cortex Are Neuronal in Origin**

Karen J. Mullinger[1, 2], Matthew Cherukara[1], Susan T. Francis[1], Stephen D. Mayhew[2]
[1]SPMIC, School of Physics and Astronomy, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]BUIC, School of Psychology, University of Birmingham, Birmingham, West Midlands, United Kingdom

16:42 **0211. Unravelling the Neurochemical Mechanism of Positive and Negative BOLD Responses: A Combined fMRI-fMRS Study**

ISMRM MERIT AWARD magna cum laude

Adam Berrington[1], Andre Gouws[2], Stuart Clare[1], Peter Jezzard[1], Uzay Emir[1]
[1]FMRIB Centre, University of Oxford, Oxford, United Kingdom; [2]York Neuroimaging Centre, University of York, York, United Kingdom

16:54 **0212. Application of Quantitative, Multimodal fMRI to the Estimation of the Cerebral Metabolic Response to CO_2 and a Visual Stimulus in Hypoxia**

Aaron Benjamin Simon[1], Zachary Smith[2], Richard Buxton[2], David Dubowitz[2]
[1]Bioengineering, University of California San Diego, La Jolla, CA, United States; [2]Radiology, University of California San Diego, La Jolla, CA, United States

17:06 **0213. Multiband BOLD Acquisition Enhances the Sensitivity of Cerebrovascular Reactivity (CVR) Mapping**

ISMRM MERIT AWARD magna cum laude

Harshan Ravi[1, 2], Peiying Liu[1], Shin-Lei Peng[1], Hanzhang Lu[1]
[1]Advanced Imaging Research Center, University of Texas at South Western Medical Center, Dallas, Tx, United States; [2]Department of Bioengineering , University of Texas at Arlington, Arlington, TX, United States

17:18 **0214. The Impact of Normoxic and Hyperoxic Baseline Periods in Block Paradigms of Hypercarbic Cerebrovascular Reactivity Studies**

ISMRM MERIT AWARD magna cum laude

Carlos C. Faraco[1], Jeroen C.W. Siero[2], Megan K. Strother[1], Daniel F. Arteaga[1], Manus J. Donahue[1]
[1]Radiology and Radiological Sciences, Vanderbilt University School of Medicine, Nashville, TN, United States; [2]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands

17:30 **0215. Searching for a Truly "iso-Metabolic" Gas Challenge for the Use in Calibrated fMRI and Cerebrovascular Reactivity Mapping**

ISMRM MERIT AWARD summa cum laude

Shin-Lei Peng[1], Harshan Ravi[1], Min Sheng[1], Binu Thomas[1], Hanzhang Lu[1]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States

17:42 **0216. Calibration of BOLD fMRI Motor Activation Maps Using BOLD Breath Hold Cerebrovascular Reactivity Mapping for Effective Compensation of Brain Tumor-Related Neurovascular Uncoupling**

ISMRM MERIT AWARD summa cum laude

Shruti Agarwal[1], Raag Airan[1], Sachin K. Gujar[1], Haris I. Sair[1], Jay J. Pillai[1]
[1]Division of Neuroradiology, Russell H. Morgan Department of Radiology and Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, United States

17:54 **0217. Task-Correlated Physiology Reveals Vascular-Neural Networks**
ISMRM MERIT AWARD magna cum laude
Molly Gallogly Bright[1], Joseph Whittaker[1], Ian Driver[1], Kevin Murphy[1]
[1]CUBRIC, School of Psychology, Cardiff University, Cardiff, Wales, United Kingdom

18:06 **0218. Baseline Oxygenation in the Brain: Correlation with BOLD and Comparison Between Susceptibility and Respiratory-Calibration Methods**
ISMRM MERIT AWARD summa cum laude
Audrey P. Fan[1], Andreas Schaefer[2], Laurentius Huber[2], Steffen N. Krieger[2], Harald E. Moeller[2], Arno Villringer[2], Claudine J. Gauthier[2, 3]
[1]Richard M. Lucas Center for Imaging, Stanford University, Stanford, CA, United States; [2]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; [3]Concordia University, Montreal, Quebec, Canada

18:18 **0219. A Streamlined Approach to Mapping the Oxygen Extraction Fraction (OEF) and Deoxygenated Blood Volume (DBV) Using the Quantitative BOLD Technique**
Alan J. Stone[1], Nicholas P. Blockley[1]
[1]FMRIB, Nuffield Department of Clinical Neurosciences,, Oxford, United Kingdom

Cancer: Preclinical Studies of Animal Models

Room 716 A/B 16:30-18:30 *Moderators:* Zaver M. Bhujwalla, Ph.D. & E. Jim Delikatny, Ph.D.

16:30 **0220. Tumour Response to Cabozantinib in a Transgenic Mouse Model of Neuroblastoma Assessed by Multiparametric MRI**
Gilberto S. Almeida[1], Philippa King[2], Yann Jamin[1], Albert Hallsworth[2], Hannah Webber[2], Sergey Popov[3], Louis Chesler[2], Simon P. Robinson[1]
[1]Radiotherapy and Imaging, The Institute of Cancer Research, Sutton, Surrey, United Kingdom; [2]Clinical Studies, The Institute of Cancer Research, Sutton, Surrey, United Kingdom; [3]Molecular Pathology, The Institute of Cancer Research, Sutton, Surrey, United Kingdom

16:42 **0221. Diffusion Weighted MRI for Early Detection and Progression Monitoring of Prostate Cancer in a Transgenic Mouse Model**
Deborah K. Hill[1, 2], Eugene Kim[1, 2], Jose R. Teruel[1, 2], Siver A. Moestue[1, 2], Tone F. Bathen[1]
[1]Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Sør Trøndelag, Norway; [2]St. Olavs University Hospital, Trondheim, Sør Trøndelag, Norway

16:54 **0222. *In Vivo* and *Ex Vivo* Diffusion Tensor Imaging Parameters Follow Collagen 1 Fiber Distribution in Breast Cancer Xenograft Model**
ISMRM MERIT AWARD summa cum laude
Samata M. Kakkad[1, 2], Jiangyang Zhang[1], Alireza Akhbardeh[1], Desmond Jacob[1], Meiyappan Solaiyappan[1], Michael A. Jacobs[1], Venu Raman[1], Dieter Leibfritz[2], Kristine Glunde[1], Zaver M. Bhujwalla[1]
[1]Radiology, The Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]University of Bremen, Bremen, Germany

17:06 **0223. Investigating the Impact of a Primary Tumor on Metastasis and Dormancy Using MRI: New Insights Into the Mechanism of Concomitant Tumor Resistance**
Paula Foster[1, 2], Amanda Hamilton[1], Carmen Simedrea[1]
[1]Imaging, Robarts Research Institute, London, Ontario, Canada; [2]Medical Biophysics, Western University, London, Ontario, Canada

17:18 **0224. Iron-Oxide Driven Decrease in T2 Relaxation Times Correlates with Tumor Associated Macrophages (TAMs) in Postpartum Pregnancy Associated Breast Cancer Xenografts**
ISMRM MERIT AWARD summa cum laude
J C. Montejano[1], K M. Huber[1], V F. Borges[1], P J. Schedin[2], N J. Serkova[1]
[1]University of Colorado Anschutz Medical Campus, Aurora, CO, United States; [2]Oregon Health and Science University, OR, United States

17:30 **0225. *In-Vivo* Quantification of Iron Oxide Nanoparticles at High Concentration in a Murine Breast Tumor Model Using Positive Contrast**
Jinjin Zhang[1], Alicia A. Petryk[2], Russell Reeves[3], Djaudat Idiyatullin[1], Hattie L. Ring, [14], P. Jack Hoopes[2, 3], Michael Garwood[1]

[1]Center for Magnetic Resonance Research, Department of Radiology, University of Minnesota, Minneapolis, MN, United States; [2]Thayer School of Engineering, Dartmouth College, NH, United States; [3]Geisel School of Medicine, Dartmouth College, NH, United States; [4]Department of Chemistry, University of Minnesota, MN, United States

17:42 **0226.** **Combined PET-MRI: Is It Possible to Quantify FDG Perfusion Based on Gd-DTPA Pharmacokinetics?**

ISMRM MERIT AWARD summa cum laude

Marie Anne Richard[1], Vincent Turgeon[1], Jérémie P. Fouquet[1], Luc Tremblay[1], Réjean Lebel[1], Martin Lepage[1]
[1]Centre d'imagerie moléculaire de Sherbrooke (CIMS), Université de Sherbrooke, Sherbrooke, Québec, Canada

17:54 **0227.** **Dynamic Contrast Enhanced Magnetic Resonance Imaging Evaluates Early Therapeutic Effect of Anti-EMMPRIN Antibody with Cisplatin or X-Radiation in Head and Neck Cancer Mouse Models**

Hyunki Kim[1], Yolanda Hartman[1], Guihua Zhai[1], Thomas Chung[1], Melissa Korb[1], Tong Zhou[1], Eben Rosenthal[1]
[1]University of Alabama at Birmingham, Birmingham, AL, United States

18:06 **0228.** **Effect of Oxygen Challenge on MR Imaging of Tumor Microenvironment**

Zhongwei Zhang[1], Qing Yuan[1], Heling Zhou[1], Ralph P. Mason[1]
[1]Department of Radiology, UT Southwestern Medical Center, Dallas, TX, United States

18:18 **0229.** **MR Microscopy - Ultra-High Resolution 7T MRI in Pathologic Analysis of Resected Breast and Lymph Tissue**

Brittany Dashevsky[1], Krishna Juluru, [12], Timothy D'Alfonso[1], Elizabeth Sutton[2], Eric Aronowitz[1], Ashley E. Giambrone[1], Doug Ballon[1]
[1]Weill Cornell Medical College, New York, NY, United States; [2]Memorial Sloan Kettering Cancer Center, New York, NY, United States

Mechanisms of Neural Degeneration & Damage

Constitution Hall 107 16:30-18:30 *Moderators:* Shinji Naganawa, M.D. & T.B.A.

16:30 **0230.** **Diagnosis of Early-Stage Idiopathic Parkinson's Disease: Feasibility of Nigrosome 1 Imaging at 3T**

Eung Yeop Kim[1], Young Noh[2], Young-Hee Sung[2], Jongho Lee[3]
[1]Radiology, Gachon University Gil Medical Center, Incheon, ., Korea; [2]Neurology, Gachon University Gil Medical Center, Incheon, ., Korea; [3]Electrical and Computer Engineering, Seoul National University, Seoul, ., Korea

16:42 **0231.** **Can MRI of the Nigrosomes Provide a Biomarker for Progression of Parkinson's Disease?**

Stefan Schwarz[1], Olivier Mougin[1], Yue Xing[1], Ania Blazejewska[1], Lesley Martin[1], Nin Bajaj[2], Dorothee Auer[1], Penny Gowland[1]
[1]Sir Peter Mansfield Imaging Centre, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]Division of Neurology, Nottingham University Hospitals NHS Trust, Nottingham, Nottinghamshire, United Kingdom

16:54 **0232.** **Differentiation of Early-Stage Parkinsonisms with Diffusion Kurtosis Imaging Using the Diffusion Magnetic Resonance Parkinsonism Index**

Kenji Ito[1], Makoto Sasaki[1], Chigumi Ohtuka[2], Suguru Yokosawa[3], Taisuke Harada[1], Ikuko Uwano[1], Fumio Yamashita[1], Satomi Higuchi[1], Yasuo Terayama[2]
[1]Division of Ultrahigh Field MRI, Institute for Biomedical Sciences, Iwate Medical University, Yahaba, Iwate, Japan; [2]Department of Neurology and Gerontology, Iwate Medical University, Morioka, Iwate, Japan; [3]Central Research Laboratory, Hitachi, Ltd., Kokubunji, Tokyo, Japan

17:06 **0233.** **Memory Circuit Involvement in Systematic Lupus Erythematosus Patients**

Ivana De Lucia[1], An Vo[1], Meggan Mackay[2], Peter B. Kingsley[3], Bruce Volpe[2], Cynthia Aranow[2], David Eidelberg[1], Betty M. Diamond[2], Aziz M. Ulug[1], [4]
[1]Center for Neurosciences, Feinstein Institute for Medical Research, Manhasset, NY, United States; [2]Center for Autoimmune Diseases, Feinstein Institute for Medical Research, Manhasset, NY, United States; [3]North Shore University Hospital, Manhasset, NY, United States; [4]Institute of Biomedical Engineering, Bogazici University, Istanbul, Turkey

17:18 **0234.** ***Deterioration of Neuronal and Glial Intermediary Metabolism, Neurochemical Profiles and Brain Morphology in Insulin-Resistant Goto-Kakizaki Rats: A Multimodal Magnetic Resonance Study In Vivo</I>eya-Merret Girault[1], Rolf Gruetter[1], [2], Joao M.N. Duarte[1]***

ISMRM MERIT AWARD magna cum laude

[1]LIFMET, EPFL, Lausanne, Vaud, Switzerland; [2]Radiology, UNIL and UNIGE, Lausanne and Geneva, Vaud, Switzerland

17:30 0235. Diffusion Tensor Imaging and Contrast-Enhanced MRI of the Eye and the Central Visual Pathway in Streptozotocin-Induced Diabetes

Swarupa Kancherla[1], Ed X. Wu[2], Kevin C. Chan[1, 3]
[1]Department of Ophthalmology, School of Medicine, University of Pittsburgh, Pittsburgh, PA, United States; [2]Department of Electrical and Electronic Engineering, The University of Hong Kong, Pokfulam, Hong Kong, China; [3]Department of Bioengineering, Swanson School of Engineering, University of Pittsburgh, Pittsburgh, PA, United States

17:42 0236. Investigation of Glymphatic Impairment in Diabetes Using MRI and Distributed RC Line Model

Esmaeil Davoodi Bojd[1], Li Zhang[1], Guangliang Ding[1], Siamak Nejad-Davarani[1], ZhengGang Zhang[1], Lian Li[1], QingJiang Li[1], Michael Chopp[1], Quan Jiang[1]
[1]Neurology, Henry Ford Health System, Detroit, MI, United States

17:54 0237. SWI Monitoring Iron Tagged Dextran Transportation in Normal and Hydrocephalus Rat Brains Via Intrathecal Delivery

Satish Krishnamurthy[1], Jie Li[1], Yimin Shen[2], E Mark Haacke[2]
[1]Department of Neurosurgery, SUNY Upstate Medical University, Syracuse, NY, United States; [2]Radiology, Wayne state university, Detroit, MI, United States

18:06 0238. Blood-Brain-Barrier Permeability and Lesion Volume Changes in Acute Japanese Macaque Encephalomyelitis

Ian Tagge[1, 2], Steven Kohama[3], Jim Pollaro[1], Lawrence Sherman[3], Dennis Bourdette[4], Randy Woltjer[4], Scott Wong[3], William Rooney[1, 2]
[1]Advanced Imaging Research Center, Oregon Health & Science University, Portland, OR, United States; [2]Biomedical Engineering, Oregon Health & Science University, Portland, OR, United States; [3]Oregon National Primate Research Center, Oregon Health & Science University, OR, United States; [4]Neurology, Oregon Health & Science University, Portland, OR, United States

18:18 0239. Metabolism Reflects Progressive HIV-1 Associated Neuropathology in Humanized Mice

Michael D. Boska[1], Prasanta K. Dash[2], Jaclyn Knibbe[2], Adrian A. Epstein[1, 2], Robin High[3], Edward Makarov[2], Harris A. Gelbard[4], Larisa Poluektova[2], Howard E. Gendelman[2], Santhi Gorantla[2]
[1]Radiology, University of Nebraska Medical Center, Omaha, NE, United States; [2]Pharmacology and Experimental Neurosciences, University of Nebraska Medical Center, Omaha, NE, United States; [3]College of Public Health, Biostatistics, University of Nebraska Medical Center, Omaha, NE, United States; [4]5Department of Neurology, Center for Neural Development and Disease, University of Rochester Medical Center, Rochester, NY, United States

Simultaneous Multi-Slice Imaging

John Bassett Theatre 102 16:30-18:30 *Moderators:* Felix Breuer, Ph.D. & David Feinberg, M.D., Ph.D.

16:30 0240. RARE/Turbo Spin Echo Imaging with Simultaneous MultiSlice Wave-CAIPI

ISMRM MERIT AWARD summa cum laude

Borjan Gagoski[1], Berkin Bilgic[2], Cornelius Eichner[2], Himanshu Bhat[3], P. Ellen Grant[1], Lawrence L. Wald[2], Kawin Setsompop[2]
[1]Boston Children's Hospital, Boston, MA, United States; [2]Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [3]Siemens Medical Solutions, Charlestown, MA, United States

16:42 0241. Rapid Online Multiband RF Peak Power Minimization for CAIPIRINHA and PTX-Multi-Slice Shims by Inter-Slice Phase Relaxation

ISMRM MERIT AWARD magna cum laude

Alessandro Sbrizzi[1], Benedikt Poser[2], Desmond H Y Tse[2], Hans Hoogduin[1], Peter R. Luijten[1], Cornelis A. van den Berg[1]
[1]UMC Utrecht, Utrecht, Netherlands; [2]Faculty of Psychology and Neuroscience, Maastricht University, Limburg, Netherlands

16:54 0242. Simultaneous Multi-Slice Airway Compliance Measurement Using Sparse Golden-Angle Radial CAIPIRINHA

ISMRM MERIT AWARD summa cum laude

Ziyue Wu[1], Michael C.K. Khoo[1], Krishna S. Nayak[1]
[1]University of Southern California, Los Angeles, CA, United States

17:06 0243. Simultaneous Multi-Slice Imaging with Chemical Shift Separation

Sjoerd Crijns[1], Alessandro Sbrizzi[1], Bjorn Stemkens[1], Cornelis van den Berg[1], Peter Luijten[1], Jan Lagendijk[1], Anna Andreychenko[1]

[1]UMC Utrecht, Utrecht, Netherlands

17:18 0244. Simultaneous Multi-Slice Magnetic Resonance Fingerprinting Reconstruction Using GROG+slice-GRAPPA (GsG)

Huihui Ye[1, 2], Borjan Gagoski[3], Berkin Bilgic[1], Stephen F. Cauley[1], Dan Ma[4], Yiping Du[2], Lawrence L. Wald[1], Mark A. Griswold[4], Kawin Setsompop[1]
[1]MGH/HST Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [2]Zhejaing University, Hangzhou, Zhangjiang, China; [3]Boston Children's Hospital, MA, United States; [4]Case Western Reserve University, OH, United States

17:30 0245. Self-Calibrated Simultaneous Multi-Slice PROPELLER

ISMRM MERIT AWARD summa cum laude

Ola Norbeck[1], Magnus Mårtensson[2, 3], Enrico Avventi[3], Mathias Engström, [13], Stefan Skare[1, 3]
[1]Dept. of Neuroradiology,, Karolinska University Hospital, Stockholm, Sweden; [2]EMEA Research and Collaboration, GE Applied Science Laboratory, GE Healthcare, Stockholm, Sweden; [3]Dept. of Clinical Neuroscience, Karolinska Institutet, Stockholm, Sweden

17:42 0246. Phase-Cycled Multiband SSFP Imaging with CAIPIRINHA for Efficient Banding Removal

ISMRM MERIT AWARD magna cum laude

Yi Wang[1], Thomas Martin[1], Steen Moeller[2], Essa Yacoub[2], Danny JJ Wang[1]
[1]Neurology, UCLA, Los Angeles, CA, United States; [2]Center of Magnetic Resonance Research, University of Minnesota, MN, United States

17:54 0247. Accelerating Magnetic Resonance Fingerprinting Using T-Blipped Simultaneous Multi-Slice Acquisition

Huihui Ye[1, 2], Dan Ma[3], Yun Jiang[3], Stephen F. Cauley[1], Yiping Du[2], Lawrence L. Wald[1], Mark A. Griswold[3], Kawin Setsompop[1]
[1]MGH/HST Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [2]Zhejaing University, Hangzhou, Zhangjiang, China; [3]Case Western Reserve University, OH, United States

18:06 0248. EPI 2D Ghost Correction and Integration with Multiband : Application to Diffusion Imaging at 7T.

Steen Moeller[1], Edward Auerbach[1], An T. Vu[1], Christophe Lenglet[1], Stamatios N. Sotiropoulos[2], Kamil Ugurbil[1], Essa Yacoub[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States; [2]FMRIB-Centre, Oxford,, Oxfordshire, United Kingdom

18:18 0249. Evaluation of Multiband-DABS ASL for Resting-State fMRI

Keren Yang[1], Rosa Sanchez Panchuelo[1], Martin Buehrer[2], Richard Bowtell[1], Susan Francis[1]
[1]University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]Gyrotools, Zurich, Switzerland

Combined Educational & Scientific Session
Musculoskeletal Functional Imaging: Mechanics & More

Organizers: Eric Y. Chang, M.D., Richard Kijowski, M.D., William B. Morrison, M.D., Ravinder R. Regatte, Ph.D. & Siegfried Trattnig, M.D.

Room 718 A 16:30-18:30 *Moderators:* Matthew F. Koff, Ph.D. & Bruce M. Damon, Ph.D.

16:30 Techniques: Joint Mechanics & Gait

Thor Franciscus Besier

17:00 Clinical Applications

Garry E. Gold

17:30 0250. Evaluation of the Relationship Between IVIM Microvascular Blood Flow and Exercise Duration in Shoulder Muscles After Lift-Off Test

Christian Federau[1], Jean-Baptiste Ledoux[1], Patrick Omoumi[1], Fabio Becce[1]
[1]CHUV, University Hospital Lausanne, Lausanne, Vaud, Switzerland

17:42 **0251.** **Quantitative NMR Imaging of the Short-T2 Components in the SKM Tissue: Alterations Observed in Myopathic Patients**

ISMRM MERIT AWARD summa cum laude

Ericky Caldas de A. Araujo[1], Noura Azzabou[1], Alexandre Vignaud[2], Geneviève Guillot[3], Pierre G. Carlier[1, 4]
[1]NMR Laboratory, Institute of Myology, Paris, Île-de-France, France; [2]CEA/DSV/I2BM/NeuroSpin/UNIRS, Gif Sur Yvette, Île-de-France, France; [3]IR4M/UMR8081/CNRS, University Paris-SUD, Orsay, Île-de-France, France; [4]NMR Laboratory, CEA/I2BM/MIRCen, Paris, Île-de-France, France

17:54 **0252.** ***In Vivo* Diffusion MR Study at 7T of Hindlimb Muscles in a Mouse Model of Duchenne Muscular Dystrophy**

ISMRM MERIT AWARD magna cum laude

Paola Porcari[1], Elizabeth Greally[2], Volker Straub[2], Andrew M. Blamire[1]
[1]Newcastle Magnetic Resonance Centre, Newcastle University, Newcastle upon Tyne, Tyne and Wear, United Kingdom; [2]Institute of Genetic Medicine, Newcastle University, Newcastle upon Tyne, Tyne and Wear, United Kingdom

18:06 **0253.** **The Relationship of Walking Speed Metrics to Phosphorus Magnetic Resonance Spectroscopy (^{31}P-MRS) Bioenergetic Measurements in the Baltimore Longitudinal Study of Aging (BLSA)**

Seongjin Choi[1], David A. Reiter[2], Kenneth W. Fishbein[2], Eleanor M. Simonsick[1], Richard G. Spencer[2], Luigi Ferrucci[3]
[1]Translational Gerontology Branch, NIH/National Institute on Aging, Baltimore, MD, United States; [2]Laboratory of Clinical Investigation, NIH/National Institute on Aging, Baltimore, MD, United States; [3]Intramural Research Program, NIH/National Institute on Aging, Baltimore, MD, United States

18:18 **0254.** **Mitochondrial NADH *In Vivo*: Functional Test Reveals a Natural Indicator of Oxidative Phosphorylation in 31P Spectrum.**

Kevin E. Conley[1], Amir Ali[1], Sharon Jubrias[1]
[1]Radiology, University of Washington, Seattle, WA, United States

18:30 **Adjournment & Meet the Teachers**

Combined Educational & Scientific Session
Quantitative Biomarkers in Renal MRI: From Morphology to Physiology

Organizers: Lorenzo Mannelli, M.D., Ph.D., Ivan Pedrosa, M.D., Scott B. Reeder, M.D., Ph.D. & Edwin J.R. van Beek, M.D., Ph.D., M.Ed., FRCR

Room 718 B 16:30-18:30 *Moderators:* Rotem S. Lanzman, Ph.D. & Glen Morrell, M.D., Ph.D.

16:30 **Introduction**

16:33 **Arterial Spin Labelling**
Susan T. Francis

16:48 **0255.** **Correlation Analysis Between Renal Perfusion and Estimated Glomerular Filtration Rate in Volunteers and Patients with Chronic Kidney Disease: An Arterial Spin Labeling in 3.0T MRI Study**

Yuelang Zhang[1], Chenxia Li[1], Jie Gao[1], Xiang Li[1], Jian Yang[1]
[1]Department of Diagnostic Radiology, The First Hospital of Medical School, Xi'an Jiaotong University, Xi¡¯an, Shaanxi, China

17:00 **0256.** **Evaluation of Readout Schemes for Arterial Spin Labelling in the Human Kidney**

Charlotte E. Buchanan[1, 2], Eleanor F. Cox[1], Susan T. Francis[1]
[1]SPMIC, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]Division of Medical Sciences and Graduate Entry Medicine, Royal Derby Hospital, Nottingham , United Kingdom

17:12 **Blood Oxygen Level Dependent**
Pottumarthi V. Prasad

17:27 **0257.** **Determination of Technically and Physiologically Caused Variation of Parameters from DTI and BOLD MRI in Native Kidneys: a Repeatability Study**

ISMRM MERIT AWARD magna cum laude

Maryam Seif[1], Chris Boesch[1], Peter Vermathen[1]
[1]Depts. Radiology and Clinical Research, University Bern, Bern, Switzerland

17:39 0258. Blood Oxygen Level Dependent (BOLD) and Diffusion Tensor (DTI) Imaging of the Kidneys in Patients with Type 1 Diabetes: Preliminary Clinical Experience with Reference to Healthy Control Subjects

Elissa Botterill[1], Windell Ang[1], Jas-mine Seah[1], Claire Mulcahy[2], Elif Ekinci[1, 3], George Jerums[1, 3], Richard MacIsaac, [34], Pippa Storey[5], Eric Sigmund[5], Tim Spelman[6], Ruth P. Lim[1, 3]
[1]Austin Health, Melbourne, Victoria, Australia; [2]The Florey Institute of Neuroscience and Mental Health, Melbourne, Victoria, Australia; [3]The University of Melbourne, Melbourne, Victoria, Australia; [4]St Vincent's Hospital, East Melbourne, Victoria, Australia; [5]CAIIR, Bernard and Irene Schwartz Center for Biomedical Imaging, NYU School of Medicine, New York, NY, United States; [6]Burnet Institute, Melbourne, Victoria, Australia

17:51 Diffusion
Rotem S. Lanzman

18:06 0259. Diffusion-Weighted Magnetic Resonance Imaging in Partially Nephrectomized Kidneys

Moritz Jörg Schneider[1], Olaf Dietrich[1], Katharina Stella Winter[1], Maximilian Reiser[1], Michael Staehler[2], Mike Notohamiprodjo[3]
[1]Institute for Clinical Radiology, Ludwig-Maximilians-University Hospital Munich, Munich, Bavaria, Germany; [2]Department of Urology, Ludwig-Maximilians-University Hospital Munich, Munich, Bavaria, Germany; [3]Department of Diagnostic and Interventional Radiology, University Hospital Tuebingen, Tuebingen, Baden-Württemberg, Germany

18:18 0260. Detecting the Acute Renal Allograft Rejection in Early Stage: A Comparison of Different MR Sequences

Xinyao Zhao[1], Tianyi Qian[2], Xiaoqin Kong[1], Kezhou Xing[1], Hao Shi[1]
[1]Radiology, Shandong Provincial Qianfoshan Hospital, Jinan, Shandong, China; [2]MR Collaborations NE Asia, Siemens Healthcare, Beijing, China

18:30 Adjournment & Meet the Teachers

Educational Course
MR Physics & Techniques for Clinicians

Organizers: Marcus T. Alley, Ph.D., Michael Markl, Ph.D., Brian Hargraves, Ph.D., & Nicole Seiberlich, Ph.D.

Room 801 A/B 16:30-18:30 *Moderators:* Marcus T. Alley, Ph.D. & Nicole E. Seiberlich, Ph.D.

16:30 Spin Gymnastics 1
Walter Kucharczyk

17:10 Spin Gymnastics 2
Donald B. Plewes

17:50 K-Space
Kevin M. Koch

18:30 Adjournment & Meet the Teachers

Manuscript Reviewing for ISMRM's Scientific Journals

Organizers: Matt A. Bernstein, Ph.D. & Mark A. Schweitzer, M.D, FRCPSC

Room 701 A 18:45-19:45 *Moderators:* Matt A. Bernstein, Ph.D. & Mark A. Schweitzer, M.D, FRCPSC

Sunrise Educational Course
Addressing Clinical Challenges in the Body with MRI

Organizers: Lorenzo Mannelli, M.D., Ph.D., Ivan Pedrosa, M.D., Scott B. Reeder, M.D., Ph.D. & Edwin J.R. van Beek, M.D., Ph.D., M.Ed., FRCR

Room 701 A 07:00-07:50 *Moderators:* Mustafa Shadi R. Bashir, M.D. & Gabrielle Masselli, M.D.

Assessment of Incidental Cystic Lesions with MRI

07:00 **Pancreas**
Masoom A. Haider

07:25 **Kidney**
Andrew B. Rosenkrantz

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
How Can MRI of Mouse Models Provide Value for Cancer Studies?

Constitution Hall 107 07:00-07:50

07:00 **How Can MRI of Mouse Models Provide Value for Cancer Studies?**
Lacey McNally

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
Fast Cardiac Imaging

Organizers: Daniel B. Ennis, Ph.D. & Harald Kramer, M.D.

Room 714 A/B 07:00-07:50 *Moderators:* Daniel B. Ennis, Ph.D. & Michael S. Hansen, Ph.D.

07:00 **k-Space Based Acceleration Methods**
Daniel A. Herzka

07:16 **KT-Based Acceleration Methods**
Daniel Kim

07:32 **Compressed Sensing**
Reza Nezafat

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
UTE: Applications & Advances

Organizers: Neal K. Bangerter, Ph.D.

Room 716 A/B 07:00-07:50 *Moderators:* Neal K. Bangerter, Ph.D. & Matthew D. Robson, Ph.D.

07:00 **UTE: Past, Present & Future**
Graeme M. Bydder

07:25 **Solid-State MRI for the Study of Calcified Tissues**
Felix W. Wehrli

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
Contrast by Body Part: How & Why?

Organizers: Brian A. Hargreaves, Ph.D. & Manojkumar Saranathan, Ph.D.

Room 718 A 07:00-07:50 *Moderators:* Manojkumar Saranathan, Ph.D. & Holden H. Wu, Ph.D.

07:00 **General Tools to Address Fat, Motion & Inhomogeneity**
Anja C. S. Brau

07:25 **Musculoskeletal Sequences: How & Why?**
Edwin H.G. Oei

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
Brain Networks

Organizers: James J. Pekar, Ph.D., & Jonathan R. Polimeni, Ph.D.

Room 718 B 07:00-07:50 *Moderators:* Catherine E. Chang, Ph.D. & James J. Pekar, Ph.D.

07:00 **How to Construct a Brain Network from MRI Data**
Christopher J. Honey

07:25 **How to Analyze a Network**
Martijn P. Van Den Heuvel

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
Cartilage Structure & Function

Organizers: Eric Y. Chang, M.D., Garry E. Gold, M.D., Richard Kijowski, M.D., William B. Morrison, M.D., Ravinder R. Regatte, Ph.D. & Siegfried Trattnig, M.D.

Room 801 A/B 07:00-07:50 *Moderators:* Richard Kijowski, M.D. & Ravinder Reddy, Ph.D.

Cartilage Structure & Function

07:00 **Collagen Structure: DTI & T2 Mapping**
Jose Maria G. Raya

07:25 **GAG: Sodium & T1rho**
Ari Borthakur

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
Neuroimaging: Infection

Organizers: Jonathan H. Gillard, M.D., FRCR, MBA & Howard A Rowley, M.D.

Room 701 B 07:00-07:50 *Moderators:* Christopher G. Filippi, M.D. & Tchoyonson Lim, M.D.

07:00 **CNS Infection in the West: The Value of MRI**
Walter Kucharczyk

07:25 **CNS Infection in Asia: The Value of MRI**
Rakesh K. Gupta

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
Nuts & Bolts of Advanced Imaging

Organizers: Alexey Samsonov, Ph.D., N. Jon Shah, Ph.D. & Jeffrey Tsao, Ph.D., M.B.A.
John Bassett Theatre 102 07:00-07:50 *Moderators:* Michael S. Hansen, Ph.D. & Tamer S. Ibrahim, Ph.D.

Introductory Talks: Excitation & Reconstruction Software Tools

07:00 **Coils, RF Shimming & SAR**
Tamer S. Ibrahim

07:12 **Parallel Transmit Pulse Design**
William A. Grissom

07:25 **The Image Reconstruction Pipeline**
Michael S. Hansen

07:37 **Parallel Imaging & Beyond**
Philip J. Beatty

07:50 **Adjournment & Meet the Teachers**

Plenary Session
MR Imaging of Patients with Implanted Devices

Organizers: Daniel Ennis, Ph.D.
Plenary Hall FG 08:30-09:30 *Moderators:* Daniel Ennis, Ph.D. & T.B.A.

08:30 **0261.** **MR Safety Considerations for Patients with Implanted Devices**
Niels Kuster

08:50 **0262.** **MR Imaging of Patients with Implanted Metal Devices**
Brian A. Hargreaves

09:10 **0263.** **MRI in the Setting of Permanent Pacemakers and Implantable Defibrillators**
Saman Nazarian

09:30 **Adjournment**

Traditional Poster Session: Body
Exhibition Hall 10:00-12:00 *(no CME credit)*

Traditional Poster Session: Interventional
Exhibition Hall 10:00-12:00 *(no CME credit)*

Electronic Poster Session: Molecular Imaging
Exhibition Hall 10:00-12:00 *(no CME credit)*

Study Group Session
MR in Drug Research
Reception Hall 104 BCD 10:00-12:00 *(no CME credit)*

Study Group Session
Cardiac MR
Constitution Hall 105 10:00-12:00 *(no CME credit)*

Power Pitch Session: ASL Methods: Neuro

Power Pitch Theatre, Exhibition Hall 10:00-11:00 *(no CME credit)*

Moderators: Susan T. Francis, Ph.D. & Jun Hua, Ph.D.

ISMRM MERIT AWARD summa cum laude

0264. Time- And Vessel Encoded PCASL: A Free Lunch with All the Trimmings

Thomas W. Okell[1], Wouter Teeuwisse*[2, 3], Michael A. Chappell[1, 4], Matthias J.P. van Osch[2, 3]*

[1]FMRIB Centre, Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]dept. of Radiology, C.J. Gorter Center for High Field MRI, Leiden University Medical Center, Leiden, Netherlands; [3]Leiden Institute for Brain and Cognition, Leiden, Netherlands; [4]IBME, Department of Engineering Sciences, University of Oxford, Oxford, United Kingdom

ISMRM MERIT AWARD summa cum laude

0265. A Novel Multiphase Scheme for Simultaneous ASL and BOLD Acquisition

Paula Croal[1], Emma Hall[1], Penny Gowland[1], Susan Francis[1]

[1]Sir Peter Mansfield Imaging Centre, Department of Physics & Astronomy, The University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

0266. Wedge-Shaped Slice-Selective Adiabatic Inversion Pulse for Bolus Temporal Width Control in Pulsed Arterial Spin Labeling

Jia Guo[1], Richard B. Buxton[1], Eric C. Wong[1, 2]

[1]Radiology, UC San Diego, La Jolla, CA, United States; [2]Psychiatry, UC San Diego, La Jolla, CA, United States

ISMRM MERIT AWARD summa cum laude

0267. Multiband Background Suppressed Turbo-FLASH Imaging with CAIPIRINHA for Whole-Brain Distortion-Free PCASL Imaging at 3 and 7T

Yi Wang[1], Steen Moeller[2], Xiufeng Li[2], An T. Vu[2], Kate Krasileva[1], Kamil Ugurbil[2], Essa Yacoub[2], Danny JJ Wang[1]

[1]Neurology, UCLA, Los Angeles, CA, United States; [2]Center of Magnetic Resonance Research, University of Minnesota, MN, United States

ISMRM MERIT AWARD magna cum laude

0268. Single-Shot 3D-EPI PCASL with Background Suppression

Markus Boland[1], Rüdiger Stirnberg[1], Daniel Brenner[1], Tony Stöcker[1, 2]

[1]German Center for Neurodegenerative Diseases (DZNE), Bonn, Germany; [2]Department of Physics and Astronomy, University of Bonn , Germany

ISMRM MERIT AWARD magna cum laude

0269. Single-Shot Whole-Brain Background-Suppressed PCASL MRI with 1D Accelerated 3D RARE Stack-Of-Spirals Readout

Marta Vidorreta[1], Ze Wang[2, 3], Yulin V. Chang[1, 4], María A. Fernández-Seara[5], John A. Detre[1]

[1]Department of Neurology, University of Pennsylvania, Philadelphia, PA, United States; [2]Center for Cognition and Brain Disorders, Hangzhou Normal University, Hangzhou, Zhejiang Province, China; [3]Departments of Radiology and Psychiatry, University of Pennsylvania, Philadelphia, PA, United States; [4]Department of Radiology, University of Pennsylvania, PA, United States; [5]Functional Neuroimaging Laboratory, CIMA, University of Navarra, Navarra, Spain

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0270. Improving Motion Robustness of Pseudo-Continuous Arterial Spin Labeling by Using Real-Time Motion Correction

Michael Helle[1], Peter Koken[1], Julien Sénégas[1]

[1]Philips Research, Hamburg, Germany

0271. Prospective Motion Correction for Artefact Reduction in Pseudo-Continuous Arterial Spin Labelling with a 3D GRASE Readout.

Benjamin Knowles[1], Federico von Samson-Himmelstjerna[2, 3], Matthias Guenther[2, 4], Maxim Zaitsev[1]

[1]Medical Physics, University Medical Centre, Freiburg, Germany; [2]Fraunhofer Mevis, Bremen, Germany; [3]Charité Medical University, Center for Stroke Research, Berlin, Germany; [4]University of Bremen, Germany

ISMRM MERIT AWARD magna cum laude

0272. An Off-Resonance Correction Method for Vessel-Encoded Pseudo-Continuous Arterial Spin Labeling Using the Optimized Encoding Scheme

Eleanor S K Berry[1], Peter Jezzard[1], Thomas W. Okell[1]

[1]FMRIB centre, Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, United Kingdom

0273. 3D Weighted Least Squares Algorithm for Partial Volume Effect Correction in ASL Images

ISMRM MERIT AWARD magna cum laude

Pablo García-Polo[1, 2], Adrian Martín[3, 4], Virginia Mato[5], Alicia Quirós[6], Fernando Zelaya[7], Juan Antonio Hernandez-Tamames[5]

[1]A. A. Martinos Center for Biomedical Imaging, Mass. General Hospital, M+Visión Advanced Fellowship, Charlestown, MA, United States; [2]Centre for Biomedical Technology - Universidad Politécnica de Madrid, Pozuelo de Alarcón, Madrid, Spain; [3]Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA, United States; [4]3Applied Mathematics, Universidad Rey Juan Carlos, Móstoles, Madrid, Spain; [5]Department of Electrical Technology, Universidad Rey Juan Carlos, Móstoles, Madrid, Spain; [6]Cardiology, Hospital Clínico San Carlos, Madrid, Spain; [7]Department of Neuroimaging, King's College London, London, United Kingdom

0274. Dynamic 3D ASL in 20 Seconds Per Frame with Model-Based Image Reconstruction

ISMRM MERIT AWARD summa cum laude

Li Zhao[1], Samuel W. Fielden[2], Xue Feng[2], Max Wintermark[3], John P. Mugler III[4], Josef Pfeuffer[5], Craig H. Meyer[2, 4]

[1]Radiology, Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA, United States; [2]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [3]Radiology, Stanford University, Stanford, CA, United States; [4]Radiology, University of Virginia, Charlottesville, VA, United States; [5]Application Development, Siemens Healthcare, Erlangen, Germany

0275. Subtraction Free Arterial Spin Labeling: A New Bayesian-Inference Based Approach for Gaining Perfusion Data from Time Encoded Data

ISMRM MERIT AWARD summa cum laude

Federico C A von Samson-Himmelstjerna[1, 2], Michael A. Chappell[3], Jan Sobesky[2], Matthias Günther[1]

[1]Fraunhofer MEVIS, Bremen, Germany; [2]Center for Stroke Research (CSB), Charité University Medicine Berlin, Berlin, Germany; [3]Institute of Biomedical Engineering & FMRIB Centre, University of Oxford, Oxforshire, United Kingdom

0276. Arterial Spin Labeling Without Control/label Pairing and Post-Labeling Delay: An MR Fingerprinting Implementation

ISMRM MERIT AWARD magna cum laude

Pan Su[1], Deng Mao[1], Peiying Liu[1], Yang Li[1], Babu G. Welch[2], Hanzhang Lu[1]

[1]Advanced Imaging Research Center, The University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Department of Neurological Surgery, The University of Texas Southwestern Medical Center, Dallas, TX, United States

0277. Diffusion Sensitivity of 3D-GRASE in ASL Perfusion

Xiang He[1], Thang Le[2], Hoi-Chung Leung[2], Parsey Ramin[3], Mark Schweitzer[1]

[1]Department of Radiology, Stony Brook University, Stony Brook, NY, United States; [2]Department of Psychology, Stony Brook University, NY, United States; [3]Department of Psychiatry, Stony Brook University, NY, United States

0278. Comparison of Cerebral Blood Flow and Arterial Transit Time Mapping Methods: Look-Locker ASL, Hadamard Encoded ASL, and Multi-TI ASL with Variable Bolus and TR

ISMRM MERIT AWARD magna cum laude

Megan Johnston[1], Youngkyoo Jung[1, 2]

[1]Biomedical Engineering, Wake Forest School of Medicine, Winston-Salem, NC, United States; [2]Radiology, Wake Forest School of Medicine, Winston-Salem, NC, United States

Applications of Quantitative Susceptibility Mapping (QSM)

Room 701 A 10:00-12:00 *Moderators:* Petra Schmalbrock, Ph.D. & Andreas Schäfer, Ph.D.

10:00 0279. Longitudinal Changes of White Matter Following Mild Traumatic Brain Injury by Diffusion, T2 and Susceptibility MRI

Wei Li[1, 2], Justin Long[1], Lora Watts[1], Qiang Shen[1], Timothy Q. Duong[1, 2]

[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Ophthalmology, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

10:12 0280. Magnetic Susceptibilities Measured by Quantitative Susceptibility Mapping (QSM) Indicate Brain Iron Levels Correlate with Genetic Burden in Prodromal Huntington's Disease

ISMRM MERIT AWARD magna cum laude

Jiri M.G. van Bergen[1, 2], Jun Hua[1, 2], Paul G. Unschuld[3, 4], Issel Anne L. Lim[1, 2], Craig K. Jones[1, 2], Russell L. Margolis[4, 5], Christopher A. Ross[4, 5], Peter C.M. van Zijl[1, 2], Xu Li[1, 2]

[1]Radiology, Johns Hopkins School of Medicine, Baltimore, MD, United States; [2]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States; [3]Division of Psychiatry Research and Psychogeriatric Medicine, University of Zurich, Zurich, Switzerland; [4]Psychiatry and Behavioral Sciences, Johns Hopkins School of Medicine, Baltimore, MD, United States; [5]Neurology, Johns Hopkins School of Medicine, Baltimore, MD, United States

10:24 0281. Quantitative Susceptibility Mapping of Lesions in Multiple Sclerosis

Ahmed M. Elkady[1], Hongfu Sun[1], Andrew J. Walsh[1], Gregg Blevins[2], Zhuozhi Dai[1], Alan H. Wilman[1]
[1]Dept. of Biomedical Engineering, University of Alberta, Edmonton, AB, Canada; [2]Division of Neurology, University of Alberta, Edmonton, AB, Canada

10:36 0282. Measurement of the Oxygen Extraction Fraction in Patients with Steno-Occlusive Cerebrovascular Diseases Using Quantitative Susceptibility Mapping at 7T

Ikuko Uwano[1], Makoto Sasaki[1], Kohsuke Kudo[2], Ryota Sato[3], Yuiko Sato[4], Yasushi Ogasawara[4], Hiroaki Saura[4], Kuniaki Ogasawara[4], Taisuke Harada[1], Kenji Ito[1], Fumio Yamashita[1], Jonathan Goodwin[1], Satomi Higuchi[1]
[1]Division of Ultrahigh Field MRI, Institute for Biomedical Sciences, Iwate Medical University, Yahaba, Iwate, Japan; [2]Department of Diagnostic and Interventional Radiology, Hokkaido University Hospital, Sapporo, Hokkaido, Japan; [3]Central Research Laboratory, Hitachi, Ltd., Kokubunji, Tokyo, Japan; [4]Department of Neurosurgery, Iwate Medical University, Morioka, Iwate, Japan

10:48 0283. Quantitative Susceptibility Mapping Displays Pallidofugal Fiber Tracts

Till Schneider[1], Andreas Deistung[2], Uta Biedermann[3], Sabine Heiland[1], Martin Bendszus[1], Jürgen Reichenbach[2]
[1]Neuroradiology, University of Heidelberg, Heidelberg, Germany; [2]Department of Medical Physics, University of Jena, Jena, Germany; [3]Department of Anatomy, University of Jena, Jena, Germany

11:00 0284. Cortical Mapping of Magnetic Susceptibility and R2* Reveals Insights Into Tissue Composition

ISMRM MERIT AWARD magna cum laude

Andreas Deistung[1], Andreas Schäfer[2], Ferdinand Schweser[3, 4], Jürgen Rainer Reichenbach[1]
[1]Medical Physics Group, Institute of Diagnostic and Interventional Radiology, Jena University Hospital - Friedrich Schiller University Jena, Jena, Germany; [2]Department of Neurophysics, Max-Planck-Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; [3]Buffalo Neuroimaging Analysis Center, Dept. of Neurology, School of Medicine and Biomedical Sciences, State University of New York at Buffalo, Buffalo, NY, United States; [4]MRI Molecular and Translational Imaging Center Institution, Buffalo CTRC, State University of New York at Buffalo, Buffalo, NY, United States

11:12 0285. High Conspicuity Imaging and Initial Quantification of the Habenula on 3T QSM Images of Normal Human Brain

John Schenck[1], Dominic Graziani[1], Ek Tsoon Tan[1], Seung-Kyun Lee[1], Luca Marinelli[1], Thomas Foo[1], Christopher Hardy[1], Tian Liu[2], Yi Wang[3]
[1]MRI Laboratory, General Electric Global Research, Schenectady, NY, United States; [2]MedImageMetric, New York, United States; [3]Radiology, Cornell Medical College, New York, United States

11:24 0286. Susceptibility Mapping in Sickle Cell Anaemia Patients with and Without Chronic Blood Transfusions

Karin Shmueli[1], Jamie M. Kawadler[2], David W. Carmichael[2], Chris A. Clark[2], Fenella J. Kirkham[3]
[1]Department of Medical Physics & Biomedical Engineering, University College London, London, United Kingdom; [2]Imaging & Biophysics Unit, UCL Institute of Child Health, London, United Kingdom; [3]Neurosciences Unit, UCL Institute of Child Health, London, United Kingdom

11:36 0287. Whole-Heart Myofiber Tractography Derived from Conjoint Relaxation and Susceptibility Tensor Imaging

ISMRM MERIT AWARD summa cum laude

Russell Dibb[1, 2], Chunlei Liu[3, 4]
[1]Center for In Vivo Microscopy, Duke University Medical Center, Durham, NC, United States; [2]Biomedical Engineering, Duke University, Durham, NC, United States; [3]Brain Imaging & Analysis Center, Duke University Medical Center, Durham, NC, United States; [4]Radiology, Duke University Medical Center, Durham, NC, United States

11:48 0288. Imaging Magnetic Susceptibility of the Human Knee Joint at 3 and 7 Tesla

Hongjiang Wei[1], Bin Wang[1], Xiaopeng Zong[2], Weili Lin[2], Nian Wang[1], Chunlei Liu[1, 3]
[1]Brain Imaging and Analysis Center, Duke University, Durham, NC, United States; [2]Biomedical Research Imaging Center, University of North Carolina at Chapel Hill, NC, United States; [3]Depatment of Radoilogy, School of Medicine, Duke University, NC, United States

Neurovascular & Stroke 2

Room 701 B 10:00-12:00 *Moderators:* Tilak Das, M.D., Ph.D. & T.B.A.

10:00 0289. Perfusion/Diffusion Mismatch in Stroke: What About the Hematocrit?

Benjamin Lemasson[1, 2], Alexis Broisat[3, 4], Ligia S. B. Boisserand[1, 2], Mitra Ahmadi[3, 4], Sandrine Bacot[3, 4], Audrey Soubies[3, 5], Olivier Detante[1, 6], Catherine Ghezzi[3, 4], Chantal Rémy[1, 2], Emmanuel L. Barbier[1, 2]

[1]Inserm, U836, Grenoble, -, France; [2]Univ. Grenoble Alpes, GIN, Grenoble, -, France; [3]Inserm, U1039, Grenoble, -, France; [4]Univ. Grenoble Alpes, Radiopharmaceutiques Biocliniques, Grenoble, -, France; [5]Univ. Grenoble Alpes, Radiopharmaceutiques Biocliniques, Grenoble, -, France; [6]CHU de Grenoble, GIN, Grenoble, -, France

10:12 0290. Towards Characterization of the Cerebral Venous Vessel Network Using QSM: Extraction of Vessel Radii and Lengths

Barthélemy Serres[1], Andreas Deistung[1], Andreas Schäfer[2], Marek Kocinski[3], Andrzej Materka[3], Jürgen Reichenbach[1]

[1]Medical Physics Group, Institute for Diagnosis and Interventional Radiology, University Hospital Jena - Friedrich Schiller University Jena, Jena, Germany; [2]Max Plank Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; [3]University of Lodz, Lodz, Poland

10:24 0291. Estimation of a PET AIF Using DSC MRI

John Lee[1], Colin Derdeyn[1], Joshua Shimony[1]

[1]Washington University School of Medicine, Saint Louis, MO, United States

10:36 0292. High-Speed, High-Resolution Whole-Head Sparse Contrast-Enhanced MR Angiography

Aurelien F. Stalder[1], Harald H. Quick[2, 3], Michael O. Zenge[4], Peter Schmitt[1], Qiu Wang[5], Marc Schlamann[6], Stefan Maderwald[2], Mariappan Nadar[5], Michaela Schmidt[1]

[1]Siemens Healthcare, Erlangen, Germany; [2]Erwin L. Hahn Institute for MR Imaging, University of Duisburg-Essen, Germany; [3]High Field and Hybrid MR Imaging, University Hospital Essen, Germany; [4]Siemens Healthcare, NY, United States; [5]Imaging and Computer Vision, Siemens Corporate Technology, NJ, United States; [6]Department of Diagnostic and Interventional Radiology and Neuroradiology, University Hospital Essen, Germany

10:48 0293. Exploring the Limits of Resolution in Contrast Enhanced MRA with Ultrashort Echo Time Imaging

Kevin Michael Johnson[1], Yijing Wu[1], Patrick A. Turski[2]

[1]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States; [2]Radiology, University of Wisconsin-Madison, Madison, WI, United States

11:00 0294. Detection of Intracranial Vessel Wall Lesions in an Elderly Asymptomatic Population Using 7T MRI

A.A. Harteveld[1], A.G. van der Kolk[1], H.B. van der Worp[2], N. Dieleman[1], F. Visser[1, 3], P.R. Luijten[1], J.J.M. Zwanenburg[1, 4], J. Hendrikse[1]

[1]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]Department of Neurology and Neurosurgery, University Medical Center Utrecht, Utrecht, Netherlands; [3]Philips Healthcare, Best, Netherlands; [4]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands

11:12 0295. Cerebral Venous Thrombosis: Direct Thrombus Imaging with Sub-Millimeter Isotropic Resolution Dark-Blood MRI

Zhaoyang Fan[1], Qi Yang[1, 2], Xiaofeng Qu[1, 3], Yibin Xie[1, 4], Guoxi Xie[5], Tianyi Qian[6], Xiaoming Bi[7], Yutaka Natsuaki[7], Debiao Li[1]

[1]Biomedical Imaging Research Institute, Cedars-Sinai Medical Center, Los Angeles, CA, United States; [2]Radiology, Xuanwu Hospital, Beijing, China; [3]Radiology, The Second Hospital OF Dalian Medical University, Dalian, China; [4]Bioengineering, University of California, Los Angeles, CA, United States; [5]Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Guangdong, China; [6]MR Collaboration NE Asia, Siemens Healthcare, Beijing, China; [7]MR R&D, Siemens Healthcare, Los Angeles, CA, United States

11:24 0296. A One-Stop-Shop for Hemodynamic Imaging in Moyamoya Disease

Peiying Liu[1], Babu G. Welch[2], Darlene King[2], Yang Li[1], Marco Pinho[1, 3], Hanzhang Lu[1]

[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Neurological Surgery Clinic, University of Texas Southwestern Medical Center, Dallas, TX, United States; [3]Department of Radiology, University of Texas Southwestern Medical Center, TX, United States

11:36 0297. Intravoxel Incoherent Motion Imaging Exposes Abnormal Parenchyma and Microvasculature in Cerebral Small Vessel Disease

Sau May Wong[1], Eleana Zhang[2], Frank C.G. Bussel[1], Julie E.A. Staals[2], Cécile R.L.P.N. Jeukens[1], Paul A.M. Hofman[1], Robert J. van Oostenbrugge[2], Walter H. Backes[1], Jacobus F.A. Jansen[1]
[1]Radiology, Maastricht University Medical Center, Maastricht, Limburg, Netherlands; [2]Neurology, Maastricht University Medical Center, Maastricht, Limburg, Netherlands

11:48 0298. Transient Cerebral Ischemia in Rodents Exposed to Chronic Intermittent Hypoxia

ISMRM MERIT AWARD magna cum laude

Bianca Gonzales Cerqueira[1], Yuhao Sun[1], Shiliang Huang[1], Glenn Toney[2], Timothy Q. Duong[1]
[1]Research Imaging Institute, Univ. of TX Health Science Center, San Antonio, TX, United States; [2]Physiology, Univ. of TX Health Science Center, TX, United States

Implantable Medical Devices & Modelling

Room 714 A/B 10:00-12:00 *Moderators:* T.B.A. & T.B.A.

10:00 0299. Subject Specific Body Model Creation Using MR Fingerprinting

Leeor Alon[1, 2], Martijn Cloos[1, 2], Assaf Tal[3], Daniel K. Sodickson[1, 2], Christopher M. Collins[1, 2]
[1]Center for Advanced Imaging Innovation and Research (CAI2R), New York University School of Medicine, New York, NY, United States; [2]Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States; [3]Weizmann Institute, Rehovot, Israel

10:12 0300. Analysis of DNA Double-Strand Breaks in Human Peripheral Blood Mononuclear Cells After Exposure to 7T MRI

ISMRM MERIT AWARD magna cum laude

Mahsa Fatahi[1], Annika Reddig[2], Bjoern Friebe[3], Dirk Reinhold[2], Oliver Speck[1]
[1]Department of Biomedical Magnetic Resonance, Otto-von-Guericke-University Magdeburg, Magdeburg, Germany; [2]Institute of Molecular and Clinical Immunology, Otto-von-Guericke-University Magdeburg, Germany; [3]Department of Radiology and Nuclear Medicine, Otto-von-Guericke-University Magdeburg, Germany

10:24 0301. Simplified Computational Models of Medical Devices for Accurate RF Heating Simulations with Significantly Reduced Computational Cost

Alan Ross Leewood[1], Beth J. Hess[1], Matthew Huser[1], Sharath Gopal[1], Gonzalo G. Mendoza[2], Maria Ida Iacono[2], Wolfgang Kainz[2], Sunder S. Rajan[2], Leonardo M. Angelone[2]
[1]MED Institute, Inc., West Lafayette, IN, United States; [2]Center for Devices and Radiological Health, U.S. Food and Drug Administration, Silver Spring, MD, United States

10:36 0302. What Is the SAR for Routine Clinical MRI Exams at 1.5T?

Deborah Anne Langman[1], Subashini Srinivasan[1, 2], Daniel B. Ennis[1, 2]
[1]Radiological Sciences, UCLA, Los Angeles, CA, United States; [2]Bioengineering, UCLA, Los Angeles, CA, United States

10:48 0303. Ensuring Safety and Functionality of Electroglottography Measurements During Lung MRI

Ali Caglar Ozen[1], Louisa Traser[2, 3], Tetiana Dadakova[1], Michael Burdumy[1], Matthias Echternach[4], Michael Bock[1]
[1]Department of Radiology, Medical Physics, University Medical Center, Freiburg, Germany; [2]Institute of Musicians Medicine, University Medical Center , Freiburg, Germany; [3]Department of Otolaryngology, University Medical Center Freiburg, Germany; [4]Institute of Musicians Medicine, University Medical Center, Freiburg, Germany

11:00 0304. From Real-Time SAR Assessment to Temperature Distributions in Coronary Stents at 7T

ISMRM MERIT AWARD magna cum laude

Lukas Winter[1], Eva Oberacker[1], Celal Özerdem[1], Yiyi Ji[1], Florian von Knobelsdorff-Brenkenhoff[1, 2], Gerd Weidemann[3], Bernd Ittermann[3], Frank Seifert[3], Thoralf Niendorf[1, 2]
[1]Berlin Ultrahigh Field Facility (B.U.F.F.), Max-Delbrück Center for Molecular Medicine, Berlin, Germany; [2]Experimental and Clinical Research Center (ECRC), a joint cooperation between the Charité and the Max-Delbrueck Center for Molecular Medicine, Berlin, Germany; [3]Physikalisch Technische Bundesanstalt (PTB), Braunschweig and Berlin, Germany

11:12 0305. Comprehensive Analysis of Temperature Rise Generated by a Titanium Rod Inside 1.5T MRI RF Whole Body Coil

Mikhail Kozlov[1, 2], Gregor Schaefers[1]
[1]MR:comp GmbH, Gelsenkirchen, North Rhine Westphalia, Germany; [2]MPI, Leipzig, Saxony, Germany

11:24 0306. A Quadraure RF Coil with Reduced Heating of DBS Implants

Hai Lu[1], Shumin Wang[1]
[1]Auburn University, Auburn, AL, United States

11:36 0307. A System for Attenuating and Monitoring Acoustic Noise During Infant MRI Studies

Michael Valente[1, 2], Lei Zhou[3], Longchuan Li[1, 2], Sarah Shultz[1, 2], Xiaoping Hu[3]
[1]Pediatrics, Emory University, Atlanta, GA, United States; [2]Marcus Autism Center, Children's Healthcare of Atlanta, Atlanta, GA, United States; [3]Biomedical Engineering, Emory University, Atlanta, GA, United States

11:48 0308. An Assessment of Radio Frequency Induced Heating of a Vascular Stent During Magnetic Resonance Imaging of a Pig

David C. Gross[1, 2], Orlando P. Simonetti[3, 4]
[1]Biomedical Engineering, The Ohio State University, Columbus, OH, United States; [2]Dorothy M. Davis Heart and Lung Research Institute, The Ohio State University, Columbus, OH, United States; [3]Internal Medicine, Division of Cardiovascular Medicine, The Ohio State University, Columbus, OH, United States; [4]Radiology, The Ohio State University, Columbus, OH, United States

Translations MR Imaging of Musculoskeletal Physiology

Room 716 A/B 10:00-12:00 *Moderators:* Edwin H. G. Oei, M.D., Ph.D. & T.B.A.

10:00 0309. UTE 3D Cones Trajectory with T1ρ Weighted Imaging for MSK Applications

Robert Nikolov[1], Michael Carl[2], Eric Chang[1, 3], Christine Chung[1, 3], Graeme Bydder[1], Jiang Du[1]
[1]Radiology, University of California, San Diego, San Diego, CA, United States; [2]GE Healthcare, Waukesha, WI, United States; [3]Radiology, VA San Diego Healthcare System, La Jolla, CA, United States

10:12 0310. A Mechanism for Quantifiable MRI-Based Detection of Cobalt-Chromium Particulate Deposits Near Total Hip Replacements

Kevin M. Koch[1], Matthew F. Koff[2], Parina Shah[2], Hollis G. Potter[2, 3]
[1]Biophysics and Radiology, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Radiology and Imaging, Hospital for Special Surgery, NYC, NY, United States; [3]Weill Cornell Medical College of Cornell University, NYC, NY, United States

10:24 0311. Direct Visualization of Cartilage Delamination in FAI at 3T Using Multiband Acceleration

Jutta Ellermann[1], Abraham Padua[2], Edward Auerbach[1], Dingxin Wang, [13]
[1]CMRR, Department of Radiology, University of Minnesota, Minneapolis, MN, United States; [2]Siemens Healthcare, Houston, TX, United States; [3]Siemens Healthcare, Minneapolis, MN, United States

10:36 0312. Quantitative Assessment of the Normal and Abnormal Achilles Tendon *In Vivo* Using a 3D Cones Sequence

ISMRM MERIT AWARD magna cum laude

Hongda Shao[1], Michael Carl[2], Eric Chang[1], Christine B. Chung[1], Graeme M. Bydder[1], Jiang Du[1]
[1]Radiology, University of California, San Diego, CA, United States; [2]GE Healthcare, San Diego, CA, United States

10:48 0313. High-Resolution 3D MR Neurography of the Wrist Using Phase-Cycling Diffusion-Sensitized Driven-Equilibrium (PcDSDE)

Masami Yoneyama[1], Makoto Obara[1], Yuriko Ozawa[2], Hajime Tanji[3], Masanobu Nakamura[1], Tomoyuki Okuaki[1], Takashi Tabuchi[2], Satoshi Tatsuno[2], Ryuji Sashi[2], Marc Van Cauteren[1]
[1]Philips Electronics Japan, Tokyo, Japan; [2]Yaesu Clinic, Tokyo, Japan; [3]Imaging Center, Kita-Fukushima Medical Center, Fukushima, Japan

11:00 0314. Removing the Confounding Effect of the Fat Component in ADC Quantification of the Vertebral Bone Marrow Water Component

ISMRM MERIT AWARD magna cum laude

Michael Dieckmeyer[1], Stefan Ruschke[1], Holger Eggers[2], Hendrik Kooijman[3], Ernst J. Rummeny[1], Jan S. Bauer[4], Thomas Baum[1], Dimitrios C. Karampinos[1]
[1]Diagnostic and Interventional Radiology, Technische Universität München, Munich, Germany; [2]Philips Research Laboratory, Hamburg, Germany; [3]Philips Healthcare, Hamburg, Germany; [4]Diagnostic and Interventional Neuroradiology, Technische Universität München, Munich, Germany

11:12 **0315.** **Assessment of Extracellular Matrix Degradation in Intervertebral Disc Degeneration by Diffusion Weighted MRS and Chemical Exchange Saturation Transfer**

ISMRM MERIT AWARD summa cum laude

Anna M. WANG[1, 2], Adrian Tsang[1, 2], Ed X. Wu[1, 2]
[1]Laboratory of Biomedical Imaging and Signal Processing, Hong Kong, Hong Kong; [2]Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, Hong Kong

11:24 **0316.** **T1ρ and T2-Based Quantitative Technique for Characterization of Regional Variations in Intervertebral Discs to Detect Early Degenerative Changes.**

ISMRM MERIT AWARD magna cum laude

Prachi Pandit[1], Martin Kretzschmar[1], Valentina Pedoia[1], William Dillon[1], Sharmila Majumdar[1]
[1]Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States

11:36 **0317.** **Assessment of Glycosaminoglycan Content in Lumbar Intervertebral Discs with Chemical Exchange Saturation Transfer Imaging: Comparison with T1-Rho Measurement**

Osamu Togao[1], Akio Hiwatashi[1], Tatsuhiro Wada[2], Koji Yamashita[1], Kazufumi Kikuchi[1], Chiaki Tokunaga[2], Yuriko Suzuki[3], Jochen Keupp[4], Hiroshi Honda[1]
[1]Clinical Radiology, Graduate School of Medical Sciences, Kyushu University, Fukuoka, Japan; [2]Division of Radiology, Department of Medical Technology, Kyushu University Hospital, Fukuoka, Japan; [3]Philips Electronics Japan, Tokyo, Japan; [4]Philips Research, Hamburg, Germany

11:48 **0318.** **Spatial Maps of DCEMRI Enhancement in Endplates of Degenerating Intervertebral Discs Reveal Major Pathologic Changes**

Volkan Emre Arpinar[1], Ali Ersoz[2], L Tugan Muftuler[1, 3]
[1]Department of Neurosurgery, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Department of Boiphysics, Medical College of Wisconsin, WI, United States; [3]Center for Imaging Research, Medical College of Wisconsin, WI, United States

It's a Polarized World

Constitution Hall 107 10:00-12:00 *Moderators:*T.B.A. & T.B.A.

10:00 **0319.** **Resonance Frequency-Shifting Nitroxide for Probing Proteolytic Activity *In Vivo* Using the Overhauser-Enhanced MRI Technique**

ISMRM MERIT AWARD summa cum laude

Neha KOONJOO[1], Gérard Audran[2], Lionel Bosco[2], Paul Brémond[2], Elodie Parzy[1], Philippe Massot[1], Matthieu Lepetit-Coiffé[1, 3], Jean-Michel Franconi[1], Sylvain R.A Marque[2], Eric Thiaudière[1], Philippe Mellet[1, 4]
[1]Centre de Résonance Magnétique des Systèmes Biologiques, Bordeaux, France, Metropolitan; [2]UMR 7273 Aix-Marseille Université, Marseille, France, Metropolitan; [3]Siemens, Saint-Denis, France, Metropolitan; [4]INSERM, Université de Bordeaux Segalen, Bordeaux, France, Metropolitan

10:12 **0320.** **Dynamic *In Vivo* Free Radical Imaging with Overhauser-Enhanced MRI**

Mathieu Sarracanie[1, 2], Fanny Herisson[3], Najat Salameh[1, 2], David E J Waddington[1, 4], Cenk Ayata[3], Matthew S. Rosen[1, 2]
[1]MGH/A.A. Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [2]Department of Physics, Harvard University, Cambridge, MA, United States; [3]Neurovascular Research Lab, Department of Radiology, Massachusetts General Hospital, Charlestown, United States; [4]ARC Center for Engineered Quantum Systems, School of Physics, University of Sydney, Sydney, NSW, Australia

10:24 **0321.** **Towards Targeted Molecular Imaging of Colorectal Cancer by Hyperpolarized Silicon Particles Functionalized with Mucin Antibody**

ISMRM MERIT AWARD magna cum laude

Jingzhe Hu[1, 2], Nicholas Whiting[3], Pamela Constantinou[4], Niki Zacharias Millward[3], David Menter[5], Daniel Carson[4], Pratip Bhattacharya[3]
[1]Bioengineering, Rice University, Houston, TX, United States; [2]MD Anderson Cancer Center, Houston, TX, United States; [3]Cancer Systems Imaging, MD Anderson Cancer Center, Houston, TX, United States; [4]BioSciences, Rice University, Houston, TX, United States; [5]Cancer Biology, MD Anderson Cancer Center, Houston, TX, United States

10:36 **0322.** **The Tumor Exception That Proves the Rule: Hyperpolarized ^{13}C MRS Cannot Be Used to Detect the Presence of Mutant IDH1 Glioma or Their Responses to Temozolomide Therapy**

Myriam Marianne Chaumeil[1], Marina Radoul[1], Pia Eriksson[1], Michael D. Blough[2], Charles Cheneslong[2], Russell O. Pieper[3, 4], Joanna J. Phillips[3, 4], J Gregory Cairncross[2], Sabrina M. Ronen[1, 4]
[1]Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [2]Clinical Neurosciences, University of Calgary, Calgary, Alberta, Canada; [3]Neurological Surgery, University of California San Francisco, San

Francisco, CA, United States; [4]Brain Tumor Research Center, University of California San Francisco, San Francisco, CA, United States

10:48 0323. Application of Good's Buffers to PH Imaging Using Hyperpolarized 13C-MRI

Robert R. Flavell[1], David Korenchan[1], Cornelius von Morze[1], Mark Van Criekinge[1], Renuka Sriram[1], Sukumar Subramaniam[1], Robert Bok[1], Joseph Blecha[1], Daniel Vigneron[1], Peder Larson[1], Kayvan R. Keshari[2], John Kurhanewicz[1], David M. Wilson[1]

[1]Radiology and biomedical imaging, University of California, San Francisco, San Francisco, CA, United States; [2]Memorial Sloan-Kettering Cancer Center, New York, NY, United States

11:00 0324. Dynamic Imaging of Hyperpolarized ^{6}Li Cerebral Distribution at Pharmacological Concentration

Mor Mishkovsky[1], Andrea Capozzi[2], Najat Salameh[2], Jean-Noel Hyacinthe[3], Rolf Gruetter[1, 4], Arnaud Comment[2]

[1]Laboratory of Functional and Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; [2]Institute of the Physics of Biological Systems, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; [3]Haute Ecole de Santé, University of Applied Sciences Western Switzerland, Geneva, Switzerland; [4]Center of biomedical imaging (CIBM), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland

11:12 0325. Effect of Epinephrine on Metabolism of HP [1-^{13}C]pyruvate in Low-Flow Myocardial Ischemia

Chalermchai Khemtong[1], Wei Chen[1], Weina Jiang[1], Craig R. Malloy[1, 2], A. Dean Sherry[1, 3]

[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Veterans Affairs North Texas Health Care System, Dallas, TX, United States; [3]Chemistry, University of Texas at Dallas, Richardson, TX, United States

11:24 0326. Flow-Sensitizing Gradients for First-Pass Perfusion Imaging Using Hyperpolarized 13C Urea in the Rat Heart

Angus Z. Lau[1, 2], Jack J. Miller[2, 3], Damian J. Tyler[1, 2]

[1]Department of Cardiovascular Medicine, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]Department of Physiology, Anatomy, and Genetics, University of Oxford, Oxford, Oxfordshire, United Kingdom; [3]Department of Physics, University of Oxford, Oxford, Oxfordshire, United Kingdom

11:36 0327. Metabolic Flux Analysis of Hepatic Mitochondrial Oxidation of Hyperpolarized [1-^{13}C] and [2-^{13}C] Pyruvate *In Vivo*

ISMRM MERIT AWARD magna cum laude

Emine Can[1], Jessica A.M. Bastiaansen[2, 3], Hikari A.I. Yoshihara[1, 4], Rolf Gruetter[5, 6], Arnaud Comment[1]

[1]Institute of Physics of Biological Systems, EPFL, Lausanne, Switzerland; [2]Department of Radiology, University Hospital Lausanne (CHUV) and University of Lausanne (UNIL), Lausanne, Switzerland; [3]Center for Biomedical Imaging (CIBM), Lausanne, Switzerland; [4]Department of Cardiology, University Hospital Lausanne (CHUV), Lausanne, Switzerland; [5]Laboratory for Functional and Metabolic Imaging, EPFL, Lausanne, Switzerland; [6]Department of Radiology, University of Lausanne, University of Geneva, Switzerland

11:48 0328. Detection of Lung Mitochondrial Dysfunction Using Hyperpolarized [1-13C] Pyruvate Metabolism

Hoora Shaghaghi[1], Stephen Kadlecek[1], Mehrdad Pourfathi[1], Sarmad Siddiqui[1], Maurizio Cereda[2], Hooman Hamedani[1], Harrilla Profka[1], Yi Xin[1], Rahim R. Rizi[1]

[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Anesthesiology and Critical Care, University of Pennsylvania, Philadelphia, PA, United States

Parametric Mapping

John Bassett Theatre 102 10:00-12:00 *Moderators:* Mariya Doneva, Ph.D. & Diego Hernando, Ph.D.

10:00 0329. Magnetic Resonance Fingerprinting with Chemical Exchange (MRF-X) for Quantification of Subvoxel T1, T2, Volume Fraction, and Exchange Rate

Jesse I. Hamilton[1], Anagha Deshmane[1], Stephanie Hougen[2], Mark Griswold, [13], Nicole Seiberlich[1, 3]

[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Physics, Case Western Reserve University, Cleveland, OH, United States; [3]Radiology, Case Western Reserve University, Cleveland, OH, United States

10:12 0330. Magnetic Resonance Fingerprint Compression

ISMRM MERIT AWARD summa cum laude

Martijn A. Cloos[1, 2], Tiejun Zhao, [23], Florian Knoll[1, 2], Leeor Alon[1, 2], Riccardo Lattanzi[1, 2], Daniel K. Sodickson[1, 2]

[1]Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States; [2]Center for Advanced Imaging Innovation and Research (CAI2R), New York University School of Medicine, New York, NY, United States; [3]Siemens Medical Solutions USA Inc., Malvern, PA, United States

10:24 0331. Fast and Direct Generation of Encoding Gradients for the MRF-Music Acquisition

ISMRM MERIT AWARD magna cum laude

Dan Ma[1], Mark Griswold[2]
[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Radiology, Case Western Reserve University, OH, United States

10:36 0332. A Fast Simultaneous Water/fat Decomposition and T1, T2 Quantification Method Using Dual TR BSSFP

ISMRM MERIT AWARD summa cum laude

Dongyeob Han[1], Min-Oh Kim[1], Dosik Hwang[1], Dong-Hyun Kim[1]
[1]Yonsei University, Seoul, Korea

10:48 0333. Simultaneous Frequency and T2 Mapping, Applied to Thermometry and to Susceptibility-Weighted Imaging

Cheng-Chieh Cheng[1], Chang-Sheng Mei[2], Pelin Aksit Ciris[3, 4], Robert V. Mulkern, [45], Mukund Balasubramanian, [45], Hsiao-Wen Chung[1], Tzu-Cheng Chao[6], Lawrence P. Panych[3, 4], Bruno Madore[3, 4]
[1]Graduate Institute of Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan; [2]Department of Physics, Soochow University, Taipei, Taiwan; [3]Department of Radiology, Brigham and Women's Hospital, Boston, MA, United States; [4]Harvard Medical School, Boston, MA, United States; [5]Department of Radiology, Boston Children's Hospital, Boston, MA, United States; [6]Department of Computer Science and Information Engineering, National Cheng-Kung University, Tainan, Taiwan

11:00 0334. K-Space Based Estimation for R2* Mapping

Giang Chau Ngo[1, 2], Bradley P. Sutton, [12]
[1]Bioengineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana-Champaign, Urbana, IL, United States

11:12 0335. High Resolution Water/Fat Imaging in Animal Models

Abraam S. Soliman[1, 2], Lanette J. Friesen-Waldner[3], Kevin J. Sinclair[3], Timothy R.H Regnault[4, 5], Charles A. McKenzie, [13]
[1]Biomedical Engineering, University of Western Ontario, London, Ontario, Canada; [2]Imaging Research Laboratories, Robarts Research Institute, London, Ontario, Canada; [3]Medical Biophysics, University of Western Ontario, London, Ontario, Canada; [4]Obstetrics and Gynaecology, University of Western Ontario, London, Ontario, Canada; [5]Physiology and Pharmacology, University of Western Ontario, London, Ontario, Canada

11:24 0336. *In Vivo* Assessment of Cold Stimulation Effects on the Fat Fraction of Brown Adipose Tissue Using Dixon MRI

ISMRM MERIT AWARD summa cum laude

Vanessa Stahl[1], Florian Maier[1], Ralf O. Floca[2], Moritz C. Berger[1], Mauricio Berriel Diaz[3], Martin T. Freitag[2], Marc-André Weber[4], Antonia Dimitrakopoulou-Strauss[5], Armin M. Nagel[1]
[1]Medical Physics in Radiology, German Cancer Research Center, Heidelberg, Germany; [2]Department of Radiology, German Cancer Research Center, Heidelberg, Germany; [3]Molecular Metabolic Control, German Cancer Research Center, Heidelberg, Germany; [4]Diagnostic and Interventional Radiology, University Hospital of Heidelberg, Heidelberg, Germany; [5]Clinical Cooperation Unit Nuclear Medicine, German Cancer Research Center, Heidelberg, Germany

11:36 0337. Bias in Liver Fat Quantification Using Chemical Shift-Encoded Techniques with Short Echo Times

Diego Hernando[1], Utaroh Motosugi[1, 2], Scott B. Reeder[1, 3]
[1]Radiology, University of Wisconsin-Madison, Madison, WI, United States; [2]Radiology, University of Yamanashi, Yamanashi, Japan; [3]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States

11:48 0338. Comparison of T2* Correction Methods for Vertebral Bone Marrow Fat Quantification Using Chemical Shift Encoding-Based Water-Fat Imaging

Dimitrios C. Karampinos[1], Stefan Ruschke[1], Michael Dieckmeyer[1], Holger Eggers[2], Hendrik Kooijman[3], Ernst J. Rummeny[1], Jan S. Bauer[4], Thomas Baum[1]
[1]Diagnostic and Interventional Radiology, Technische Universität München, Munich, Germany; [2]Philips Research Laboratory, Hamburg, Germany; [3]Philips Healthcare, Hamburg, Germany; [4]Neuroradiology, Technische Universität München, Munich, Germany

Educational Course
MRI in the Emergency Room

Organizers: Lorenzo Mannelli, M.D., Ph.D., Ivan Pedrosa, M.D., Scott B. Reeder, M.D., Ph.D. & Edwin J.R. van Beek, M.D., Ph.D., M.Ed., FRCR

Room 718 A 10:00-12:00 *Moderators:* Michele A. Brown, M.D. & Michael D. Repplinger, M.D., M.S.

10:00 **Rapid MRI Protocols & Acquisitions for Emergency Patients**
Martin P. Smith

10:30 **Acute Abdomen/Appendicitis**
Bobby T. Kalb

11:00 **Pulmonary MRA**
Christopher J. François

11:30 **MRV**
Shreyas S. Vasanawala

12:00 **Adjournment & Meet the Teachers**

Educational Course
Analyze This! Practicalities of fMRI & Diffusion Data Analysis

Organizers: Daniel C. Alexander, Ph.D., Adam W. Anderson, Ph.D., Peter Jezzard, Ph.D., James J. Pekar, Ph.D., Jonathan R. Polimeni, Ph.D., Stamatios Sotiropoulos, Ph.D. & Eric C. Wong, M.D., Ph.D.

Room 718 B 10:00-12:00 *Moderators:* Peter A. Bandettini, Ph.D. & Claudia A. Wheeler-Kingshott, Ph.D.

10:00 **Introduction & Overview**

fMRI Analysis

10:05 **fMRI Analysis Using FSL**
Stephen M. Smith

10:15 **fMRI Analysis Using SPM**
Thomas Zeffiro

10:25 **fMRI Analysis Using AFNI**
Ziad S. Saad

10:35 **Discussion**

Diffusion Analysis

11:00 **Diffusion Analysis Using FSL**
Michiel Cottaar, Ph.D.

11:08 **Diffusion Analysis Using Camino**
Philip A. Cook

11:16 **Diffusion Analysis Using MR Trix**
Jacques-Donald Tournier

11:24 **Diffusion Analysis Using Track Vis**
Brian L. Edlow

11:32 **Diffusion Analysis Using MRI Studio**
Susumu Mori

11:40 **Discussion**

12:00 **Adjournment & Meet the Teachers**

Educational Course
Research Meets Clinical: Incidental Findings

Room 801 A/B 10:00-12:00

10:00 **Expert Panelists**
Blair Henry
Ben Allen Kennedy
Paul M. Matthews
Josef P. Debbins
Greg Zaharchuk

12:00 **Adjournment & Meet the Teachers**

Gold Corporate Symposium
Siemens Healthcare GmbH Gold Corporate Symposia

Plenary Hall FG 12:15-13:15 *(no CME credit)*

Traditional Poster Session: Relaxation

Exhibition Hall 13:30-15:30 *(no CME credit)*

Traditional Poster Session: Magnetic Susceptibility

Exhibition Hall 13:30-15:30 *(no CME credit)*

Traditional Poster Session: Magnetization Transer

Exhibition Hall 13:30-15:30 *(no CME credit)*

Electronic Poster Session: Pulse Sequence B

Exhibition Hall 13:30-15:30 *(no CME credit)*

Study Group Session
MR Flow & Motion Quantitation

Reception Hall 104 BCD 13:30-15:30 *(no CME credit)*

Study Group Session
High Field Systems & Applications

Constitution Hall 105 13:30-15:30 *(no CME credit)*

Power Pitches: The Cutting Edge of Diffusion MRI

Power Pitch Theatre, Exhibition Hall 13:30-14:30 *(no CME credit)*

Moderators: Helen Zhou, Ph.D. & David Raffelt, Ph.D.

13:30 **0339.** **SLIce Dithered Enhanced Resolution Simultaneous MultiSlice (SLIDER-SMS) for High Resolution (700 Um) Diffusion Imaging of the Human Brain**
Kawin Setsompop[1], Berkin Bilgic[1], Aapo Nummenmaa[1], Qiuyun Fan[1], Stephen F. Cauley[1], Susie Huang[1], Itthi Chatnuntawech[2], Yogesh Rathi[3], Thomas Witzel[1], Lawrence L. Wald[1]
[1]Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [2]Massachusetts Institute of Technology, Cambridge, MA, United States; [3]Brigham and Women's Hospital, Boston, MA, United States

13:31 **0340.** **Higher-Order Spin-Echo Selection for Reduced FOV Diffusion Imaging of the Brainstem at 7T**
Bertram Jakob Wilm[1], Signe Johanna Vannesjo[1], Klaas Paul Pruessmann[1]
[1]University and ETH Zurich, Zurich, Switzerland

13:32 **0341.** **Navigated PSF Mapping for Distortion-Free High-Resolution *In-Vivo* Diffusion Imaging at 7T**
Myung-Ho In[1], Posnansky Oleg[1], Oliver Speck[1]
[1]Biomedical Magnetic Resonance, Otto-von-Guericke University, Magdeburg, Germany

13:33 **0342.** **Compressed-Sensing-Accelerated Spherical Deconvolution**
Jonathan I. Sperl[1], Tim Sprenger, [12], Ek T. Tan[3], Marion I. Menzel[1], Christopher J. Hardy[3], Luca Marinelli[3]
[1]GE Global Research, Munich, BY, Germany; [2]IMETUM, Technical University Munich, Munich, BY, Germany; [3]GE Global Research, Niskayuna, NY, United States

13:34 **0343.** **3D Myofiber Reconstruction from *In Vivo* Cardiac DTI Data Through Extraction of Low Rank Modes**
Martin Genet[1], Constantin von Deuster[1, 2], Christian T. Stoeck[1, 2], Sebastian Kozerke[1, 2]
[1]Institut for Biomedical Engineering, ETHZ, Zurich, Switzerland; [2]Imaging Sciences and Biomedical Engineering, KCL, London, United Kingdom

13:35 **0344.** ***In Vivo* and *Ex Vivo* Characterization of Extracellular Space (ECS) in Mouse GBM Using PGSE and OGSE**
ISMRM MERIT AWARD magna cum laude
Olivier Reynaud[1, 2], Kerryanne V. Winters[1, 2], Dung Minh Hoang[1, 2], Youssef Zaim Wadghiri[1, 2], Dmitry S. Novikov[1, 2], Sungheon Gene Kim[1, 2]
[1]Center for Advanced Imaging Innovation and Research (CAI2R), Department of Radiology, New York University School of Medicine, New York, NY, United States; [2]Bernard and Irene Schwartz Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States

13:36 **0345.** **Detection of Curvature and Microscopic Anisotropy of Neurites at Short Length Scales**
Jonathan Scharff Nielsen[1], Tim B. Dyrby[1], Henrik Lundell[1]
[1]Danish Research Centre for Magnetic Resonance, Copenhagen University Hospital Hvidovre, Hvidovre, Denmark

13:37 **0346.** **Assessing Diffusion Time Effects on Microstructural Comparment Estimates in Human White Matter Using 7T DwSTEAM**
ISMRM MERIT AWARD summa cum laude
Silvia De Santis[1, 2], Derek K. Jones[1], Alard Roebroeck[2]
[1]CUBRIC Cardiff University, Cardiff, United Kingdom; [2]Maastricht University, Maastricht, Netherlands

13:38 **0347.** **Why Should Axon Diameter Mapping Use Low Frequency OGSE? Insight from Simulation**
Ivana Drobnjak[1], Hui Zhang[1], Andrada Ianus[1], Enrico Kaden[1], Daniel C. Alexander[1]
[1]Centre for Medical Image Computing, Department of Computer Science, University College London, London, United Kingdom

13:39 **0348.** **Evaluating a Semi-Continuous Multi-Compartmental Intra-Voxel Incoherent Motion (IVIM) Model in the Brain: How Does the Method Influence the Results in IVIM?**
Vera Catharina Keil[1], Burkhard Maedler[2], Hans Heinz Schild[1], Dariusch Reza Hadizadeh[1]
[1]Radiology, UK Bonn, Bonn, NRW, Germany; [2]Radiology MRI Unit, PHILIPS Healthcare, Hamburg, Germany

13:40 **0349.** **Tissue-Type Segmentation Using Non-Negative Matrix Factorization of Multi-Shell Diffusion-Weighted MRI Images**
ISMRM MERIT AWARD summa cum laude
Ben Jeurissen[1], Jacques-Donald Tournier[2, 3], Jan Sijbers[1]
[1]iMinds-Vision Lab, Dept. of Physics, University of Antwerp, Antwerp, Belgium; [2]Centre for the Developing Brain, King's College London, London, United Kingdom; [3]Dept. of Biomedical Engineering, King's College London, London, United Kingdom

13:41 **0350.** **On Evaluating the Accuracy and Biological Plausibility of Diffusion MRI Tractograms**
ISMRM MERIT AWARD summa cum laude
David Romascano[1], Alessandro Dal Palú[2], Jean-Philippe Thiran[1, 3], Alessandro Daducci[1, 4]
[1]Signal Processing Laboratory (LTS5), École Polytechnique Fédérale de Lausanne, Lausanne, Vaud, Switzerland; [2]Department of Mathematics and Computer Science, University of Parma, Parma, Italy; [3]Department of Radiology, University Hospital Center and University of Lausanne, Lausanne, Vaud, Switzerland; [4]Center for Biomedical Imaging, Signal Processing Core,, Lausanne, Vaud, Switzerland

13:42 **0351.** **A Generative Model of White Matter Axonal Orientations Near the Cortex**
Michiel Cottaar[1], Saad Jbabdi[1], Matthew F. Glasser[2], Krikor Dikranian[2], David C. van Essen[2], Timothy E. Behrens[1], Stamatios N. Sotiropoulos[1]
[1]FMRIB Centre, University of Oxford, Oxford, United Kingdom; [2]Washington University School of Medicine, Saint Louis, MO, United States

13:43 **0352.** **Dynamic' Seeding: Informed Placement of Streamline Seeds in Whole-Brain Fibre-Tracking**
ISMRM MERIT AWARD magna cum laude
Robert Elton Smith[1], J-Donald Tournier[2, 3], Fernando Calamante[1, 4], Alan Connelly[1, 4]
[1]Imaging division, The Florey Institute of Neuroscience and Mental Health, Heidelberg, Victoria, Australia; [2]Centre for the Developing Brain, King's College London, London, United Kingdom; [3]Department of Biomedical Engineering, King's College London, London, United Kingdom; [4]Department of Medicine, The University of Melbourne, Heidelberg, Victoria, Australia

13:44 **0353.** **A Machine Learning Based Approach to Fiber Tractography**
ISMRM MERIT AWARD magna cum laude
Peter F. Neher[1], Michael Götz[1], Tobias Norajitra[1], Christian Weber[1], Klaus H. Maier-Hein[1]
[1]Medical Image Computing Group, German Cancer Research Center (DKFZ), Heidelberg, Germany

fMRI: Acquisition Techniques & Cortical Layers

Room 701 A 13:30-15:30 *Moderators:* Jay J. Pillai, M.D. & James J. Pekar, Ph.D.

13:30 **0354.** **Spin-Lock Functional MRI at Low Locking Fields Shows Improved Microvascular Specificity**
Swati Rane[1], John T. Spear[2], Carlos Faraco[2], Manus Donahue[2, 3], John C. Gore[2, 4]
[1]Radiology and Radiological Sciences, Vanderbilt University , Nashville, TN, United States; [2]Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [3]Neurology, Vanderbilt University, Nashville, TN, United States; [4]Biomedical Engineering, Vanderbilt University, Nashville, TN, United States

13:42 **0355.** **Direct Measurement of Delta Frequency Oscillations Using fMRI**
Laura D. Lewis[1], Jonathan R. Polimeni[2], Kawin Setsompop[2], Bruce R. Rosen[2]
[1]Society of Fellows, Harvard University, Cambridge, MA, United States; [2]Athinoula A. Martinos Center for Biomedical Imaging, Department of Radiology,, Harvard Medical School, Massachusetts General Hospital, Boston, MA, United States

13:54 **0356.** **Real-Time Shim Correction During Functional MRI Using a Volumetric Navigator**
ISMRM MERIT AWARD magna cum laude
A Alhamud[1], Paul Taylor[1, 2], Jia Fan[1], Ernesta Meintjes[1], André J.W. van der Kouwe[3]
[1]Human Biology,MRC/UCT Medical Imaging Research Unit, University of Cape Town, Cape Town, Western Cape, South Africa; [2]African Institute for Mathematical Sciences (AIMS), Western Cape, South Africa; [3]Massachusetts General Hospital, Charlestown, MA, United States

14:06 **0357.** **Laminar Differences in Neural Activity During Positive and Negative Bold Conditions**
ISMRM MERIT AWARD summa cum laude
Daniel Zaldivar[1], Nikos Logothetis[1], Jozien Goense[1, 2]
[1]Logothetis, Max Planck Institute for Biological Cybernetics, Tuebingen, Baden-Württemberg, Germany; [2]Institute of Neuroscience and Psychology, University of Glasgow, Glasgow, United Kingdom

14:18 **0358.** **Layer-Dependent Calibrated BOLD Response in Human M1**
ISMRM MERIT AWARD summa cum laude
Maria Guidi[1], Laurentius Huber[1], Leonie Lampe[1], Claudine J. Gauthier[1], Harald E. Möller[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

14:30 **0359.** **Dual-Polarity GRAPPA for the Robust Reconstruction of Multi-Channel EPI Data**
W. Scott Hoge[1, 2], Jonathan R. Polimeni, [23]
[1]Dept. of Radiology, Brigham and Women's Hosp, Boston, MA, United States; [2]Harvard Medical School, Boston, MA, United States; [3]Dept. of Radiology, Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown,, MA, United States

14:42 **0360.** **fMRI Using a 3D Radial-Cartesian Trajectory: Spatio-Temporal Tunability and Artifact Correction**
ISMRM MERIT AWARD summa cum laude
Nadine N. Graedel[1], Mark Chiew[1], Jennifer A. McNab[2], Karla L. Miller[1]
[1]FMRIB Centre, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]Department of Radiology, Stanford University, CA, United States

14:54 **0361.** **Single Venule Multi-Echo Line-Scanning fMRI (MELS-fMRI)**

ISMRM MERIT AWARD summa cum laude

Yi He[1, 2], Hellmut Merkle[3], Xin Yu[1, 2]
[1]Research Group of Translational Neuroimaging and Neural Control, High-Field Magnetic Resonance, Max Planck Institute for Biological Cybernetics, Tuebingen, Baden-Wuerttemberg, Germany; [2]Graduate School of Neural Information Processing, University of Tuebingen, Tuebingen, Baden-Wuerttemberg, Germany; [3]Laboratory of Functional and Molecular Imaging, National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD,, United States

15:06 **0362.** **Extended Parallel Imaging in Alternating-SSFP fMRI**

ISMRM MERIT AWARD magna cum laude

Tiffany Jou[1], Joseph Y. Cheng[2], Chris Bowen[3], Michael Lustig[4], John M. Pauly[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Radiology, Stanford University, Stanford, CA, United States; [3]Radiology, Dalhousie University, Halifax, NS, Canada; [4]Electrical Engineering and Computer Sciences, UC Berkeley, Berkeley, CA, United States

15:18 **0363.** **Three-Dimensional Mapping of Brain Venous Oxygenation Using T2-Oximetry**

ISMRM MERIT AWARD magna cum laude

Deng Mao[1], Hanzhang Lu[1]
[1]Advanced Imaging Research Center, Univ of Texas Southwestern Medical Center, Dallas, TX, United States

Imaging Drug Delivery & Drug Function

Room 701 B 13:30-15:30 *Moderators:* Zaver M. Bhujwalla, Ph.D. & Willem M. Mulder, Ph.D.

13:30 **0364.** **Classification of *In Vivo* Drug Function Through a Coupling Model and PET/fMRI**

ISMRM MERIT AWARD magna cum laude

Christin Y. Sander[1], Jacob M. Hooker[1], Ciprian Catana[1], Bruce R. Rosen[1, 2], Joseph B. Mandeville[1]
[1]A. A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Harvard Medical School, Boston, MA, United States; [2]Health Sciences and Technology, Harvard-MIT, Cambridge, MA, United States

13:42 **0365.** **Comparison of the Central Effects of Ketamine and the NR2B-Selective NMDA Receptor Antagonist Traxoprodil Using Pharmacological MRI in Conscious Rats**

Haiying Tang[1], Yu-Wen Li[1], Matthew Fronheiser[1], Daniel Kukral[1], Harold Malone[1], Adrienne Pena[1], Gabriel Tobon[2], Kurex Sidik[1], Patrick Chow[1], Linda Bristow[1], Wendy Hayes[1], Feng Luo[1]
[1]Bristol-Myers Squibb, Princeton, NJ, United States; [2]InviCRO, Boston, MA, United States

13:54 **0366.** **Comparison of MRI Contrast Enhancement with Molecular Distribution Following FUS-Mediated BBB Opening**

ISMRM MERIT AWARD magna cum laude

Michael Valdez[1], Shelby Yuan[1], Zhonglin Liu[1], Paul Helquist[2], Terry Matsunaga[1], Russell Witte[1], Lars Furenlid[1], Marek Romanowski[1], Ted Trouard[1]
[1]University of Arizona, Tucson, AZ, United States; [2]University of Notre Dame, IN, United States

14:06 **0367.** ***In Vivo* Monitoring of Ultrasound-Mediated Nanoparticle Delivery in Human Colon Cancer Xenografts Using Magnetization-Prepared Rapid Gradient Echo (MPRAGE) Imaging**

Steven B. Machtaler[1], Bragi Svensson[1], Tzu-Yin Wang[1], Jung Woo Choe, Kanyi Pu[1], James Rioux[1], Brian Rutt[1], Pierre Khuri-Yakub, Brian A. Hargreaves[1], Juergen K. Willmann[1]
[1]Radiology, Stanford, Stanford, CA, United States

14:18 **0368.** **Combined 19F MRI and CT Imaging for the Visualization of Delayed Release of Compounds Using PH-Sensitive Polymers Coated Capsules *In Vitro* and in a Hamster Animal Model**

ISMRM MERIT AWARD summa cum laude

Sayuan Liang[1], Dominiek Staelens[2], Bernard Appeltans[3], Marlies Van de Wouwer[3, 4], Guy Van den Mooter[3], Gert Van Assche[2], Greetje Vande Velde[1], Uwe Himmelreich[1]
[1]Department of Imaging & Pathology, KU Leuven, Leuven, Flemish Brabant, Belgium; [2]Department of Clinical and Experimental Medicine, KU Leuven, Leuven, Flemish Brabant, Belgium; [3]Department of pharmaceutical and pharmacological sciences, KU Leuven, Leuven, Flemish Brabant, Belgium; [4]PharmAbs, KU Leuven, Leuven, Flemish Brabant , Belgium

14:30 **0369.** **T1 Based Surrogate MRI Marker for Hyperthermia-Induced Release of Doxorubicin from Thermosensitive Liposomes in Solid Tumors**

Michael Peller[1], Linus Willerding[1, 2], Simone Limmer[2], Martin Hossann[2, 3], Olaf Dietrich[1], Michael Ingrisch[1], Lars Lindner[2, 3], Maximilian F. Reiser[1]

[1]Department of Clinical Radiology, University Hospital of Munich, Munich, Germany; [2]Department of Internal Medicine III, University Hospital of Munich, Munich, Germany; [3]CCG Tumor Therapy through Hyperthermia, Helmholtz Zentrum München, German Research Center for Environmental Health, Munich, Germany

14:42 0370. Direct Imaging of Gemcitabine Delivery in Pancreatic Ductal Adenocarcinoma (PDAC) Using CEST MRI

Yuguo Li[1, 2], Kannie W.Y. Chan[1, 2], Theodore Ewachiw[3], Michael T. McMahon[4, 5], Peter C.M. Van Zijl[4, 5], Zeshaan Rasheed[3], Guanshu Liu[1, 2]

[1]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States; [2]Department of Radiology, Johns Hopkins University, Baltimore, MD, United States; [3]Department of Oncology, Johns Hopkins University, Baltimore, MD , United States; [4]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD , United States; [5]Department of Radiology, Johns Hopkins University, Baltimore, MD , United States

14:54 0371. Multimodal *In Vivo* Evaluation of a Surface-Switching Nanoparticle Platform

Francois Fay[1], Line Hansen[2], Stephanie J. Hectors[3], Jun Tang[1], Anita Gianella[1], Brenda L. Sanchez-Gaytan[1], Yiming Zhao[1], Aneta J. Mieszawska[1], Robert Langer[4], Claudia Calcagno[1], Gustav J. Strijkers[3, 5], Zahi A. Fayad[1], Willem J.M. Mulder[1, 5]

[1]Translational and Molecular Imaging Institute, Icahn School of Medicine at Mount Sinai, New York City, NY, United States; [2]Interdisciplinary Nanoscience Center, Aarhus University, Aarhus, Denmark; [3]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [4]Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States; [5]Department of Vascular Medicine, Academic Medical Center,, Amsterdam, Netherlands

15:06 0372. On-Off Switchable Nanoparticles for Improved Detection with MRI

Bradley D. Hann[1], Kevin M. Bennett[1]

[1]Biology, University of Hawaii at Manoa, Honolulu, HI, United States

15:18 0373. PSMA-Specific Theranostic Nanoplexes for Combination Gene and Prodrug Therapy of Prostate Cancer

Zhihang Chen[1], Marie-France Penet[1], Balaji Krishnamachary[1], Sangeeta Ray Banerjeee[1], Martin G. Pomper[1], Zaver M. Bhujwalla[1]

[1]Russell H. Morgan Department of Radiology and Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, United States

RF Field & Exogenous Agent

Room 714 A/B 13:30-15:30 *Moderators:* Thoralf Niendorf, Ph.D. & T.B.A.

13:30 0374. A Rotating Transmit Coil and 32ch Receive Array for High-Resolution Brain Imaging of DBS Patients

Laleh Golestnirad[1], Boris Keil[1], Giorgio Bonmassar[1], Azma Mareyam[1], Lawrence Leory Wald[1]

[1]Radiology, Massachusetts General Hospital, Charlestown, MA, United States

13:42 0375. Reduction of Worst-Case Local SAR with Constraints on RF Shimming Parameters Based on Principal Component Analysis

Kosuke Ito[1], Yoshihisa Soutome, [12], Yukio Kaneko[2], Masahiro Takizawa[1]

[1]Hitachi Medical Corporation, Kashiwa, Chiba, Japan; [2]Central Research Laboratory, Hitachi Ltd, Kokubunji, Tokyo, Japan

13:54 0376. Reconstruction of the Local SAR Deposition Based on B1+ Field Data Using CSI-EPT

ISMRM MERIT AWARD summa cum laude

Edmond Balidemaj[1], Cornelis A.T. van den Berg[2], Hans Crezee[1], Aart Nederveen[3], Rob Remis[4]

[1]Radiotherapy, Academic Medical Center, Amsterdam, Netherlands; [2]Radiotherapy, UMC Utrecht, Utrecht, Netherlands; [3]Radiology, Academic Medical Center, Amsterdam, Netherlands; [4]Circuits and Systems Group, TU Delft, Delft, Netherlands

14:06 0377. Thermo-Acoustic Ultrasound Detection of RF Coil and Tip SAR

Greig Scott[1], Maryam Etezadi-Amoli[1], Pascal Stang[2], Hao Nan[1], Miaad Aliroteh[1], Amin Arbabian[1], John Pauly[1]

[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Procyon Engineering, CA, United States

14:18 0378. NSsaFe Study: Observational Study on the Incidence of Nephrogenic Systemic Fibrosis in Renal Impaired Patients Following Gadoterate Meglumine Administration.

Adelard I. De Backer[1]

[1]Radiology, General Hospital Sint-Lucas, Ghent, Oost-Vlaanderen, Belgium

14:30 0379. A Vectorized Formalism for Efficient SAR Computation in Parallel Transmission

ISMRM MERIT AWARD magna cum laude

Mihir Pendse[1], Brian Rutt[1]
[1]Radiology, Stanford University, Stanford, CA, United States

14:42 0380. Correlation of PsSAR and Tissue Specific Temperature for 7T PTx Head Coils - A Large Scale Simulation Study

Frank Seifert[1], Gerd Weidemann[1], Bernd Ittermann[1]
[1]Physikalisch-Technische Bundesanstalt (PTB), Braunschweig und Berlin, Germany

14:54 0381. Prospective Assessment of Transient Dyspnea and Arterial Oxygen Saturation After Injection of Gadoxetic Acid in a Large Patient Cohort

Utaroh Motosugi[1, 2], Peter Bannas[1, 3], Candice A. Bookwalter[1], Scott B. Reeder[1, 4]
[1]Radiology, University of Wisconsin, Madison, WI, United States; [2]Radiology, University of Yamanashi, Yamanashi, Japan; [3]Radiology, University Hospital Hamburg-Eppendorf, Humburg, Germany; [4]Medical Physics, University of Wisconsin, Madison, WI, United States

15:06 0382. Variations in Peak Local SAR Due to Coupling – Comparison Between Various PTx Array Simulation Methods

Shubham Gupta[1], R Allen Waggoner[1], Keiji Tanaka[1], Kang Cheng[1, 2]
[1]Lab. for Cognitive Brain Mapping, RIKEN Brain Science Institute, Wako, Saitama, Japan; [2]RRC, RIKEN Brain Science Institute, Wako, Saitama, Japan

15:18 0383. B1-Based SAR Determination for Local RF Transmit Coils

Ulrich Katscher[1], Marina Braun[2], Christian Findeklee[1], Christoph Leussler[1], Ingmar Graesslin[1], Peter Vernickel[1], Michael Morlock[2]
[1]Philips Research Europe, Hamburg, Germany; [2]University of Technology, Hamburg, Germany

Hepatobiliary 2

Room 716 A/B 13:30-15:30 *Moderators:* Hero K. Hussain, M.D. & Takeshi Yokoo, M.D., Ph.D.

13:30 0384. Assessment of the Hepatocyte Fraction for Estimation of Liver Function

TOMOYUKI OKUAKI[1], Kosuke Morita[2], Tomohiro Namimoto[3], Morikatsu Yoshida[3], Shinya Shiraishi[3], Yasuyuki Yamashita[3], Marc Van Cauteren[1]
[1]Philips Healthcare, Minato-ku, Tokyo, Japan; [2]Department of Central Radiology, Kumamoto University Hospital, Kumamoto, Japan; [3]Department of Diagnostic Radiology, Faculty of Life Sciences,, Kumamoto University, Kumamoto, Japan

13:42 0385. Simultaneous Quantification of Liver Perfusion and Hepatocyte Uptake Function with Dynamic Gadoxetate-Enhanced MR Imaging in Patients with Chronic Liver Diseases

Benjamin Leporq[1], Sabine Schmidt[2], Catherine Pastor[1, 3], Jean Luc Daire[1], Bernard Edgar Van Beers[1, 4]
[1]Center of research on inflammation, Paris 7 University; INSERM U1044, Paris, France; [2]Department of Radiology, Centre Hospitalier Universitaire Vaudois, Lausanne, Switzerland; [3]Laboratoire de Physiopathologie Hépatique et Imagerie Moléculaire,, Hôpitaux Universitaires de Genève, Geneva, Switzerland; [4]Department of Radiology, Beaujon University hospital Paris Nord, Clichy, France

13:54 0386. High Spatiotemporal Resolution Liver Perfusion Imaging in Focal Liver Lesions

Yong Chen[1], Chaitra Badve[1], Shivani Pahwa[1], Mark Griswold[1, 2], Nicole Seiberlich[1, 2], Vikas Gulani[1, 2]
[1]Department of Radiology, Case Western Reserve University, Cleveland, OH, United States; [2]Department of Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States

14:06 0387. Sparse Radial *k-T* SPIRiT for Dynamic Liver Imaging

ISMRM MERIT AWARD magna cum laude

Dan Zhu[1], Feng Huang[2], Jia Ning[1], Feiyu Chen[1], Huijun Chen[1]
[1]Tsinghua University, Beijing, China; [2]Philips Healthcare, Suzhou, Jiangsu, China

14:18 0388. Assessment of Liver Fibrosis in Rats by MRI with Apparent Diffusion Coefficient and T1 Relaxation Time in the Rotating Frame

ISMRM MERIT AWARD summa cum laude

Genwen Hu[1, 2], Xianyue Quan[1], Xiaoying Lin[2], Queenie Chan[3], Yingjie Mei[4], Xuhui Zhang[1], Yufa Li[5]
[1]Medical Image Center, Zhujiang Hospital, Southern Medical University, Guangzhou, Guangdong, China; [2]Medical Image Center,Shenzhen Bao'an Maternal and Child Health Hospital, Shenzhen, Guangdong, China; [3]Philips Healthcare, Hong Kong, China; [4]Philips Healthcare, Guangzhou, Guandong, China; [5]Department of Pathology, Zhujiang Hospital, Southern Medical University, Guangzhou, Guangdong, China

14:30 0389. Advanced Assessment of Liver Diseases with Magnetic Resonance Elastography in Animal Models

Meng Yin[1], Ruisi Wang[2], Usman Yaqoob[2], Shennen A. Mao[3], Jaime M. Glorioso[3], Kevin J. Glaser[1], Liu Yang[2], Vijay Shah[2], Scott L. Nyberg[3], Richard L. Ehman[1]
[1]Radiology, Mayo Clinic, Rochester, MN, United States; [2]Gastroenterology and Hepatology, Mayo Clinic, Rochester, MN, United States; [3]Transplatation Surgery, Mayo Clinic, Rochester, MN, United States

14:42 0390. Non-Invasive Characterization and Staging of Portal Hypertension Using 4D Flow MRI

Alejandro Roldán-Alzate[1], Adnan Said[2], Camilo Campo[1], Kevin M. Johnson[3], Christopher J. Francois[1], Oliver Wieben[1, 3], Scott B. Reeder[1, 3]
[1]Radiology, University of Wisconsin - Madison, Madison, WI, United States; [2]Hepatology, University of Wisconsin - Madison, Madison, WI, United States; [3]Medical Physics, University of Wisconsin - Madison, Madison, WI, United States

14:54 0391. Arterial Spin Labeling MRI as a Sensitive Imaging Marker of Congenital Hepatic Fibrosis in Autosomal Recessive Polycystic Kidney Disease (ARPKD)

ISMRM MERIT AWARD magna cum laude

Ying Gao[1], Bernadette O. Erokwu[2], David A. DeSantis[3], Colleen M. Croniger[3], Rebecca M. Schur[1], Lan Lu[2, 4], Katherine M. Dell[5], Chris A. Flask, [12]
[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Radiology, Case Western Reserve University, Cleveland, OH, United States; [3]Nutrition, Case Western Reserve University, Cleveland, OH, United States; [4]Urology, Case Western Reserve University, Cleveland, OH, United States; [5]Pediatrics, Case Western Reserve University, Cleveland, OH, United States

15:06 0392. Magnetic Resonance Elastography of Liver: Utility in Autoimmune Hepatitis

Jin Wang[1, 2], Meng Yin[1], Sudhakar Kundapur Venkatesh[1], Richard L. Ehman[1]
[1]Radiology, Mayo Clinic, Rochester, MN, United States; [2]Radiology, The Third Affiliated Hospital, Sun Yat-Sen University, Guangzhou, Guangdong, China

15:18 0393. Quantitative MR Imaging of Hepatic Steatosis: Validation in *Ex Vivo* Human Livers

Peter Bannas[1, 2], Harald Kramer[3], Diego Hernando[1], Ashley M. Cunningham[4], Rakesh Mandal[4], Rashmi Agni[4], Utaroh Motosugi[1], Samir D. Sharma[1], Alejandro Munoz del Rio[1], Luis Fernandez[5], Scott B. Reeder[1, 6]
[1]Radiology, University of Wisconsin-Madison, Madison, WI, United States; [2]Radiology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [3]Radiology, Ludwig-Maximilians-University Hospital, Munich, Bavaria, Germany; [4]Pathology, University of Wisconsin-Madison, Madison, WI, United States; [5]Surgery, University of Wisconsin-Madison, Madison, WI, United States; [6]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States

Alzheimer's Disease

Constitution Hall 107 13:30-15:30 *Moderators:* Masaaki Hori, M.D., Ph.D. & T.B.A.

13:30 0394. Comparing *In Vivo* and *Ex Vivo* Imaging in an Alzheimer's Mouse Model Using Tensor-Based Morphometry

ISMRM MERIT AWARD summa cum laude

Holly Elizabeth Holmes[1], Nicholas Powell[1, 2], Jack Wells[1], Niall Colgan[1], Ozama Ismail[1], James O'Callaghan[1], Da Ma[1, 2], Michael J. O'Neill[3], Emily Catherine Collins[4], Manuel Jorge Cardoso[2], Marc Modat[2], Elizabeth Fisher[5], Sebastian Ourselin[2], Mark F. Lythgoe
[1]Centre for Advanced Biomedical Imaging, University College London, London, Greater London, United Kingdom; [2]Centre for Medical Image Computing, University College London, London, Greater London, United Kingdom; [3]Eli Lilly & Co. Ltd, Windlesham, Surrey, United Kingdom; [4]Eli Lilly & Company, Indianapolis, United States; [5]Department of Neurodegenerative Diseases, University College London, London, Greater London, United Kingdom

13:42 0395. Probing *In Vivo* T2 Relaxation Time Alterations in the Corpus Callosum of a Mouse Model of Alzheimer's Disease

ISMRM MERIT AWARD magna cum laude

Firat Kara[1, 2], Steffen Roßner[3], Annemie Van der Linden[1], Huub J.M. de Groot[2], A. Alia[2, 4]

[1]Bioimaging Lab, University of Antwerp, Antwerp, Belgium; [2]Leiden Institute of Chemistry, Gorlaeus Laboratoria, Leiden University, Leiden, Netherlands; [3]Paul Flechsig Institute for Brain Research, University of Leipzig, Leipzig, Germany; [4]Institute of Medical Physics and Biophysics, Leipzig University, Leipzig, Germany

13:54 **0396. Corpus Callosum Atrophy Rate in Mild Cognitive Impairment and Prodromal Alzheimer's Disease**

Babak Ardekani[1, 2], Sahar Elahi[1], Alvin Bachman[1], Sang Han Lee[1], John Sidtis[1, 2]
[1]The Nathan S. Kline Institute for Psychiatric Research, Orangeburg, NY, United States; [2]Department of Psychiatry, New York University School of Medicine, New York, NY, United States

14:06 **0397. Increased Cortical Volume Revealed by Atlas-Based Volumetry in a Bigenic Mouse Model of Alzheimer's Disease**

ISMRM MERIT AWARD magna cum laude

Kristof Govaerts[1], Janaki Raman Rangarajan[2], Tom Struys[3], Fred Van Leuven[4], Uwe Himmelreich[1], Tom Dresselaers[1]
[1]Imaging & Pathology, KU Leuven, Leuven, Vlaams-Brabant, Belgium; [2]Electrical Engineering, KU Leuven, Leuven, Vlaams-Brabant, Belgium; [3]Morphology, Universiteit Hasselt, Hasselt, Limburg, Belgium; [4]Human Genetics, KU Leuven, Leuven, Vlaams-Brabant, Belgium

14:18 **0398. Cortical Volume and Perfusion Are Influenced by Vascular Risk Factors in Addition to Cognitive Status: New Insight Made Available from the ADNI Study**

Ekaterina Tchistiakova[1, 2], Bradley J. MacIntosh[1, 2]
[1]Medical Biophysics, University of Toronto, Toronto, ON, Canada; [2]Heart and Stroke Foundation Canadian Partnership for Stroke Recovery, Sunnybrook Research Institute, Toronto, ON, Canada

14:30 **0399. Brain Magnetic Susceptibility Is Increased with Cognitive Impairment in a Community Population**

Armin Eilaghi[1, 2], D Adam McLean[3], Cheryl R. McCreary[1, 4], David Gobbi[3], M Louis Lauzon[1, 4], Marina Salluzzi[3], Eric E. Smith[1, 4], Richard Frayne[1, 4]
[1]Radiology and Clinical Neurosciences, Hotchkiss Brain Institute, University of Calgary, Calgary, Alberta, Canada; [2]Seaman Family MR Centre , Foothills Medical Centre,, Calgary, Alberta, Canada; [3]Calgary Image Processing and Analysis Centre, Foothills Medical Centre, Calgary, Alberta, Canada; [4]Seaman Family MR Centre, Foothills Medical Centre, Calgary, Alberta, Canada

14:42 **0400. Regional Cerebral Iron Concentrations as Indicated by Magnetic Susceptibilities Measured with Quantitative Susceptibility Mapping (QSM) at 7 Tesla Correlate with Brain Aβ Plaque Density as Measured by 11-C-Pittsburgh Compound B Positron-Emission-Tomography (PiB-PET) in Elderly Subjects at Risk for Alzheimer's Disease (AD)**

Jiri M.G. van Bergen[1, 2], Xu Li[2], Michael Wyss[3], Simon J. Schreiner[1], Stefanie C. Steininger[1], Anton F. Gietl[1], Valerie Treyer[1, 4], Sandra E. Leh[1], Fred Buck[4], Jun Hua[2], Roger Nitsch[1], Klaas P. Pruessmann[3], Peter C.M. van Zijl[2], Christoph Hock[1], Paul G. Unschuld[1]
[1]Division of Psychiatry Research and Psychogeriatric Medicine, University of Zurich, Zurich, Switzerland; [2]F.M. Kirby center for Functional Brain Imaging, Kennedy Krieger Institute and Johns Hopkins School of Medicine, Baltimore, MD, United States; [3]Institute for Biomedical Engineering, University of Zurich and ETH Zurich, Zurich, Switzerland; [4]Division of Nuclear Medicine, University of Zurich, Zurich, Switzerland

14:54 **0401. Mapping the Effect of APOE ε4 Genotype on Intrinsic Functional Network Centrality in Patients with Amnestic Mild Cognitive Impairment**

Zan Wang[1], Zhengjia Dai[2], Yongmei Shi[1], Hao Shu[1], Duan Liu[1], Yong He[2], Zhijun Zhang[1]
[1]Department of Neurology, Affiliated ZhongDa Hospital of Southeast University, Nanjing, Jiangsu, China; [2]State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China

15:06 **0402. Combined Functional and Tractography Connectome to Investigate Alzheimer Brain Networks**

Fulvia Palesi[1, 2], Gloria Castellazzi, [23], Elena Sinforiani[4], Paolo Vitali[5, 6], Claudia A. M. Wheeler-Kingshott[7], Egidio D'Angelo, [26]
[1]Department of Physics, University of Pavia, Pavia, PV, Italy; [2]Brain Connectivity Center, C. Mondino National Neurological Institute, Pavia, PV, Italy; [3]Department of Electrical, Computer and Biomedical Engineering, University of Pavia, Pavia, PV, Italy; [4]Neurology Unit, C. Mondino National Neurological Institute, Pavia, PV, Italy; [5]Brain MRI 3T Mondino Research Center, C. Mondino National Neurological Institute, Pavia, PV, Italy; [6]Department of Brain and Behavioral Sciences, University of Pavia, Pavia, PV, Italy; [7]NMR Research Unit, Department of Neuroinflammation, Queen Square MS Centre, UCL Institute of Neurology, London, England, United Kingdom

15:18 0403. Free Water Elimination DTI in Preclinical Alzheimer's: Evidence for Early Axonal Degeneration

Andrew R. Hoy[1, 2], Sterling C. Johnson[3, 4], Ozioma C. Okonkwo, [45], Cynthia M. Carlsson[3, 4], Henrik Zetterberg[6], Kaj Blennow[7], Sanjay Asthana[3, 4], Mark A. Sager, [45], Andrew L. Alexander[1, 8], Barbara B. Bendlin[4, 5]

[1]Medical Physics, University of Wisconsin, Madison, WI, United States; [2]Medical Service Corp, United States Navy, Falls Church, VA, United States; [3]Geriatric Research, Education and Clinical Center, William S. Middleton Memorial Veteran's Hospital, Madison, WI, United States; [4]Wisconsin Alzheimer's Disease Research Center, University of Wisconsin, Madison, WI, United States; [5]Wisconsin Alzheimer's Institute, University of Wisconsin, Madison, WI, United States; [6]Institute of Neuroscience and Physiology, Department of Psychiatry and Neurochemistry, University of Gothenberg, Gothenberg, Sweden; [7]Department of Clinical Neuroscience, University of Gothenberg, Gothenberg, Sweden; [8]Waisman Laboratory for Brain Imaging and Behavior, University of Wisconsin, Madison, WI, United States

Novel & Hybrid Systems

John Bassett Theatre 102 13:30-15:30 *Moderators:*Fernando E. Boada, Ph.D. & Harald H. Quick, Ph.D.

13:30 0404. MRI Compatibility of a High-Resolution Small Animal PET Insert Operating Inside a 7T MRI

Jonathan D. Thiessen[1, 2], Ehsan Shams[3, 4], Greg Stortz[5], Graham Schellenberg[4], Daryl Bishop[6], Muhammad Salman Khan[7], Piotr Kozlowski[8], Fabrice Retière[6], Vesna Sossi[5], Christopher J. Thompson[9], Andrew L. Goertzen, [410]

[1]Imaging Program, Lawson Health Research Institute, London, Ontario, Canada; [2]Medical Biophysics, Western University, London, Ontario, Canada; [3]Graduate Program in Biomedical Engineering, University of Manitoba, Winnipeg, Manitoba, Canada; [4]Physics & Astronomy, University of Manitoba, Winnipeg, Manitoba, Canada; [5]Physics & Astronomy, University of British Columbia, Vancouver, British Columbia, Canada; [6]Detector Development Group, TRIUMF, Vancouver, British Columbia, Canada; [7]Electrical & Computer Engineering, University of Manitoba, Winnipeg, Manitoba, Canada; [8]Radiology, University of British Columbia, Vancouver, British Columbia, Canada; [9]McConnell Brain Imaging Centre, Montreal Neurological Institute, Montréal, Québec, Canada; [10]Radiology, University of Manitoba, Winnipeg, Manitoba, Canada

13:42 0405. MR-Based Attenuation Correction for MR-PET Studies with Continuous-Valued Attenuation Coefficients for Bone Through a Conversion from R2* to CT Hounsfield Units

ISMRM MERIT AWARD summa cum laude

Meher Juttukonda[1, 2], Bryant Mersereau[1, 2], Yasheng Chen, [23], Yi Su[4], Brian Rubin[4], Tammie Benzinger[4], David Lalush[1, 2], Hongyu An, [23]

[1]Joint Department of Biomedical Engineering, University of North Carolina - Chapel Hill & North Carolina State University, Chapel Hill, NC, United States; [2]Biomedical Research Imaging Center, University of North Carolina - Chapel Hill, Chapel Hill, NC, United States; [3]Radiology, University of North Carolina - Chapel Hill, Chapel Hill, NC, United States; [4]Mallinckrodt Institute of Radiology, Washington University, St. Louis, MO, United States

13:54 0406. 3D Hybrid Phantom Measurement: Validation of a Fully Integrated Preclinical 12 Channel Hybrid MPI-MRI Magnet System

Jochen Franke[1, 2], Ulrich Heinen[1], Heinrich Lehr[1], Alexander Weber[1], Frederic Jaspard[3], Wolfgang Ruhm[1], Michael Heidenreich[1], Volkmar Schulz[2]

[1]R&D Magnetgic Particle Imaging, Bruker BioSpin MRI GmbH, Ettlingen, Germany; [2]Physics of Molecular Imaging Systems, University RWTH Aachen, Aachen, Germany; [3]R&D Gradient Systems, Bruker BioSpin, Wissembourg, France

14:06 0407. Whole-Body Concept for Integration of Hybrid PET/MR Imaging Into Radiation Therapy Treatment Planning

Daniel H. Paulus[1], Mark Oehmigen[2], Harald H. Quick[1, 2]

[1]Institute of Medical Physics, University of Erlangen-Nürnberg, Erlangen, Germany; [2]High Field and Hybrid MR Imaging, University Hospital Essen, Essen, Germany

14:18 0408. Concurrent Optical and Magnetic Resonance Microscopy

ISMRM MERIT AWARD magna cum laude

Frederik Testud[1], Elmar Fischer[1], Katharina Göbel[1], Nils Spengler[2], Ulrike Wallrabe[2], Maxim Zaitsev[1], Matthias Wapler[2]

[1]Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]Department for Microsystems Engineering – IMTEK, University of Freiburg, Freiburg, Germany

14:30 0409. A Fast and Practical Imaging Scheme for a Rotating RF Coil at 9.4T by Using Ultra-Short TE Sequence in Radial Trajectory

ISMRM MERIT AWARD magna cum laude

Mingyan Li[1], Thimo Hugger[2], Ewald Weber[1], Jin Jin[1], Feng Liu[1], Peter Ullmann[2], Simon Stark[2], Yasvir Tesiram[3], Yang Yang[1], Sven Junge[2], Stuart Crozier[1]

[1]The School of Information Technology and Electrical Engineering, The University of Queensland, Brisbane, QLD, Australia; [2]Bruker BioSpin MRI GmbH, Ettlingen, Baden-Württemberg, Germany; [3]Centre for Advanced Imaging, The University of Queensland, Brisbane, QLD, Australia

14:42 **0410.** **MR-Based PET Attenuation Correction for Brain PET-MR Using Support Vector Machines**

Yicheng Chen[1], Di Cui[1, 2], Yingmao Chen[3], Jinsong Ouyang[4], Georges El Fakhri[4], Kui Ying[1]
[1]Key Laboratory of Particle and Radiation Imaging, Ministry of Education, Department of Engineering Physics, Tsinghua University, Beijing, China; [2]Department of Diagnostic Radiology, The University of Hong Kong, Hong Kong, China; [3]Department of Nuclear Medicine, The general hospital of Chinese People's Liberation, Beijing, China; [4]Department of Radiology, Division of Nuclear Medicine and Molecular Imaging, Harvard Medical School and Massachusetts General Hospital, Boston, MA, United States

14:54 **0411.** **Continuous Bone Density Measurement for Simultaneous MR-PET Attenuation Correction Using Water- And Fat-Suppressed Projection Imaging (WASPI)**

Chuan Huang[1, 2], Jinsong Ouyang[1], Timothy Reese[3], Yaotang Wu[4], Georges El Fakhri[1], Jerome Ackerman[3]
[1]Center for Advanced Medical Imaging Sciences, Radiology, Massachusetts General Hospital, Boston, MA, United States; [2]Research Radiology, Psychiatry, Stony Brook Medicine, Stony Brook, NY, United States; [3]Martinos Center for Biomedical Imaging, Radiology, Massachusetts General Hospital, Boston, MA, United States; [4]Radiology, Children's Hospital Boston, Boston, MA, United States

15:06 **0412.** **Respiratory and Cardiac Non-Rigid Motion Correction for Cardiac PET-MR**

Christoph Kolbitsch[1], Mark Ahlman[2], Michael Hansen[3], Javier Royuela del Val, [14], Peter Kellman[3], David A. Bluemke[2], Tobias Schaeffter[1]
[1]Division of Imaging Sciences and Biomedical Engineering, King's College London, London, United Kingdom; [2]Clinical Center, Radiology and Imaging Sciences, National Institute of Health, Bethesda, MD, United States; [3]National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD, United States; [4]Laboratorio de Procesado de Imagen, Universidad de Valladolid, Valladolid, Spain

15:18 **0413.** **Hyperion-II^{D}: A Preclinical PET/MRI Insert Using Digital Silicon Photomultipliers**

Jakob Wehner[1], Bjoern Weissler[2, 3], David Schug[1], Peter Dueppenbecker[4], Pierre Gebhardt[4], Benjamin Goldschmidt[1], Andre Salomon[5], Rene Botnar[4], Fabian Kiessling[1], Volkmar Schulz[1, 3]
[1]Institute for Experimental Molecular Imaging, RWTH Aachen University, Aachen, NRW, Germany; [2]Institute of High Frequency Technology, RWTH Aachen University, NRW, Germany; [3]Philips Research Europe, Aachen, NRW, Germany; [4]King's College London, London, United Kingdom; [5]Philips Research Europe, Eindhoven, Netherlands

Educational Course
Multifarious Manifestations of Muscle Disease

*Organizers:*Eric Y. Chang, M.D., Garry E. Gold, M.D., Richard Kijowski, M.D., William B. Morrison, M.D., Ravinder R. Regatte, Ph.D. & Siegfried Trattnig, M.D.

Room 718 A 13:30-15:30 *Moderators:*Chris Boesch, M.D. & Mark Schweitzer, M.D.

13:30 **Sports Injury & Other Trauma**
Viviane Khoury

14:00 **Inflammatory & Infectious Disease**
Mary K. Jesse

14:30 **Metabolic Conditions & Genetic Disorders**
Tetyana A. Gorbachova

15:00 **Muscle Atrophy Patterns: Nerve Impingement & More**
Dorota D. Linda

15:30 **Adjournment & Meet the Teachers**

Educational Course
Challenges in Quantitative Cardiovascular Imaging

*Organizers:*Thomas K. F. Foo, Ph.D. & Martin J. Graves, Ph.D.

Room 718 B 13:30-15:30 *Moderators:*Taylor Chung, M.D. & Ehud J. Schmidt, Ph.D.

13:30 **Ventricular Function (RV and LV from Cines, Spatiotemporal Resolution & Field Strengths)**
David A. Bluemke

14:00 **Flow Quantification (Ao, MPA, Branch PAs, VENC, Background Errors, Temporal/Spatial Resolution, ROIs)**
Peter D. Gatehouse

14:30 **Perfusion (Artifacts, Spatiotemporal Resolution, Techniques, But Not Quantitative Perfusion Kep/Ktrans)**
Richard A. R. Coulden

15:00 **Late Gadolinium Enhancement for Viability (LGE Scar Assessment, TI Optimisation & Methods)**
W. Patricia Bandettini

15:30 **Adjournment & Meet the Teachers**

Educational Course
Genomics, Proteomics, & Big Data

Organizers: Jonathan H. Gillard, M.D., FRCR, MBA & Howard A Rowley, M.D.
Room 718 B 13:30-15:30 *Moderators:* Benjamin M. Ellingson, Ph.D. & James C. Gee, Ph.D.

13:30 **Managing Big Data from MRI: The Neuroradiologist's Perspective**
Christopher T. Whitlow

14:00 **Managing Big Data for Genomics & Proteomics**
Rivka R. Colen

14:30 **Managing Big Data from MRI: The Physicist's Perspective**
Hae-Jeong Park

15:00 **Managing Big Data: Getting Better Insight**
Christopher T. Whitlow

15:30 **Adjournment & Meet the Teachers**

Traditional Poster Session: Engineering
Exhibition Hall 16:00-18:00 *(no CME credit)*

Traditional Poster Session: UHF
Exhibition Hall 16:00-18:00 *(no CME credit)*

Traditional Poster Session: MR Safety
Exhibition Hall 16:00-18:00 *(no CME credit)*

Electronic Poster Session: Cancer
Exhibition Hall 16:00-18:00 *(no CME credit)*

Electronic Poster Session: fMRI
Exhibition Hall 16:00-18:00 *(no CME credit)*

Study Group Session
White Matter
Reception Hall 104 BCD 16:00-18:00 *(no CME credit)*

Study Group Session
Perfusion
Constitution Hall 105 16:00-18:00 *(no CME credit)*

Power Pitch Session: Molecular Imaging & Spectroscopy

Power Pitch Theatre, Exhibition Hall 16:00-17:00 *(no CME credit)*

Moderators: Peter van Zijl, Ph.D. & Carolyn E. Mountford, D.Phil.

0414. Citicoline as a Theranostic Agent Detected by CEST MRI

Hanwei Chen[1, 2], Yuguo Li[3, 4], Anna Jablonska[1], Shuixing Zhang[5], Jeff W. Bulte[1, 3], Peter C.M. Van Zijl, [46], Mirek Janowski[1, 7], Piotr Walczak[1], Guanshu Liu, [13]

[1]Department of Radiology, Johns Hopkins University, Baltimore, MD, United States; [2]Radiology, Guangzhou Panyu Central Hospital, Guangzhou, Guangdong, China; [3]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States; [4]Department of Radiology, Johns Hopkins University, Baltimore, MD , United States; [5]Department of Radiology, Guangdong General Hospital, Guangzhou, Guangdong, China; [6]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD , United States; [7]NeuroRepair Department, MMRC PAS, Warsaw, Poland

ISMRM MERIT AWARD magna cum laude

0415. MEMRI of Organotypic Rat Hippocampal Slice Cultures

Alexia Daoust[1], Stephen Dodd[1], Alan Koretsky[1]

[1]NINDS, LFMI, NIH, Bethesda, MD, United States

ISMRM MERIT AWARD summa cum laude

0416. Radical-Free Mixture of Co-Polarized 13C-Metabolites for Probing Separate Biochemical Pathways Simultaneously *In Vivo* by Hyperpolarized 13C MR

Jessica AM Bastiaansen[1, 2], Hikari AI Yoshihara[3, 4], Andrea Capozzi[3], Juerg Schwitter[4], Matthew E. Merritt[5], Arnaud Comment[3]

[1]Department of Radiology, University Hospital (CHUV) and University of Lausanne (UNIL), Lausanne, Switzerland; [2]Center for Biomedical Imaging (CIBM), Lausanne, Switzerland; [3]Institute of Physics of Biological Systems, EPFL, Lausanne, Switzerland; [4]Division of Cardiology and Cardiac MR Center, University Hospital Lausanne (CHUV), Lausanne, Switzerland; [5]Advanced Imaging Research Center,Department of Radiology,Molecular Biophysics,Biomedical Engineering, University of Texas Southwestern Medical Center, Dallas, TX, United States

0417. *In Vivo* PH Imaging of Mouse Kidneys Using a Frequency-Dependent ParaCEST Agent

Yunkou Wu[1], Shanrong Zhang[1], Todd C. Soesbe[1], A. Dean Sherry[1, 2]

[1]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States; [2]Department of Chemistry, The University of Texas at Dallas, Richardson, TX, United States

ISMRM MERIT AWARD magna cum laude

0418. Image-Guided Delivery of Liposomal Nano-Constructs Targeting Tumor Vasculature

Sudath Hapuarachchige[1], Yoshinori Kato[1, 2], Wenlian Zhu[1], Joseph M. Backer[3], Marina V. Backer[3], Susanta K. Sarkar[4], Dmitri Artemov[1, 5]

[1]Department of Radiology & Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Life Science Tokyo Advanced Research Center, Hoshi University, Japan; [3]SibTec, Inc.,, Brookfield, CT, United States; [4]Sanofi Oncology, Cambridge, MA, United States; [5]Department of Oncology, Johns Hopkins University School of Medicine, Baltimore, MD, United States

0419. Micro-MRI and Fluorescence Imaging of Myeloperoxidase Activity in Human Brain Vascular Pathology

Dung Minh Hoang[1], Matthew J. Gounis[2], Youssef Zaim Wadghiri[1], Peter Caravan[3], Alexei A. Bogdanov Jr. [2]

[1]Radiology, Bernard and Irene Schwartz Center for Biomedical Imaging, New York University, New York, NY, United States; [2]Radiology, University of Massachusetts Medical School, Worcester, MA, United States; [3]Radiology, A.Martinos' Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States

0420. Molecular Imaging Studies of a Robust Gd-Sucrose Scaffold Applied to MR-Colonography

Gary V. Martinez[1], Parastou Foroutan[2], Valerie E. Moberg[1], Suryakiran Navath[3], Roha Afzal[1], Robert J. Gillies[1], Eugene A. Mash[3], David L. Morse[1]

[1]Department of Cancer Imaging and Metabolism, H. Lee Moffitt Cancer Center & Research Institute, Tampa, FL, United States; [2]Bruker Biospin, Billerica, MA, United States; [3]Department of Chemistry and Biochemistry, University of Arizona, Tucson, AZ, United States

ISMRM MERIT AWARD summa cum laude

0421. Two-Dimensional Shaped Voxel MRS in the Human Brain at 3 T

Patrick Waxmann[1], Ralf Mekle[1], Florian Schubert[1], Andre Kuehne[2], Tomasz Dawid Lindel[1], Frank Seifert[1], Oliver Speck[3], Bernd Ittermann[1]

[1]Physikalisch-Technische Bundesanstalt (PTB), Braunschweig und Berlin, Berlin, Germany; [2]Medical University of Vienna, Vienna, Austria; [3]Otto-von-Guericke-University, Magdeburg, Germany

0422. ***In Vivo* Quantification of ATP Synthesis Rates in Rat Skeletal Muscle by ^{31}P Spectroscopic Magnetic Resonance Fingerprinting**
Charlie Yi Wang[1], Yuchi Liu[1], Mark Alan Griswold, [12], Xin Yu, [12]
[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Radiology, Case Western Reserve University, Cleveland, OH, United States

0423. **^{13}C MRS of the Brain Without Decoupling**
Keshav Datta[1], Arif Wibowo[2], Stephen R. Lynch[2], Daniel Spielman[3]
[1]Dept. of Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Dept. of Chemistry, Stanford University, CA, United States; [3]Dept. of Radiology, Stanford University, Stanford, CA, United States

0424. ***In Vivo* Assessment of Intracellular NAD^+/NADH Redox State in Human Brain at 4 Tesla**
Ming Lu[1], Wei Chen[1], Xiao-Hong Zhu[1]
[1]Center for Magnetic Resonance Research, University of Minnesota Medical School, Minneapolis, MN, United States

0425. **Diffusion-Weighted MR Spectroscopy Feasibility in Clinical Studies at 3 T : The Effect of Reducing the Acquisition Time Investigated by Bootstrapping**
Francesca Branzoli[1, 2], Daniel Garcia-Lorenzo[1, 2], Romain Valabrègue[1, 2], Stephane Lehéricy[1, 2]
[1]Institut du Cerveau et de la Moelle épinière – ICM, Centre de Neuroimagerie de Recherche – CENIR, Paris, France; [2]Sorbonnes Université, Université Pierre et Marie Curie and Inserm UMR-S1127; CNRS, UMR 7225, Paris, France

0426. **Metabolome Profiling by HRMAS NMR Spectroscopy of Hyperfunctioning Parathyroid Glands**
Stéphanie Battini[1], Alessio Imperiale[1, 2], David Taieb[3], Karim Elbayed[1], Frédéric Sebag[4], Laurent Brunaud[5], Izzie-Jacques Namer[1, 6]
[1]ICube laboratory UMR 7357, University of Strasbourg/CNRS and FMTS, Strasbourg, France; [2]University Hospitals of Strasbourg, Department of Biophysics and Nuclear Medicine, Hautepierre , Strasbourg, France; [3]La Timone University Hospital, European Center for Research in Medical Imaging, Aix-Marseille University, Marseille, France; [4]Department of Endocrine Surgery, La Timone University Hospital, Aix-Marseille University, Marseille, France; [5]Department of Digestive, Hepato-Biliary and Endocrine Surgery, Brabois University Hospital, Nancy, France; [6]University Hospitals of Strasbourg, Department of Biophysics and Nuclear Medicine, Hautepierre Hospital, Strasbourg, France

0427. **Metabolomic Assessment of Succinate Dehydrogenase Dysfunction in Pheochromocytomas and Paragangliomas by 1H-HRMAS NMR Spectroscopy: Clinical and Pathophysiological Implications**
Alessio Imperiale[1, 2], Stéphanie Battini[1], Philippe Roche[3], François-Marie Moussallieh[1], Ercument A Cicek[4], Frédéric Sebag[5], Laurent Brunaud[6], Anne Barlier[7], Karim Elbayed[1], Anderson Loundou[8], Philippe Bachellier[9], Bernard Goichot[10], Constantine A Stratakis[11, 12], Karel Pacak[13], David Taieb[14], Izzie-Jacques Namer[1, 2]
[1]ICube laboratory UMR 7357, University of Strasbourg/CNRS and FMTS, Strasbourg, France; [2]University Hospitals of Strasbourg, Department of Biophysics and Nuclear Medicine, Hautepierre Hospital, Strasbourg, France; [3]Integrative Structural & Chemical Biology (iSCB) & INT-3D Molecular Modeling Platform, Cancer Resear, CNRS UMR7258; INSERM U1068; Institut Paoli Calmettes; Aix-Marseille University UM105, Marseille, France; [4]Lane Center for Computational Biology, School of Computer Science, , Carnegie Mellon University, 5000 Forbes Ave, Pittsburgh, PA 15222 , United States; [5]Department of Endocrine Surgery, La Timone University Hospital, Aix-Marseille University, Marseille, France; [6]Department of Digestive, Hepato-Biliary and Endocrine Surgery, Brabois University Hospital, Nancy, France; [7]Laboratory of Biochemistry and Molecular Biology, Conception Hospital, Aix-Marseille, University, Marseille, France; [8]Department of Public Health, Aix-Marseille University, Marseille, France; [9]Department of Visceral Surgery and Transplantation, Hautepierre Hospital, University Hospitals of Strasbourg, Strasbourg, France; [10]Department of Internal Medicine, Diabetes and Metabolic Disorders, Hautepierre Hospital, University Hospitals of Strasbourg, Strasbourg, France; [11]Section on Genetics and Endocrinology (SEGEN), Program on Developmental Endocrinology and Genetics (PDEGEN), Bethesda, United States; [12]Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, United States; [13]Program in Reproductive and Adult Endocrinology, Eunice Kennedy Shriver National Institute of Child Health and Human Development, Bethesda, United States; [14]La Timone University Hospital, European Center for Research in Medical Imaging, Marseille, France

0428. **Adapting Volumetric 1H Echo-Planar Spectroscopic Imaging of the Human Brain from 3 to 7 Tesla**
Karim Snoussi[1, 2], Joseph S. Gillen[1, 2], Michael Schär[1, 2], Richard A.E. Edden[1, 2], Andrew A. Maudsley[3], Peter B. Barker[1, 2]
[1]Russel H. Morgan Department of Radiology and Radiological Science, Johns Hopkins University School of Medidine, Baltimore, MD, United States; [2]Kennedy Krieger Institute, Johns Hopkins University, Baltimore, MD, United States; [3]Miller School of Medicine, University of Miami, Miami, FL, United States

Biomarkers & Subtyping of Psychiatric Disorders

Room 701 A 16:00-18:00 *Moderators:* Hilleke E. Hulshoff Pol, Ph.D. & T.B.A.

16:00 0429. Demyelination Versus Increased Free Water in Schizophrenia: A Pilot Study Using Q-Space Trajectory Imaging

Markus Nilsson[1], Filip Szczepankiewicz[2], Danielle van Westen[3], Cecilia Mattisson[4], Mats Bogren[4], Ofer Pasternak[5], Marek Kubicki[5], Carl-Fredrik Westin[6, 7]

[1]Lund University Bioimaging Center, Lund University, Lund, Sweden; [2]Dept. of Medical Radiation Physics, Lund University, Lund, Sweden; [3]Diagnostic Radiology, Lund University, Lund, Sweden; [4]Clinical Sciences, Psychiatry, Lund University, Lund, Sweden; [5]Brigham and Women's Hospital, Harvard Medical School, MA, United States; [6]Brigham and Women's Hospital, Harvard Medical School,, MA, United States; [7]Dept. of Biomedical Engineering, Linköping University, Linköping, Sweden

16:12 0430. Dissecting Myelin and Axon Abnormalities in Schizophrenia and Bipolar Disorder Patients Using Novel MRI Approaches

Fei Du[1], Eve Lewandowski[1], Jackie Goldbatch[1], Dost Ongur[1]

[1]McLean Hospital, Harvard Medical School, Belmont, MA, United States

16:24 0431. Diffusion Spectrum Imaging Connectomics: A Biomarker for Staging in Psychotic Disorders

ISMRM MERIT AWARD magna cum laude

Alessandra Griffa[1, 2], Philipp S. Baumann[3, 4], Carina Ferrari[3, 4], Tanja Eric[3, 4], Philippe Conus[3, 4], Kim Q. Do[3, 4], Jean-Philippe Thiran[1, 2], Patric Hagmann, [12]

[1]Signal Processing Laboratory 5 (LTS5), École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; [2]Department of Radiology, Lausanne University Hospital (CHUV) and University of Lausanne, Lausanne, Switzerland; [3]Service of General Psychiatry and Center for Psychiatric Neuroscience, Lausanne University Hospital (CHUV) and University of Lausanne, Lausanne, Switzerland; [4]Naional Center of Competence in Research (NCCR) "SYNAPSY - The Synaptic Bases of Mental Diseases", Switzerland

16:36 0432. Topology of Structural Connectomes in Healthy Carriers of Common Gene Variants Associated with Schizophrenia

ISMRM MERIT AWARD summa cum laude

Mark Drakesmith[1, 2], Thomas Lancaster[2], Sonya Foley[1, 2], Lisa Brindley[1, 2], Derek K. Jones[1, 2], David Linden, [12]

[1]CUBRIC, Cardiff University, Cardiff, Wales, United Kingdom; [2]Neuroscience and Mental Health Research Institute, Cardiff University, Cardiff, Wales, United Kingdom

16:48 0433. Identification of a Schizophrenia-Related Disease Pattern Using Resting State fMRI

An Vo[1], Ivana De Lucia[1], Delbert G. Robinson[2, 3], Juan A. Gallego[2, 3], Peter B. Kingsley[4], Miklos M. Argyelan[2, 3], Anil K. Malhotra[2, 3], Aziz M. Ulug[1, 5], Philip R. Szeszko[2, 3]

[1]Center for Neurosciences, Feinstein Institute for Medical Research, Manhasset, NY, United States; [2]Center for Psychiatric Neuroscience, Feinstein Institute for Medical Research, NY, United States; [3]Psychiatry Research, Zucker Hillside Hospital, North Shore-LIJ Health System, , Glen Oaks, NY, United States; [4]Radiology, North Shore University Hospital, Manhasset, NY, United States; [5]Institute of Biomedical Engineering, Bogazici University, Istanbul, Turkey

17:00 0434. GluCEST in the Olfactory Cortex as a Marker of Heightened Clinical Risk for Schizophrenia

ISMRM MERIT AWARD summa cum laude

Ravi Prakash Reddy Nanga[1], David R. Roalf[2], Hari Hariharan[1], Mark A. Elliott[1], Karthik Prabhakaran[2], Megan Quarmley[2], Paul J. Moberg[2], Ravinder Reddy[1], Bruce I. Turetsky[2]

[1]Radiology, University of Pennsylvania Health Systems, Philadelphia, PA, United States; [2]Psychiatry, University of Pennsylvania, Philadelphia, PA, United States

17:12 0435. Characterization of Hemodynamic Alterations in Autism Using Resting State fMRI

ISMRM MERIT AWARD magna cum laude

Wenjing Yan[1], Gopikrishna Deshpande[1, 2]

[1]AU MRI Research Center,Department of Electrical and Computer Engineering, Auburn University, Auburn, AL, United States; [2]Department of Psychology, , Auburn University, AL, United States

17:24 0436. Relationship Between Structure and Function of the Auditory System Is Altered in 16p11.2 Deletion and Duplication

Jeffrey I. Berman[1, 2], Julian Jenkins[1], Darina Chudnovskaya[1], Srikantan Nagarajan[3], Pratik Mukherjee[3], Randy Buckner[4], John E. Spiro[5], Wendy K. Chung[6], Elliott H. Sherr[7], Timothy PL Roberts[1, 2]

[1]Radiology, Children's Hospital of Philadelphia, Philadelphia, PA, United States; [2]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [3]Radiology, University of California San Francisco, CA, United States; [4]Psychology, Harvard University, Boston, MA, United States; [5]Simons Foundation, NY, United States; [6]Pediatrics and Medicine, Columbia University Medical Center, NY, United States; [7]Neurology, University of California San Francisco, CA, United States

17:36 0437. Symptom-Based Subtypes of Major Depressive Disorder Manifest Distinct Nucleus Accumbens Hemodynamic Responses to Reward and Punishment

Masaya Misaki[1], Teresa Victor[1], Hideo Suzuki[1], Kent Teague[2], Brett McKinney[3], Jonathan Savitz[1, 4], Wayne Drevets[1, 5], Jerzy Bodurka[1, 6]

[1]Laureate Institute for Brain Research, Tulsa, OK, United States; [2]Dept. of Surgery, University of Oklahoma College of Medicine, OK, United States; [3]Tandy School of Computer Science, Dept. of Mathematics, University of Tulsa, OK, United States; [4]Dept. of Medicine, Tulsa School of Community Medicine, University of Tulsa, OK, United States; [5]Janssen Pharmaceuticals, LLC, of Johnson & Johnson, Inc., Titusville, NJ, United States; [6]College of Engineering, University of Oklahoma, OK, United States

17:48 0438. The Long-Term Effects of Marijuana Use on the Brain

Sina Aslan[1, 2], Vince Calhoun[3], Jeffrey Spence[2], Francesca Filbey[2]

[1]Advance MRI, LLC, Frisco, TX, United States; [2]University of Texas at Dallas, Dallas, TX, United States; [3]The Mind Research Network, Albuquerque, NM, United States

Relaxometry - Methods & Corrections

Room 701 B 16:00-18:00 *Moderators:* Sean C. L. Deoni, Ph.D. & Marcel Warntjes, Ph.D.

16:00 0439. Simultaneous Quantitative Mapping of T_1, T_2*, and Magnetic Susceptibility with Multi-Echo MP2RAGE at 7 T

ISMRM MERIT AWARD magna cum laude

Riccardo Metere[1], Harald E. Möller[1], Gunnar Krüger[2, 3], Tobias Kober[2, 3], Andreas Schäfer[1]

[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; [2]Siemens ACIT – CHUV Radiology, Siemens Healthcare IM BM PI & Department of Radiology CHUV, Lausanne, Switzerland; [3]LTS5, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland

16:12 0440. Fast T_1 Mapping Using Slice-Shuffled Simultaneous Multi-Slice Inversion Recovery EPI

Hua Wu[1], Robert F. Dougherty[1], Adam B. Kerr[2], Kangrong Zhu[2], Matthew J. Middione[3], Aviv Mezer[4]

[1]Center for Cognitive and Neurobiological Imaging, Stanford University, Stanford, CA, United States; [2]Electrical Engineering, Stanford University, Stanford, CA, United States; [3]Applied Sciences Laboratory West, GE Healthcare, Menlo Park, CA, United States; [4]Psychology, Stanford University, Stanford, CA, United States

16:24 0441. T2-Snapshots Imaging with Simultaneous Multislice TESS Acquisition

Orso Pusterla[1], Francesco Santini[1], Rahel Heule[1], Oliver Bieri[1]

[1]Radiological Physics, Department of Radiology, University of Basel Hospital, Basel, Switzerland

16:36 0442. Artifact-Free T2* Mapping Without Post Hoc Corrections

Pippa Storey[1], Yvonne W. Lui[1], Dmitry S. Novikov[1]

[1]Radiology Department, New York University School of Medicine, New York, NY, United States

16:48 0443. Fast Dynamic Measurements of T_1 Relaxation Times: Influence and Correction of T_2* Effects

Olaf Dietrich[1], Maximilian Freiermuth[1], Linus Willerding[2], Michael Peller[1], Maximilian F. Reiser[1]

[1]Josef Lissner Laboratory for Biomedical Imaging, Institute for Clinical Radiology, LMU Ludwig Maximilian University of Munich, Munich, Germany; [2]Department of Internal Medicine III, LMU Ludwig Maximilian University of Munich, Munich, Germany

17:00 0444. ΔB_0 Correction for Myelin Water Fraction Imaging Based on Multi-Slice MGRE Acquisitions

ISMRM MERIT AWARD magna cum laude

Eva Alonso Ortiz[1], Ives R. Levesque[2, 3], G. Bruce Pike[4]

[1]McConnell Brain Imaging Centre, Montreal Neurological Institute, McGill University, Montreal, Quebec, Canada; [2]Medical Physics Unit, Department of Oncology, McGill University, Montreal, Quebec, Canada; [3]Research Institute of the McGill University Health Centre, McGill University, Montreal, Quebec, Canada; [4]Department of Radiology and Hotchkiss Brain Institute, University of Calgary, Alberta, Canada

17:12 0445. Encoding with Radiofrequency Spoiling, Equilibrium States and Inverse Problem for Parametric Mapping

Ludovic de Rochefort[1]

[1]IR4M (Imagerie par Résonance Magnétique Médicale et Multi-modalités), Univ. Paris-Sud, CNRS, UMR8081, Orsay, France

17:24 0446. The Effect of Macroscopic Field Gradients on the Simultaneous Estimation of Reversible and Irreversible Transverse Relaxation Rates

Mukund Balasubramanian[1, 2], Robert V. Mulkern[1, 2]

[1]Department of Radiology, Boston Children's Hospital, Boston, MA, United States; [2]Harvard Medical School, Boston, MA, United States

17:36 **0447.** **Simultaneous Group-Wise Rigid Registration and Maximum Likelihood T_1 Estimation for T_1 Mapping**

ISMRM MERIT AWARD magna cum laude

Gabriel Ramos-Llordén[1], Arnold J. den Dekker[1, 2], Gwendolyn Van Steenkiste[1], Johan Van Audekerke[3], Marleen Verhoye[3], Jan Sijbers[1]
[1]iMinds-Vision Lab, University of Antwerp, Antwerp, Belgium; [2]Delft Center for Systems and Control, Delft University of Technology, Delft, Netherlands; [3]Bio-Imaging Lab, University of Antwerp, Antwerp, Belgium

17:48 **0448.** **Field Probes with In-Situ Controllable Thermal Relaxation Times**

ISMRM MERIT AWARD magna cum laude

David O. Brunner[1], Simon Gross[1], Jennifer Nussbaum[1], Benjamin E. Dietrich[1], Christoph Barmet[1, 2], Klaas P. Pruessmann[1]
[1]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [2]Skope Magnetic Resonance Technologies LLC, Zurich, Switzerland

Let It Flow

Room 714 A/B 16:00-18:00 *Moderators:* Susanne Schnell, Ph.D. & T.B.A.

16:00 **0449.** **Correction of Background Phase Offsets in Phase-Contrast MRI Using Concurrent Magnetic Field Monitoring.**

ISMRM MERIT AWARD summa cum laude

Daniel Giese[1, 2], Bertram Wilm[2, 3], Julia Busch[2], David Maintz[1], Christoph Barmet[2, 3], Klaas Pruessmann[2], Sebastian Kozerke[2]
[1]Radiology, University Hospital Cologne, Cologne, Germany; [2]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [3]Skope Magnetic Resonance Technologies, Zurich, Switzerland

16:12 **0450.** **Reproducibility of Phase-Contrast MRI in the Coronary Artery: Towards Noninvasive Pressure Gradient Measurement and Quantification of Fractional Flow Reserve**

ISMRM MERIT AWARD summa cum laude

Zixin Deng[1, 2], Yang Qi[2], Xiaoming Bi[3], Zhaoyang Fan[2], Debiao Li, [12]
[1]Bioengineering, University of California, Los Angeles, Los Angeles, CA, United States; [2]Biomedical Imaging Research Institute (BIRI), Cedars-Sinai Medical Center, Los Angeles, CA, United States; [3]R&D, Siemens Healthcare, Los Angeles, CA, United States

16:24 **0451.** **Soft-Gated Accelerated Cartesian 4D Flow Imaging with Intrinsic Navigation**

ISMRM MERIT AWARD summa cum laude

Joseph Y. Cheng[1, 2], Marcus T. Alley[2], Tao Zhang[1, 2], Peng Lai[3], Jonathan I. Tamir[4], Martin Uecker[4], John M. Pauly[1], Michael Lustig[4], Shreyas S. Vasanawala[2]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Radiology, Stanford University, Stanford, CA, United States; [3]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [4]Electrical Engineering and Computer Sciences, University of California, Berkeley, CA, United States

16:36 **0452.** **Aortic Stiffness, Cardiac Energetic, Systolic and Diastolic Function in Healthy Ageing.**

ISMRM MERIT AWARD summa cum laude

Jehill D. Parikh[1], Kieren G. Hollingsworth[1], Andrew M. Blamire[1], Guy MacGowan[2]
[1]Newcastle Magnetic Resonance Centre, Newcastle University, Newcastle upon Tyne, Tyne and Wear, United Kingdom; [2]Cardiology, Freeman Hospital, Newcastle Upon Tyne, Tyne and Wear, United Kingdom

16:48 **0453.** **3D Quantification of Vorticity and Helicity from 4D Flow Data Using Finite Element Interpolations**

ISMRM MERIT AWARD summa cum laude

Julio Sotelo[1, 2], Jesus Urbina[1, 3], Israel Valverde[4, 5], Cristian Tejos[1], Pablo Irarrazaval[1], Daniel E. Hurtado[2, 6], Sergio Uribe[1, 3]
[1]Biomedical Imaging Center, Electrical Engineering Department, Pontificia Universidad Catolica de Chile, Santiago, RM, Chile; [2]Structural and Geotechnical Engineering Departement, Pontificia Universidad Catolica de Chile, Santiago, RM, Chile; [3]Radiology Department, School of Medicine, Pontificia Universidad Catolica de Chile, Santiago, Chile; [4]Pediatric Cardiology Unit, Hospital Virgen del Rocio, Seville, Spain; [5]Cardiovascular Pathology Unit, Institute of Biomedicine of Seville (IBIS), Hospital Virgen del Rocio, Seville, Spain; [6]Biomedical Engineering Group, Pontificia Universidad Catolica de Chile, Santiago, Chile

17:00 **0454.** **Reproducibility of Advanced Velocity and Wall Shear Stress Quantification Techniques Derived from 4D Flow MRI in the Pathological Aorta**

ISMRM MERIT AWARD summa cum laude

Pim van Ooij[1], Wouter V. Potters[1], Jeremy D. Collins[2], James C. Carr[2], S Chris Malaisrie[3], Patrick M. McCarthy[4], Michael Markl[2], Alex J. Barker[2]

[1]Radiology, Academic Medical Center, Amsterdam, Netherlands; [2]Radiology, Northwestern University, Chicago, IL, United States; [3]Medicine-Cardiology, Northwestern University, Chicago, IL, United States; [4]Division of Cardiac Surgery, Northwestern University, Chicago, IL, United States

17:12 **0455.** **4D Flow Based Characterization of Aortic Morphometry and Flow Parameters: Impact of Age, Aortic Dilatation and Valve Morphology**

ISMRM MERIT AWARD magna cum laude

Julio Garcia[1], Alex J Barker[1], Ian Murphy[1], Kelly B Jarvis[1], Alex L Powell[1], Susanne Schnell[1], Jeremy Collins[1], James Carr[1], S Chris Malaisrie[2], Michael Markl[1, 3]
[1]Radiology, Northwestern University, Chicago, IL, United States; [2]Division of Cardiothoracic Surgery, Northwestern University, Chicago, IL, United States; [3]Biomedical Engineering, Northwestern University, Evanston, IL, United States

17:24 **0456.** **Longitudinal Monitoring of Hepatic Blood Flow in Patients with Portal Hypertension Before and After TIPS Implantation with 4D Flow MRI**

Peter Bannas[1, 2], Alejandro Roldán-Alzate[1], Kevin M. Johnson[3], Michael A. Woods[1], Utaroh Motosugi[1], Oliver Wieben[3], Scott B. Reeder[1, 3], Harald Kramer[1, 4]
[1]Radiology, University of Wisconsin-Madison, Madison, WI, United States; [2]Radiology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [3]Medical Physics, University of Wisconsin-Madison, WI, United States; [4]Radiology, Ludwig-Maximilians-University Hospital, Munich, Bavaria, Germany

17:36 **0457.** **Quantitative Assessment of Splenic Hemodynamics at 4D Flow MRI in the Evaluation of Thrombocytopenia: A Pilot Study in Cirrhotic Patients with Portal Hypertension**

Jeremy Douglas Collins[1], Jad Bou Ayache[2], Edouard Semaan[3], Riad Salem[4], James Christian Carr[3], Michael Markl[3], Zoran Stankovic[5]
[1]Radiology, Northwestern University, Chicago, IL, United States; [2]Radiology, Icahn School of Medicine at Mount Sinai, NY, United States; [3]Northwestern University, IL, United States; [4]Radiology, Northwestern University, IL, United States; [5]Radiology, University Hospital, Freiberg, Germany

17:48 **0458.** **Highly Accelerated Intracranial 4D Flow MRI with CIRcular Cartesian UnderSampling (CIRCUS)**

Jing Liu[1], Farshid Faraji[1], Sarah Kefayati[1], Henrik Haraldsson[1], David Saloner[1, 2]
[1]Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [2]Radiology Service, VA Medical Center, San Francisco, CA, United States

Renal/Adrenal/Male Pelvis MRI

Room 716 A/B 16:00-18:00 *Moderators:* Rotem S. Lanzman, Ph.D. & Pottumarthi V. Prasad, Ph.D.

16:00 **0459.** **Ferumoxytol Enhanced T_2* Mapping for Combined Renal Oxygenation and Blood Volume Assessment at 9.4T**

Andreas Pohlmann[1], Karen Arakelyan[1], Till Huelnhagen[1], Kathleen Cantow[2], Stefanie Kox[1], Yvonne Balke[1], Bert Flemming[2], Erdmann Seeliger[2], Thoralf Niendorf[1, 3]
[1]Berlin Ultrahigh Field Facility, Max Delbrueck Center for Molecular Medicine, Berlin, Germany; [2]Institute of Physiology and Center for Cardiovascular Research, Charite-Universitaetsmedizin Berlin, Berlin, Germany; [3]Experimental and Clinical Research Center, Charite-Universitaetsmedizin Berlin, Berlin, Germany

16:12 **0460.** **Detection of Macrophage-Based Inflammation Following Renal Ischemia Reperfusion Injuries Using Super-Paramagnetic Iron Oxide (SPIO) Nanoparticles in T2-Weighted MRI.**

ISMRM MERIT AWARD summa cum laude

B G. Hammond[1], J C. Montejano[2], J M. Poth[2], K M. Huber[2], M Stukova[2], D Golovko[3], N J. Serkova[2]
[1]University of Arizona College of Medicine - Phoenix, Phoenix, AZ, United States; [2]University of Colorado Anschutz Medical Campus, Aurora, CO, United States; [3]Good Samaritan Medical Center, MA, United States

16:24 **0461.** **Relating Iodixanol-Induced Renal T_2* Changes to Tissue PO_2 by Comparison with Near-Infrared Spectroscopy and Invasive Physiological Measurements**

Andreas Pohlmann[1], Karen Arakelyan[1, 2], Dirk Grosenick[3], Kathleen Cantow[2], Heidrun Wabnitz[3], Bert Flemming[2], Rainer Macdonald[3], Erdmann Seeliger[2], Thoralf Niendorf[1, 4]
[1]Berlin Ultrahigh Field Facility, Max Delbrueck Center for Molecular Medicine, Berlin, Germany; [2]Institute of Physiology and Center for Cardiovascular Research, Charite-Universitaetsmedizin Berlin, Berlin, Germany; [3]Physikalisch-Technische Bundesanstalt (PTB), Berlin, Germany; [4]Experimental and Clinical Research Center, Charite-Universitaetsmedizin Berlin, Berlin, Germany

16:36 **0462.** **Measuring Single Nephron Filtration with Molecular MRI**

ISMRM MERIT AWARD summa cum laude

Edwin J. Baldelomar[1], Jennifer Charlton[2], Kevin M. Bennett[3]
[1]Physics, University of Hawaii at Manoa, Honolulu, HI, United States; [2]University of Virginia, VA, United States; [3]Biology, University of Hawaii at Manoa, HI, United States

16:48 **0463.** **Susceptibility Tensor Imaging Reveals Reduced Anisotropy in Renal Nephropathy**

ISMRM MERIT AWARD magna cum laude

Luke Xie[1], Russell Dibb[1, 2], Susan B. Gurley[3], Chunlei Liu, [14], G. Allan Johnson[1, 2]
[1]Center for In Vivo Microscopy, Duke University Medical Center, Durham, NC, United States; [2]Biomedical Engineering, Duke University, Durham, NC, United States; [3]Division of Nephrology, Department of Medicine, Duke University and Durham VA Medical Centers, Durham, NC, United States; [4]Brain Imaging Analysis Center, Duke University Medical Center, Durham, NC, United States

17:00 **0464.** **Full 3D Renal BOLD MRI in Clinically Realistic Scan Times with 2D Volume Selective Excitation**

Glen Morrell[1], Josh Kaggie[1], Vivian S. Lee[1]
[1]Utah Center for Advanced Imaging Research, University of Utah, Salt Lake City, UT, United States

17:12 **0465.** **Image Registration with the Generalized Hough Transform as Part of a Free Toolkit Is an Efficient and Robust Technique for Improving the Reliability of Parameter Estimates Obtained from Free-Breathing MR Renography**

ISMRM MERIT AWARD magna cum laude

Christopher C. Conlin[1], Jeff L. Zhang[1, 2], Florian Rousset[3, 4], Clement Vachet[3], Yangyang Zhao[5], Daniel Kim[1], Glen Morrell[1, 2], Kathryn A. Morton[2], Guido Gerig[3], Vivian S. Lee[1, 2]
[1]Utah Center for Advanced Imaging Research, University of Utah, Salt Lake City, UT, United States; [2]Department of Radiology, University of Utah School of Medicine, Salt Lake City, UT, United States; [3]Scientific Computing and Imaging Institute, Salt Lake City, UT, United States; [4]CPE Lyon, Lyon, France; [5]Department of Bioengineering, University of Utah, Salt Lake City, UT, United States

17:24 **0466.** **Radial R2* Distribution : A New Method to Analyze BOLD MRI of Kidneys**

Bastien Milani[1, 2], Maciej Piskunowicz[1, 3], Isabelle Bassi[1], Christiane Anex[1], Bruno Vogt[1, 4], Matthias Stuber, [25], Michel Burnier[1], Menno Pruijm[1]
[1]Department of Nephrology and Hypertension, CHUV, Lausanne, Switzerland; [2]Center for Biomedical Imaging (CIBM), Lausanne, Switzerland; [3]Department of Radiology, Medical University of Gdansk, Gdansk, Poland; [4]Department of Nephrology and Hypertension, Bern University Hospital, Bern, Switzerland; [5]Department of Radiology, University Hospital (CHUV) and University of Lausanne (UNIL), Lausanne, Switzerland

17:36 **0467.** **Assessment of Renal Allograft Fibrosis with Magnetic Resonance Elastography in Kidney Transplantation Patients**

Nan Jiang[1], General Leung[2, 3], Serge Jothy[4], Darren A. Yuen, [35], Anish Kirpalani[2, 3]
[1]Faculty of Medicine, University of Toronto, Toronto, ON, Canada; [2]Department of Medical Imaging, St. Michael's Hospital, University of Toronto, Toronto, ON, Canada; [3]Keenan Research Centre, St. Michael's Hospital, Toronto, ON, Canada; [4]Department of Pathology, St. Michael's Hospital, Toronto, ON, Canada; [5]Division of Nephrology, St. Michael's Hospital, Toronto, ON, Canada

17:48 **0468.** **Evaluation of Multi-Modality Renal Functional MRI in Healthy Volunteers and Lupus Nephritis Patients**

Stanislas Rapacchi[1, 2], Robert X. Smith[3], Yi Wang[3], Lirong Yan[3], Victor Sigalov[4], Elizabeth Hernandez[5], Ajay Verma[6], Nicolas Wisniacki[7], Jaime Torrington[6], Xiang He[8], Peng Hu[4], George Karpouzas[5], Ping-Chun Chiao[6], Danny JJ Wang[3]
[1]CRMBM, Aix-Marseille University, Marseille, France; [2]Radiology, UCLA, Los Angeles, CA, United States; [3]Neurology, UCLA, CA, United States; [4]Radiology, UCLA, CA, United States; [5]Rheumatology, Harbor-UCLA Medical Center, CA, United States; [6]Biogen Idec, Cambridge, MA, United States; [7]Biogen Idec, MA, United States; [8]University of Pittsburg, PA, United States

Diffusion Biophysics & Microstructure

Constitution Hall 105/106/107 16:00-18:00 *Moderators:* Silvia Capuani, Ph.D. & Dmitry Novikov, Ph.D.

16:00 **0469.** **From Diffusion Signal Moments to Neurite Diffusivities, Volume Fraction and Orientation Distribution: An Exact Solution**

Dmitry S. Novikov[1], Ileana O. Jelescu[2], Els Fieremans[1]
[1]Center for Biomedical Imaging, Department of Radiology, NYU School of Medicine, New York, NY, United States; [2]Center for Biomedical Imaging, Department of Radiology , NYU School of Medicine, New York, NY, United States

16:12 0470. TractCaliber: Axon Diameter Estimation Across White Matter Tracts in the *In Vivo* Human Brain Using 300 MT/m Gradients

Susie Y. Huang[1], Thomas Witzel[1], Qiuyun Fan[1], Jennifer A. McNab[2], Lawrence L. Wald[1, 3], Aapo Nummenmaa[1]
[1]Athinoula A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Charlestown, MA, United States; [2]Radiological Sciences Laboratory, Department of Radiology, Stanford University, Stanford, CA, United States; [3]Harvard-MIT Division of Health Sciences and Technology, Massachusetts Institute of Technology, Cambridge, MA, United States

16:24 0471. Microstructural Information from Single-Pulsed-Field-Gradient and Angular Double-Pulsed-Field-Gradient NMR: From Model Systems to Nerves

Darya Morozov[1], Leah Bar[1], Nir Sochen[1], Yoram Cohen[1]
[1]The Raymond and Beverly Sackler Faculty of Exact Science, Tel-Aviv University, Tel-Aviv Yaffo, Israel

16:36 0472. Improving the Interpretation of Diffusional Kurtosis by Resolving Effects of Isotropic and Anisotropic Microstructures

ISMRM MERIT AWARD magna cum laude

Filip Szczepankiewicz[1], Danielle van Westen[2, 3], Jimmy Lätt[2], Elisabet Englund[3], Carl-Fredrik Westin[4], Freddy Ståhlberg[1, 3], Pia C. Sundgren, [23], Markus Nilsson[5]
[1]Dept. of Medical Radiation Physics, Lund University, Lund, Sweden; [2]Imaging and Function, Skåne University Healthcare, Lund, Sweden; [3]Dept. of Clinical Sciences, Lund University, Skåne University Healthcare, Lund, Sweden; [4]Dept. of Radiology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, United States; [5]Lund University Bioimaging Center, Lund University, Lund, Sweden

16:48 0473. Localizing and Characterizing Single Fiber Populations Throughout the Brain

Chantal M.W. Tax[1], Dmitry S. Novikov[2], Eleftherios Garyfallidis[3], Max A. Viergever[1], Maxime Descoteaux[3], Alexander Leemans[1]
[1]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands; [2]Center for Biomedical Imaging, New York University School of Medicine, New York, United States; [3]Sherbrooke Connectivity Imaging Lab, Université de Sherbrooke, Sherbrooke, Quebec, Canada

17:00 0474. Modelling Free Water in Diffusion MRI

Emmanuel Vallée[1], Gwenaëlle Douaud[1], Andreas U. Monsch[2], Achim Gass[3], Wenchuan Wu[1], Stephen M. Smith[1], Saad Jbabdi[1]
[1]FMRIB, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]Memory Clinic, University Center for Medicine of Aging Basel, Basel, Switzerland; [3]Department of Neurology, University Hospital Mannheim, Heidelberg, Germany

17:12 0475. The Effect of White Matter Perfusion on Diffusion MRI Based Microstructural Tissue Models

ISMRM MERIT AWARD magna cum laude

Sjoerd B. Vos[1], Andrew Melbourne[1], Hui Zhang[2], John S. Duncan[3], Sebastien Ourselin[1]
[1]Translational Imaging Group, University College London, London, United Kingdom; [2]Centre for Medical Image Computing, University College London, London, United Kingdom; [3]Department of Clinical and Experimental Epilepsy, Institute of Neurology, University College London, London, United Kingdom

17:24 0476. Microscopic Diffusion Anisotropy Imaging: An *Ex-Vivo* Hypomyelination Mouse Study

Enrico Kaden[1], Nathaniel D. Kelm[2], Robert P. Carson[3], Mark D. Does[2], Daniel C. Alexander[1]
[1]Centre for Medical Image Computing, University College London, London, United Kingdom; [2]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [3]Departments of Neurology and Pediatrics, Vanderbilt University, Nashville, TN, United States

17:36 0477. Validation of NODDI Estimation of Dispersion Anisotropy in V1 of the Human Neocortex

ISMRM MERIT AWARD magna cum laude

Maira Tariq[1], Michiel Kleinnijenhuis[2], Anne-Marie van Cappellen van Walsum[3, 4], Hui Zhang[1]
[1]Department of Computer Science & Centre for Medical Image Computing, University College London, London, England, United Kingdom; [2]FMRIB Centre, University of Oxford, Oxford, United Kingdom; [3]Department of Anatomy, Radbound University, Nijmegen Medical Centre, Nijmegen, Netherlands; [4]MIRA Institute for Biomedical Technology and Technical Medicine, Enschede, Netherlands

17:48 0478. Human *In Vivo* Myeloarchitecture Using Whole-Brain Diffusion MRI

Fernando Calamante[1], Ben Jeurissen[2], Robert Elton Smith[1], Jacques-Donald Tournier[3, 4], Alan Connelly[1]

[1]The Florey Institute of Neuroscience and Mental Health, University of Melbourne, Melbourne, Victoria, Australia; [2]iMinds-Vision Lab, Dept. of Physics, University of Antwerp, Belgium; [3]Centre for the Developing Brain, King's College London, London, United Kingdom; [4]Department of Biomedical Engineering, King's College London, London, United Kingdom

Brain Tumor Imaging - Focus on PET-MRI

John Bassett Theatre 102 16:00-18:00 *Moderators:* N. Jon Shah, Ph.D. & Greg Zaharchuk, M.D., Ph.D.

16:00 0479. Combined Functional and Metabolic Assessment of Brain Tumors Using Hybrid MR-PET Imaging

Beatrice Sacconi[1], Roy Raad[2], Joon Lee[3], Howard Fine[4], John Golfinos[5], Girish Manokar Fatterpekar[6], Fernando Boada[7], Kent Friedman[3], James Babb[3], Rajan Jain[3]

[1]Radiological, Oncological and Anatomopathological Sciences, Sapienza University of Rome, Policlinico Umberto I, Rome, Italy; [2]Radiology, NYU School of medicine, New York, United States; [3]Radiology, NYU School of Medicine, New York, United States; [4]Neuro-oncology, NYU Langone Medical Center, New York, United States; [5]Neurosurgery, NYU Langone Medical Center, New York, United States; [6]Radiology, NYU Langone Medical Center, New York, United States; [7]Neurosurgery, Psichiatry and Radiology, NYU Langone Medical Center, New York, United States

16:12 0480. Multimodal MR/PET Imaging for Characterization of Hypoxia in Human Glioblastoma

Christine Preibisch[1, 2], Mathias Lukas[3], Anne Kluge[1], Severin Keinath[3], Vivien Tóth[1, 4], Kuangyu Shi[3], Thomas Pyka[3], Stefan Förster[3]

[1]Department of Neuroradiology, Klinikum rechts der Isar der TU München, Munich, Germany; [2]Clinic for Neurology, Klinikum rechts der Isar der TU München, Munich, Germany; [3]Department of Nuclear Medicine, Klinikum rechts der Isar der TU München, Munich, Germany; [4]Department of Radiology, Klinikum rechts der Isar der TU München, Munich, Germany

16:24 0481. Neuroimaging Based (PET and MR) Measurements of Cerebral Oxygen Extraction Fraction (OEF) in Patients with Brain Tumors

Parinaz Massoumzadeh[1], Safa Najmi[2], Jonathan McConathy[1], Andrei Vlassenko[1], An Hongyu[3], Yi Su[1], Daniel Marcus[1], Keith Rich[4], Tammie Benzinger[1]

[1]Mallinckrodt Institute of Radiology, Washington University in St. Louis, School of Medicine, St. Louis, MO, United States; [2]Department of of Neurology, Tabriz Medical University, Tabriz, East Azarbaijan, Iran; [3]Department of Radiology, University of North Carolina, Chapel Hill, NC, United States; [4]Neurological Surgery, Washington University in St. Louis, School of Medicine, St. Louis, MO, United States

16:36 0482. Automatic Internal Carotid Arteries Segmentation for Estimation of an Image Derived Input Function with MR-PET

ISMRM MERIT AWARD magna cum laude

Nuno André da Silva[1], Liliana Lourenco Caldeira[1], Jörg Mauler[1], Hans Herzog[1], N Jon Shah[1, 2]

[1]Institute of Neuroscience and Medicine - 4, Forschungszentrum Jülich, Jülich, Germany; [2]JARA - Faculty of Medicine, RWTH Aachen University, Aachen, Germany

16:48 0483. Comparison of DTI and 11C-Methionine PET for Reliable Prediction of Tumor Cell Density in Gliomas

Manabu Kinoshita[1], Hideyuki Arita[2], Naoki Kagawa[2], Yoshiyuki Watanabe[3], Jun Hatazawa[4], Naoya Hashimoto[2], Toshiki Yoshimine[2]

[1]Neurosurgery, Osaka Medical Center for Cancer and Cardiovascular Diseases, Osaka, Japan; [2]Neurosurgery, Osaka University Graduate School of Medicine, Suita, Osaka, Japan; [3]Radiology, Osaka University Graduate School of Medicine, Suita, Osaka, Japan; [4]Nuclear Medicine and Tracer Kinetics, Osaka University Graduate School of Medicine, Suita, Osaka, Japan

17:00 0484. pH-Weighted Molecular MRI in Brain Tumors

Benjamin M. Ellingson[1, 2], Robert J. Harris[3], William H. Yong[4], Whitney Pope[3], Debiao Li[5], Linda M. Liau[6], Timothy F. Cloughesy[7]

[1]Radiology, UCLA, Los Angeles, CA, United States; [2]Psychiatry & Biobehavioral Sciences, UCLA, CA, United States; [3]Radiology, UCLA, CA, United States; [4]Pathology, UCLA, CA, United States; [5]Biomedical Sciences and Imaging, Cedars-Sinai Medical Center, CA, United States; [6]Neurosurgery, UCLA, CA, United States; [7]Neurology, UCLA, CA, United States

17:12 0485. Applying a Length and Offset Varied Saturation (LOVARS) CEST Method for Imaging Cerebral Glioma

ISMRM MERIT AWARD summa cum laude

Xiaolei Song[1], Yan Bai[2], Erning Zhang[2], Xiaowei He[1, 3], Panli Zuo[4], Dapeng Shi[2], Michael T. McMahon[1], Benjamin Schmitt[5], Meiyun Wang[2]

[1]The Russell H. Morgan Department of Radiology and Radiological Science, The Johns Hopkins University, Baltimore, MD, United States; [2]Department of Radiology, Henan Provincial People¡¯s Hospital, Zhengzhou, Henan, China; [3]School of Information Sciences and Technology, Northwest University, Xi'an, Shaanxi, China; [4]MR Collaborations NE Asia, Siemens Healthcare, Beijing, China; [5]Healthcare Sector, Siemens Ltd Australia, Macquarie Park, Australia

17:24 **0486.** **The Role of Preoperative Functional MRI in Brain Tumour Resection by Awake Craniotomy: Initial Experience in 20 Glioma Patients**

ISMRM MERIT AWARD summa cum laude

Melanie Morrison[1, 2], Laleh Golestanirad[3, 4], Fred Tam[1], Gregory Hare[5, 6], Marco Garavaglia[6], Simon Graham[1, 2], Sunit Das[5, 7]

[1]Physical Sciences, Sunnybrook Research Institute, Toronto, Ontario, Canada; [2]Medical Biophysics , University of Toronto, Toronto, Ontario, Canada; [3]Martinos Center for Biomedical Imaging, Harvard Medical School, Charlestown, MA, United States; [4]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [5]Keenan Research Centre, St. Michael's Hospital, Toronto, Ontario, Canada; [6]Department of Anesthesia, St. Michael's Hospital, Toronto, Ontario, Canada; [7]Division of Neurosurgery, St. Michael's Hospital, Toronto, Ontario, Canada

17:36 **0487.** **Simultaneous Measurement of DSC- And DCE-MRI Parameters Using Dual-Echo Spiral with a Standard Dose of Gadolinium in Comparison to Single-Echo GRE-EPI Methods in Brain Tumors**

Kathleen M. Schmainda[1], Melissa Prah[2], Leslie C. Baxter[3], Eric S. Paulson, Sharmeen Maze[3], James Pipe[3], Dingui Wang[3], Josef Debbins[3], Leland Hu[4]

[1]Radiology, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Radiology, Medical College of Wisconsin, WI, United States; [3]Barrow Neurological Institute, Phoenix, AZ, United States; [4]Mayo Clinic, Scottsdale, AZ, United States

17:48 **0488.** **Time-Shift Resting-State Functional Connectivity MRI in Supratentorial Glioma, a Preliminary Study**

Jianrui Li[1], Qiang Xu[2], Zhiqiang Zhang[1], Guangming Lu[1]

[1]Medical Imaging, Jingling Hospital, School of Medicine, Nanjing University, Nanjing, Jiangsu, China; [2]Medical Imaging, Jingling Hospital, School of Medicine, Nanjing, Jiangsu, China

System Monitoring & Correction

Room 718 A 16:00-18:00 *Moderators:* Seung-Kyun Lee, Ph.D. & Maxim Zaitsev, Ph.D.

16:00 **0489.** **Motion-Insensitive Sequence for Single-Voxel Determination of B_1^+ by Bloch-Siegert Shift in Moving Organs Including the Human Heart**

Ayse Sila Dokumaci[1], Bertrand Pouymayou[1], Roland Kreis[1], Chris Boesch[1]

[1]Depts. Radiology and Clinical Research, University Bern, Bern, Switzerland

16:12 **0490.** **Large Dynamic Range Relative B1+ Mapping**

Francesco Padormo[1], Aaron T. Hess[2], Paul Aljabar[1], Peter Jezzard[3], Matthew D. Robson[2], Joseph V. Hajnal[1, 4], Peter J. Koopmans[3]

[1]Division of Imaging Sciences and Biomedical Engineering, King's College London, London, United Kingdom; [2]Department of Cardiovascular Medicine, University of Oxford, Oxford, United Kingdom; [3]FMRIB Centre, Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, United Kingdom; [4]Centre for the Developing Brain, King's College London, London, United Kingdom

16:24 **0491.** **Rapid MRI System Calibration Using 3DREAM**

ISMRM MERIT AWARD magna cum laude

Daniel Brenner[1], Rüdiger Stirnberg[1], Eberhard Daniel Pracht[1], Tony Stöcker[1, 2]

[1]German Center for Neurodegenerative Diseases (DZNE), Bonn, Germany; [2]Department of Physics and Astronomy, University of Bonn, Bonn, Germany

16:36 **0492.** **Validation of Variable Flip Angle Imaging-Based Simultaneous B1+ and T1 Mapping in the Prostate at 3T**

Novena A. Rangwala[1], Isabel M. Dregely[1], Holden H. Wu[1], Kyunghyun Sung[1]

[1]Department of Radiological Sciences, University of California Los Angeles, Los Angeles, CA, United States

16:48 **0493.** **Direct Calculation of $B1^+$ and $B1^-$ from Two Point Variable Flip Angle Data for Quantitative T1 and PD Mapping**

Simon Baudrexel[1, 2], Ulrike Noeth[2], Sarah Reitz[1, 2], Johannes Christian Klein[1, 2], Ralf Deichmann[2]

[1]Department of Neurology, Goethe University Frankfurt, Frankfurt am Main, Germany; [2]Brain Imaging Center (BIC), Goethe University Frankfurt, Frankfurt am Main, Germany

17:00 **0494.** **B0 Changes Around the Head Induced by the Cardiac Cycle at 7T**

Lennart J. Geurts[1], Vincent O. Boer[1], Tijl A. van der Velden[1], Peter R. Luijten[1], Dennis W.J. Klomp[1], Jaco J.M. Zwanenburg[1]

[1]Radiology, UMC Utrecht, Utrecht, Netherlands

17:12 **0495.** **Investigating the Potential of Highly Accelerated FatNavs for Dynamic Shimming**

ISMRM MERIT AWARD magna cum laude

Frédéric Gretsch[1], José P. Marques[2], Rolf Gruetter[1], [3], Daniel Gallichan[1]
[1]CIBM, EPFL, Lausanne, Vaud, Switzerland; [2]Dept. of Radiology, University of Lausanne, Vaud, Switzerland; [3]Depts. of Radiology, Universities of Lausanne and Geneva, Vaud, Switzerland

17:24 **0496.** **Automatic Virtual Shimming for Robust Fat Suppression in Subtractionless First-Pass Peripheral Angiography**

Holger Eggers[1], Tim Leiner[2]
[1]Philips Research, Hamburg, Germany; [2]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands

17:36 **0497.** **Fast B1 Inhomogeneity Correction in BSSFP Imaging Using Transient-State Signal**

Min-Oh Kim[1], Dong-Hyun Kim[1]
[1]Electrical and electronic engineering, Yonsei University, Seoul, Korea

17:48 **0498.** **Respiration Induced B0 Variation in Double Echo Steady State Imaging (DESS) in the Breast**

Catherine J. Moran[1], Kristin L. Granlund[1], Bragi Sveinsson, [12], Marcus T. Alley[1], Bruce L. Daniel[1], Brian A. Hargreaves[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Electrical Engineering, Stanford University, Stanford, CA, United States

Combined Educational & Scientific Session
UTE & Zero TE Imaging Techniques & Applications

Organizers: Eric Y. Chang, M.D., Garry E. Gold, M.D., Richard Kijowski, M.D., William B. Morrison, M.D., Ravinder R. Regatte, Ph.D. & Siegfried Trattnig, M.D.

Room 718 B 16:00-18:00 *Moderators:* Jutta Ellermann, M.D., Ph.D. & Felix W. Wehrli, Ph.D.

16:00 **Quantitative UTE Techniques**
Neal K. Bangerter

16:30 **Clinical Applications**
Graeme M. Bydder

17:00 **0499.** **Performance of Bi-Component T2* Fitting of Bound and Pore Bone Water Fractions Is Dependent on Field Strength**

ISMRM MERIT AWARD magna cum laude

Alan C. Seifert[1], Suzanne L. Wehrli[2], Felix W. Wehrli[1]
[1]University of Pennsylvania, Philadelphia, PA, United States; [2]Children's Hospital of Philadelphia, Philadelphia, PA, United States

17:12 **0500.** **Assessment of Cortical Porosity at 11.7 T and Its Correlation with µCT Porosity and Biomechanics**

Robert Nikolov[1], Jun Chen[1], Won Bae[1], Reni Biswas[1], Robert Healey[1], Eric Chang[1], [2], Christine Chung[1], [2], Graeme Bydder[1], Jiang Du[1]
[1]Radiology, University of California, San Diego, San Diego, CA, United States; [2]Radiology, VA San Diego Healthcare System, La Jolla, CA, United States

17:24 **0501.** **Actual Flip Angle Imaging to Improve T1 Measurement for Short T2 Tissues**

Misung Han[1], Peder EZ Larson[1], Roland Krug[1], Viola Rieke[1]
[1]Radiology and Biomedical Imaging, University of California, San Francisco, San Francisco, CA, United States

17:36 **0502.** **18F-FDG and 18F-NaF PET/MR Imaging of Osteoarthritis in the Knee: Considerations and Initial Results**

ISMRM MERIT AWARD summa cum laude

Feliks Kogan[1], Audrey Fan[1], Sloane Brazina[1], Dawn Holley[1], Andrew Quon[1], Garry Gold[1]
[1]Department of Radiology, Stanford University, Stanford, CA, United States

17:48 **0503.** **Imaging of Grafted Mesenchymal Stem Cells in Bone Tissue**

Sergey Magnitsky[1], Geetha Mohan[1], Curtis Corum[2], Djaudat Idiyatullin[2], Nancy Lane[3], Sharmila Majumdar[1]

[1]Radiology, UCSF, San Francisco, CA, United States; [2]Radiology, University of Minnesota, MN, United States; [3]UC Davis, CA, United States

18:00 **Adjournment & Meet the Teachers**

Educational Course
MR Physics & Techniques for Clinicians

Organizers: Marcus T. Alley, Ph.D., Michael Markl, Ph.D., Brian Hargraves, Ph.D., & Nicole Seiberlich, Ph.D.

Room 801 A/B 16:00-18:00 *Moderators:* Brian A. Hargreaves, Ph.D. & Michael Markl, Ph.D.

16:00 **Spin Echo Imaging**
Pauline W. Worters

17:00 **Gradient Echo Imaging**
Oliver Bieri

18:00 **Adjournment & Meet the Teachers**

Bronze Corporate Symposium
Bracco Bronze Corporate Evening Symposium

Room 701 A 18:30-20:30

Sunrise Educational Course
Addressing Clinical Challenges in the Body with MRI

Organizers: Lorenzo Mannelli, M.D., Ph.D., Ivan Pedrosa, M.D., Scott B. Reeder, M.D., Ph.D. & Edwin J.R. van Beek, M.D., Ph.D., M.Ed., FRCR

Room 701 A 07:00-07:50 *Moderators:* Alex Kagen, M.D. & Takeshi Yokoo, M.D., Ph.D.

Update on Contrast Agents for Body Imaging

07:00 **Hepatobiliary Contrast Agents**
Utaroh Motosugi

07:25 **Intravascular**
Tim Leiner

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
How Can MRI of Mouse Models Provide Value for Cancer Studies?

Organizers: Chris A. Flask, Ph.D., Kristine Glunde, Ph.D. & Mark D. Pagel, Ph.D.

Constitution Hall 107 07:00-07:50 *Moderators:* Wen Li, Ph.D. & Matthew Merritt, Ph.D.

07:00 **How Can MRI of Mouse Models Provide Value for Cardiovascular Studies?**
Xin Yu

07:25 **How Can MRI of Mouse Models Provide Value for Cardiovascular Studies?**
Frederick H. Epstein

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
4D-flow: Ready for Primetime?

Organizers: Daniel B. Ennis, Ph.D. & Harald Kramer, M.D.

Room 714 A/B 07:00-07:50 *Moderators:* Kevin M. Johnson, Ph.D. & Harald Kramer, M.D.

07:00 **4D-Flow: How We Acquire It?**
Marcus T. Alley

07:16 **4D-Flow: How We Process It?**
Michael Markl

07:32 **4D-Flow: How It Benefits Patients?**
Scott B. Reeder

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
UTE: Applications & Advances

*Organizers:*Neal K. Bangerter, Ph.D.

Room 716 A/B 07:00-07:50 *Moderators:*Neal K. Bangerter, Ph.D. & Matthew D. Robson, Ph.D.

07:00 **Neurological Applicatons of UTE**
Peder E. Z. Larson

07:25 **Pulmonary UTE**
Scott K. Nagle[1]
[1]University of Wisconsin

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
Contrast by Body Part: How & Why?

*Organizers:*Brian A. Hargreaves, Ph.D. & Manojkumar Saranathan, Ph.D.

Room 718 A 07:00-07:50 *Moderators:*Holden H. Wu, Ph.D. & Katherine L. Wright, Ph.D.

07:00 **Cardiac Imaging Sequences: How & Why?**
Reza Nezafat

07:25 **Body Sequences: How & Why?**
Philip M. Young

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
Brain Networks

*Organizers:*James J. Pekar, Ph.D., & Jonathan R. Polimeni, Ph.D.

Room 718 B 07:00-07:50 *Moderators:*Catherine E. Chang, Ph.D. & James J. Pekar, Ph.D.

07:00 **Structure-Function Relationships in Brain Networks**
Patric Hagmann

07:25 **Group & Population-Level Analysis: Big Data**
Bertrand Thirion

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
Quantitative Musculoskeletal Imaging: Structure & Function- Muscle Structure & Functional Imaging

*Organizers:*Eric Y. Chang, M.D., Garry E. Gold, M.D., Richard Kijowski, M.D., William B. Morrison, M.D., Ravinder R. Regatte, Ph.D. & Siegfried Trattnig, M.D.

Room 801 A/B 07:00-07:50 *Moderators:*Eric Y. Chang, M.D. & Siegfried Trattnig, M.D.

Muscle Structure & Functional Imaging

07:00 **Muscle Structure Including Elastography**
Neil Roberts

07:25 **Functional Imaging Incluing MRS, BOLD, Dynamic Imaging**
Michael D. Noseworthy

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
Neuroimaging: Dementia

Organizers: Jonathan H. Gillard, M.D., FRCR, MBA & Howard A Rowley, M.D.
Room 701 B 07:00-07:50 *Moderators:* Jonathan H. Gillard, M.D., FRCR, MBA & John D. Port, M.D., Ph.D.

07:00 **Dementia Imaging: What the Clinician Needs to Know**
Sandra E. Black

07:25 **Multiparametric MR in Aging & Dementia**
Konstantinos Arfanakis

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
Nuts & Bolts of Advanced Imaging

Organizers: Alexey Samsonov, Ph.D., N. Jon Shah, Ph.D. & Jeffrey Tsao, Ph.D., M.B.A.
John Bassett Theatre 102 07:00-07:50 *Moderators:* Christopher M. Collins, Ph.D. & William A. Grissom, Ph.D.

Review/Demo of Available Excitation Software

07:00 **Coils, RF Shimming & SAR**
Tamer S. Ibrahim

07:25 **Parallel Transmit Pulse Design**
William A. Grissom

07:50 **Adjournment & Meet the Teachers**

Plenary Session
Doing More With Less

Organizers: Christopher M. Collins, Ph.D. & Xiaohong Joe Zhou, Ph.D., D.A.B.R.
Plenary Hall FG 08:10-09:30 *Moderators:* Christopher M. Collins, Ph.D. & Xiaohong Joe Zhou, Ph.D., D.A.B.R.

08:10 **0504.** **Emerging Challenges Faced by the MR Community**
Michael T. Modic

08:30 **0505.** **MRI Services in Resource Limited, Underserved Population**
Pek-Lan Khong

08:50 **0506.** **Using Technology to Do More with Less**
John M. Pauly

09:10 **NIBIB Lecture: "Disordered Mind": Are We in an Era of "Psycho-Radiology"?**
Qiyong Gong

09:30 **Adjournment**

Traditional Poster Session: Molecular Imaging

Exhibition Hall 10:00-12:00 *(no CME credit)*

Traditional Poster Session: Spectroscopy

Exhibition Hall 10:00-12:00 *(no CME credit)*

Traditional Poster Session: fMRI

Exhibition Hall 10:00-12:00 *(no CME credit)*

Electronic Poster Session: Body

Exhibition Hall 10:00-12:00 *(no CME credit)*

Electronic Poster Session: Interventional

Exhibition Hall 10:00-12:00 *(no CME credit)*

Study Group Session
MR Elastography (MRE)

Reception Hall 104 BCD 10:00-12:00 *(no CME credit)*

Study Group Session
Hyperpolarized Media, Hyperpolarization Methods & Equipment

Constitution Hall 105 10:00-12:00 *(no CME credit)*

Power Pitch Session: Neuro Power Pitches

Power Pitch Theatre, Exhibition Hall 10:00-11:00 *(no CME credit)*

Moderators: Bruce R. Rosen, M.D., Ph.D. & Samantha J. Holdsworth, Ph.D.

0507. MR Imaging of Crocodilians Can Help for Brain Volume Estimation of Some Extinct Vertebrates

Daniel Jirak[1], Jiri Janacek[2], Martin Kundrat, [23]

[1]IKEM, Prague, Czech Republic; [2]Institute of Physiology, Academy of Sciences of the Czech Republic, Prague, Czech Republic; [3]Evolutionary Biology Centre, Uppsala University, Uppsala, Sweden

0508. Improved FDG Kinetic Analysis in Brain Tumors Through Simultaneous MR/PET Acquisition

Anne-Kristin Vahle[1, 2], Harikrishna Rallapalli[1, 2], Artem Mikheev[1, 2], Thomas Koesters[1, 2], Kai Tobias Block[1, 2], Jean Logan[1, 2], Timothy Shepherd[1, 2], Girish Fatterpekar[1, 2], David Faul[3], Fernando Emilio Boada[1, 2]

[1]Center for Advanced Imaging Innovation and Research, Dept. of Radiology, New York University School of Medicine, New York, NY, United States; [2]Center for Biomedical Imaging, Dept. of Radiology, New York University School of Medicine, New York, NY, United States; [3]Siemens Healthcare, New York, NY, United States

0509. White Matter Tract Integrity, Amyloid Burden and Structural Atrophy in Normal Aging and Mild Cognitive Impairment: A PET-MRI Study.

Ileana O. Jelescu[1], Timothy M. Shepherd[1], Dmitry S. Novikov[1], Yu-Shin Ding[1], Thomas Koesters[1], Kent P. Friedman[1], Jacqueline Smith[1], James E. Galvin[2], Els Fieremans[1]

[1]Center for Biomedical Imaging, Dept. of Radiology, NYU Langone Medical Center, New York, United States; [2]Alzheimer Disease Center, Depts. of Neurology, Psychiatry and Population Health, NYU Langone Medical Center, New York, United States

0510. Magnetization Prepared ZTE to Address Multiple Diagnostic Contrasts

Peter Börnert[1, 2], Jan Groen[3], Jouke Smink[3], Kay Nehrke[1]

[1]Philips Research, Hamburg, Germany; [2]Radiology, LUMC, Leiden, Netherlands; [3]Philips Healthcare, Best, Netherlands

ISMRM MERIT AWARD summa cum laude

0511. Ultrashort Echo Time (UTE) Imaging of Myelin: T2* Analysis
Vipul R. Sheth[1], Hongda Shao[1], Jun Chen[1], Jody Corey-Bloom[2], Graeme M. Bydder[1], Jiang Du[1]
[1]Radiology, University of California, San Diego, CA, United States; [2]Neurosciences, University of California, San Diego, CA, United States

0512. Effects of Real-Time fMRI Neurofeedback of the Amygdala Specific to Major Depressive Disorder
Vadim Zotev[1], Kymberly D. Young[1], Raquel Phillips[1], Masaya Misaki[1], Jerzy Bodurka[1, 2]
[1]Laureate Institute for Brain Research, Tulsa, OK, United States; [2]College of Engineering, University of Oklahoma, Tulsa, OK, United States

0513. Reduced Connectivity in 7-Year-Old Preterm Brain Networks Relates to Adverse Perinatal Events, Cognitive and Motor Impairment
Deanne Thompson[1, 2], Jian Chen[1], Richard Beare[1], Christopher Adamson[1], Zohra Ahmadzai[1], Claire Kelly[1], Terrie Inder[3], Lex Doyle[1, 4], Marc Seal[1], Peter Anderson[1, 5]
[1]Murdoch Childrens Research Institute, Parkville, Victoria, Australia; [2]Florey Institute of Neuroscience and Mental Health, Parkville, Victoria, Australia; [3]Brigham and Women's Hospital, Massachusettes, United States; [4]Royal Women's Hospital, Parkville, Victoria, Australia; [5]Paediatrics, University of Melbourne, Parkville, Victoria, Australia

0514. Effect of Repetitive Transcranial Magnetic Stimulation on fMRI Resting-State Connectivity in Multiple System Atrophy
Ying-hui Chou[1], Hui You[2], Han Wang[2], Yan-Ping Zhao[2], Bo Hou[2], Nan-kuei Chen[1], Feng Feng[2]
[1]Duke Brain Imaging and Analysis Center, Durham, NC, United States; [2]Peking Union Medical College Hospital, Beijing, China

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0515. *In-Vivo* Evidence of Transcranial Direct Current Stimulation (TDCS) Induced Magnetic-Field Changes in Human Brain Revealed by MRI
Mayank V. Jog[1], Robert Smith[2], Kay Jann[2], Walter Dunn[3], Allan Wu[2], Danny JJ Wang[2]
[1]Biomedical Engineering, University of California Los Angeles, Los Angeles, CA, United States; [2]Neurology, University of California Los Angeles, Los Angeles, CA, United States; [3]Psychiatry, University of California Los Angeles, Los Angeles, CA, United States

0516. Functional Consequences of Neurite Orientation Dispersion and Density in Humans Across the Adult Lifespan
Arash Nazeri[1, 2], M. Mallar Chakravarty[3, 4], David J. Rotenberg[1], Tarek K. Rajji[1], Yogesh Rathi[5], Oleg V. Michailovich[6], Aristotle N. Voineskos[1]
[1]Centre for Addiction and Mental Health, Toronto, ON, Canada; [2]Department of Psychiatry, University of Toronto, Toronto, ON, Canada; [3]Department of Psychiatry, McGill University, Montreal, QC, Canada; [4]Cerebral Imaging Centre, Douglas Institute , Verdun, QC, Canada; [5]Laboratory of Mathematics in Imaging, Harvard Medical School, Boston, MA, United States; [6]Department of Electrical and Computer Engineering, University of Waterloo, Waterloo, ON, Canada

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0517. Aneurysm Wall Permeability as a Measure of Rupture Risk and Bleb Formation
Charles G. Cantrell[1], Parmede Vakil[1], Sameer A. Ansari[2], Timothy J. Carroll[1]
[1]Biomedical Engineering, Northwestern University, Chicago, IL, United States; [2]Radiology, Northwestern University, Chicago, IL, United States

0518. Intracranial Atherosclerotic Lesion Characteristics Correlate with Cerebrovascular Lesion Load After TIA or Ischemic Stroke: A 7.0 Tesla MRI Study
Nikki Dieleman[1], Anja G. van der Kolk[1], Jaco J.M. Zwanenburg[1, 2], Manon Brundel[3], Anita A. Harteveld[1], Geert Jan Biessels[3], Fredy Visser[1, 4], Peter R. Luijten[1], Jeroen Hendrikse[1]
[1]Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]Image Science Institute, University Medical Center Utrecht, Utrecht, Netherlands; [3]Neurology, University Medical Center Utrecht, Utrecht, Netherlands; [4]Philips, Best, Netherlands

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0519. Characterization of Rat Spinal Cord Vasoreactivity Using Arterial Spins Labelling at 9.4 T
Mohamed Tachrount[1], Andrew Davies[2], Roshni Desai[2], Kenneth Smith[2], David Thomas[1], Xavier Golay[1]
[1]UCL Institute of Neurology, London, United Kingdom; [2]Department of Neuroinflammation, UCL Institute of Neurology, London, United Kingdom

0520. Diffusion Tensor Imaging and Magnitization Transfer Parameters Correlate with the White Matter Pathology in Mild Traumatic Brain Injury

ISMRM MERIT AWARD summa cum laude

Tsang-Wei Tu[1], Rashida A. Williams[2], Jacob D. Lescher[2], L. Christine Turtzo[2], Joseph A. Frank[2]
[1]Radiology and Imaging Sciences, National Institutes of Health, Bethesda, MD - Maryland, United States; [2]Radiology and Imaging Sciences, National Institutes of Health, MD, United States

0521. *In Vivo* Evaluation of Ocular Physiology and Structural Integrity of the Optic Nerve Upon Whole Eye Transplantation Using Gadolinium-Enhanced MRI and Diffusion Tensor Imaging

ISMRM MERIT AWARD magna cum laude

Yolandi van der Merwe[1, 2], Leon C. Ho[1, 3], Yang Li[4], Maxine R. Miller[4, 5], Chiaki Komatsu[4], Hongkun Wang[4], Michael B. Steketee[5], Seong-Gi Kim[1, 6], Joel S. Schuman, [25], Kia M. Washington[4, 5], Kevin C. Chan[1, 5], the WET Consortium[5]
[1]Neuroimaging Laboratory, University of Pittsburgh, Pittsburgh, PA, United States; [2]Department of Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States; [3]Department of Electrical and Electronic Engineering, The University of Hong Kong, Pokfulam, Hong Kong, China; [4]Department of Plastic and Reconstructive Surgery, University of Pittsburgh, PA, United States; [5]Department of Ophthalmology, University of Pittsburgh, Pittsburgh, PA, United States; [6]Center for Neuroscience Imaging Research, Institute for Basic Science, Sungkyunkwan University, Suwon, Korea

Cancer Preclinical: Cells & Animals

Room 701 A 10:00-12:00 *Moderators:* Kristine Glunde, Ph.D. & Sabrina M. Ronen, Ph.D.

10:00 0522. Metabolic Signatures of Colorectal Cancer in Biofluids: NMR-Based Metabolomics of Fecal Extracts

Yan Lin[1], Changchun Ma[2], Zhiwei Shen[1], zhening wang[1], Renhua Wu[1]
[1]Radiology Department, Second Affiliated Hospital, Shantou University Medical College, Shantou City, Guangdong Province, China; [2]Radiation Oncology, Cancer Hospital, Shantou University Medical College, Guangdong Province, China

10:12 0523. Ethanolamine Kinase-1 Is the Major Contributor to Phosphoethanolamine Levels in Breast Cancer Cells

Tariq Shah[1], Balaji Krishnamachary[1], Flonne Wildes[1], Jannie Wijnen[2], Kristine Glunde[1], Zaver M. Bhujwalla[1]
[1]Division of Cancer Imaging Research, Johns Hopkins University, Baltimore, MD, United States; [2]University Medical Centre Utrecht, Cancer center, Utrecht, Netherlands

10:24 0524. A Theranostic Probe to Image Choline Kinase Expression and Inhibition in a Breast Cancer Model

ISMRM MERIT AWARD summa cum laude

Sean P. Arlauckas[1], Manoj Kumar[1], Anatoliy V. Popov[1], Harish Poptani[1], Edward J. Delikatny[1]
[1]Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States

10:36 0525. TMPRSS2:ERG Gene Fusion and ERG Overexpression in Human Prostate Cancer Are Associated with Changed Metabolism

Ailin Falkmo Hansen[1], Elise Sandsmark[1], Morten Beck Rye[2, 3], Alan Wright[4], Helena Bertilsson, [25], Anna M. Bofin[6], Anders Angelsen[1], Tone Frost Bathen[1], May-Britt Tessem[1, 3]
[1]Department of Circulation and Medical Imaging, Norwegian University of Science and Technology (NTNU), Trondheim, Norway; [2]Department of Cancer Research and Molecular Medicine, Norwegian University of Science and Technology (NTNU), Trondheim, Norway; [3]St. Olavs Hospital, Trondheim, Norway; [4]Cancer Research UK Cambridge Institute, University of Cambridge, Cambridge, United Kingdom; [5]Department of Urology, St. Olavs Hospital, Trondheim, Norway; [6]Department of Laboratory Medicine, Children's and Women's Health, Norwegian University of Science and Technology (NTNU), Trondheim, Norway

10:48 0526. Reduced Production of Hyperpolarized 5-13C-Glutamate Is Associated with the IDH1 Mutation

ISMRM MERIT AWARD summa cum laude

Jose Luis Izquierdo Garcia[1], Pavithra Luis Viswanath[1], Pia Eriksson[1], Marina Radoul[1], Larry Cai[1], Myriam M. Chaumeil[1], Russell O. Pieper[2], Joanna J. Phillips[2], Sabrina M. Ronen[1]
[1]University California San Francisco, San Francisco, CA, United States; [2]Department of Neurological Surgery, Helen Diller Research Center, University California San Francisco, San Francisco, CA, United States

11:00 0527. Tumor Invasion Visualized by Neurochemical Profile Modification in Human GBM Induced by Cancer Stem Cells in Mice: ^{1}H-MRS Longitudinal Study

Mor Mishkovsky[1], Cristina Cudalbu[2], Irene Vassallo[3], Marie-France Hamou[3], Arnaud Comment[4], Monika Hegi[3], Rolf Gruetter, [25]
[1]Laboratory of Functional and Metabolic Imaging , Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; [2]Center of biomedical imaging (CIBM), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; [3]Laboratory of Brain Tumor Biology and Genetics, Department of Neurosurgery, Lausanne University Hospital, Lausanne, Switzerland; [4]Institute of the Physics of Biological Systems, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; [5]Laboratory of Functional and Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland

11:12 0528. Breast Cancer Cells Can Be Rescued by Matrigel from the Growth Inhibitory Effects of HIF-1α and HIF-2α Silencing

Santosh Kumar Bharti[1], Balaji Krishnamachary[1], Wenlian Zhu[1], Flonne Wildes[1], Samata M. Kakkad[1], Yelena Mironchik[1], Dmitri Artemov[1], Zaver M. Bhujwalla[1]
[1]Div. of Cancer Imaging Research, The Russell H. Morgan Dept. of Radiology and Radiological science, Johns Hopkins University, School of Medicine, Baltimore, MD, United States

11:24 0529. Selective Acidification and De-Energization of WM983B Melanoma Xenografts and Sensitization to Doxorubicin Following Lonidamine Administration

Kavindra Nath[1], David S. Nelson[1], Daniel F. Heitjan[1], Rong Zhou[1], Dennis B. Leeper[2], Jerry D. Glickson[1]
[1]University of Pennsylvania, Philadelphia, PA, United States; [2]Thomas Jefferson University, PA, United States

11:36 0530. Hyperpolarizied 13C MRSI Is a Better Predictor of Survival Than Tumor Size in Treated Glioblastoma

Marina Radoul[1], Myriam M. Chaumeil[1], Pia Eriksson[1], Sabrina M. Ronen[1]
[1]Radiology and Biomedical Imaging, UCSF, San Francisco, CA, United States

11:48 0531. *In Vivo* 19F MRI to Study ERK1 as a Target for Dendritic Cell Migration in High Grade Glioma

ISMRM MERIT AWARD magna cum laude

Min-Chi Ku[1], Helmar Waiczies[2], Andreas Pohlmann[1], Susanne Wolf[3], Helmut Kettenmann[3], Sonia Waiczies[1], Thoralf Niendorf[1]
[1]Berlin Ultrahigh Field Facility (B.U.F.F.), Max Delbrück Center for Molecular Medicine, Berlin, Germany; [2]MRI.TOOLS GmbH, Berlin, Germany, Berlin, Germany; [3]Cellular Neurosciences, Max Delbrück Center for Molecular Medicine, Berlin, Germany

ASL Methods: From the Neck Down

Room 701 B 10:00-12:00 *Moderators:* T.B.A. & T.B.A.

10:00 0532. Separation of Arterial and Portal Blood Supply to Mouse Liver and Tumour Tissue Using Pseudo-Continuous Arterial Spin Labelling (PCASL)

ISMRM MERIT AWARD magna cum laude

Rajiv Ramasawmy[1], Jack Anthony Wells[1], Magdalena Sokolska[2], James A. Meakin[3], Sean Peter Johnson[1], Adrienne E. Campbell-Washburn[4], Rosamund Barbara Pedley[5], Mark Francis Lythgoe†[1], Simon Walker-Samuel†[1]
[1]Centre for Advanced Biomedical Imaging, University College London, London, Greater London, United Kingdom; [2]Institute of Neurology, University College London, London, Greater London, United Kingdom; [3]Oxford University, Oxfordshire, United Kingdom; [4]National Heart Lung and Blood Institute, National Institutes of Health, MD, United States; [5]Cancer Institute, University College London, London, Greater London, United Kingdom

10:12 0533. Quantification of Liver Perfusion Using Multi-Delay Pseudo-Continuous Arterial Spin Labeling

Xinlei Pan[1], Robert Smith[2], Mayank Jog[2], Tianyi Qian[3], Holden H Wu[2], Kyunghyun Sung[2], Kuncheng Li[4], Kui Ying[5], Danny JJ Wang[2]
[1]Department of Biomedical Engineering, Tsinghua University, Beijing, China; [2]Department of Bioengineering, UCLA, CA, United States; [3]Siemens Healthcare, MR Collaboration NE Asia, Beijing, China; [4]Department of Radiology, Xuanwu Hospital of Capital Medical University, Beijing, China; [5]Department of Engineering Physics, Tsinghua University, Beijing, China

10:24 0534. Non-Contrast Pulmonary Perfusion Using Pseudo-Continuous Arterial Spin Labeling of the Inferior Vena Cava

ISMRM MERIT AWARD magna cum laude

Joshua S. Greer[1, 2], Yue Zhang[2], Ivan Pedrosa[2, 3], Ananth J. Madhuranthakam[2, 3]
[1]Bioengineering, UT Dallas, Dallas, TX, United States; [2]Radiology, UT Southwestern Medical Center, Dallas, TX, United States; [3]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States

10:36 0535. Free-Breathing Perfusion Measurement Using Respiratory Motion Prediction

ISMRM MERIT AWARD magna cum laude

Hao Song[1], Wenyang Liu[2], Dan Ruan[2, 3], Sungkyu Jung[4], H Michael Gach[1, 5]
[1]Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [2]Bioengineering, University of California, Los Angeles, Los Angeles, CA, United States; [3]Radiation Oncology, University of California, Los Angeles, Los Angeles, CA, United States; [4]Statistics, University of Pittsburgh, Pittsburgh, PA, United States; [5]Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States

10:48 0536. The Feasibility of ASL Spinal Bone Marrow Perfusion Imaging with Optimized TI

Dong Xing[1], Yunfei Zha[1], Lei Hu[1], Jiao Wang[1], Yuan Lin[1], Hui Lin[2]
[1]Department of Radiology, Renmin Hospital of Wuhan University, Wuhan, Hubei, China; [2]MR Research , GE Healthcare China, Shanghai, China

11:00 0537. Quantitative Rat Lumbar Spinal Cord Blood Flow Measurements Using Multi-Slice Arterial Spin Labelling at 9.4T
Mohamed Tachrount[1], Andrew Davies[2], Roshni Desai[2], Kenneth Smith[2], David Thomas, Xavier Golay[1], Roshni Desai[2]
[1]Department of brain repair and rehabilitation, UCL Institute of Neurology, London, United Kingdom; [2]Department of Neuroinflammation, UCL Institute of Neurology, London, United Kingdom

11:12 0538. Measuring Myocardial Blood Flow Using Modified Look Locker Inversion (MOLLI) Recovery Arterial Spin Labelling (ASL)
Charlotte E. Buchanan[1], Eleanor F. Cox[1], Claire Grant[2], Nick M. Selby[2], Chris W. McIntyre[3], Maarten W. Taal[2], Susan T. Francis[1]
[1]SPMIC, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]Division of Medical Sciences and Graduate Entry Medicine, Royal Derby Hospital, Nottingham, United Kingdom; [3]Schulich School of Medicine and Dentistry, University of Western Ontario, London, Ontario , Canada

11:24 0539. Feasibility and Repeatability of Human Brown Adipose Tissue Volume and Perfusion Activity Using MRI
Weiying Dai[1], Lauren S. Weiner[2], David C. Alsop[1], Aaron M. Cypess[2]
[1]Radiology, Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA, United States; [2]2Section of Integrative Physiology and Metabolism, Joslin Diabetes Center, Boston, MA, United States

11:36 0540. Large Intramuscular Vessel Artifact in ASL: Effect on Calf Muscle Perfusion Measurements and a Velocity-Selective Solution
Jeff L. Zhang[1], Christopher J. Hanrahan[1], Jason Mendes[1], Gwenael Layec[2], Corey Hart[2], Kristi Carlston[1], Michelle Mueller[3], Russell S. Richardson[2], Vivian S. Lee[1]
[1]Radiology, University of Utah, Salt Lake City, UT, United States; [2]Division of Geriatrics, University of Utah, UT, United States; [3]Vascular Surgery, University of Utah, UT, United States

11:48 0541. Arterial Spin Labeling in Exercising Calf Muscle with Prospective Motion Correction
Céline Giraudeau[1, 2], Benjamin R. Knowles[3], Thomas Lange[3], Michael Herbst[3, 4], Maxim Zaitsev[3], Pierre Carlier[1, 2]
[1]NMR Laboratory, Institute of Myology, Paris, France; [2]NMR Laboratory, CEA, I2BM, MIRCen, Fontenay-aux-Roses, France; [3]Department of Radiology, University Medical Center Freiburg, Freiburg, Germany; [4]John A. Burns School of Medicine, Uni Hawaii, Honolulu, HI, United States

Parallel Transmission Strategies

Room 714 A/B 10:00-12:00 *Moderators:* Ulrich Katscher, Ph.D. & Mark E. Ladd, Ph.D.

10:00 0542. Slab-Selective PTX Multiband TOF Angiography at 7 Tesla
Sebastian Schmitter[1], Xiaoping Wu[1], Steen Moeller[1], Edward John Auerbach[1], Gregor Adriany[1], Pierre-Francois Van de Moortele[1], Kamil Ugurbil[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States

10:12 0543. IMPULSE: A Generalized and Scalable Algorithm for Joint Design of Minimum SAR Parallel Transmit RF Pulses
ISMRM MERIT AWARD summa cum laude
Mihir Pendse[1], Brian Rutt[1]
[1]Radiology, Stanford University, Stanford, CA, United States

10:24 0544. Fully Optimized Time-Shifted Radio-Frequency Spoke Pulses for Simultaneous Reduction of Intra-Voxel Dephasing, Flip-Angle Non-Uniformity and the Specific Absorption Rate at Ultra-High Field Using Parallel Transmission
ISMRM MERIT AWARD magna cum laude
Bastien Guerin[1], Jason Stockmann[1, 2], Mehran Baboli[3], Andrew V. Stenger[3], Lawrence L. Wald[1, 4]
[1]Department of Radiology, Massachusetts General Hospital, Charlestown, MA, United States; [2]Physics department, Harvard University, Cambridge, MA, United States; [3]John A. Burns School of Medicine, University of Honolulu, Honolulu, United States; [4]Division of Health Sciences Technology, Harvard-MIT, Cambridge, MA, United States

10:36 0545. RF Shimming Via Efficient Modes for Massively Parallel Transmit Coils
Christian Findeklee[1], Christoph Leussler[1], Peter Vernickel[1], Ulrich Katscher[1]
[1]Research Laboratories Hamburg, Philips GmbH Innovative Technologies, Hamburg, Germany

10:48 0546. High Resolution GRE at 9.4T Using Spokes Pulses

Desmond Ho Yan Tse[1, 2], Daniel Brenner[3], Bastien Guerin[4], Benedikt A Poser[1]
[1]Faculty of Psychology and Neuroscience, Maastricht University, Maastricht, Netherlands; [2]Department of Radiology, Maastricht University Medical Centre, Maastricht, Netherlands; [3]German Centre for Neurodegenerative Diseases (DZNE), Bonn, Germany; [4]Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Boston, MA, United States

11:00 0547. Array-Compressed Parallel Transmit Pulse Design

ISMRM MERIT AWARD magna cum laude

Zhipeng Cao[1, 2], William A. Grissom[1, 2]
[1]Biomedical Engineering, Vanderbilt University, Nashville, TN, United States; [2]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States

11:12 0548. Direct Control of the Temperature Rise in Parallel Transmission Via Temperature Virtual Observation Points: Simulations at 10.5 T

Nicolas Boulant[1], Xiaoping Wu[2], Gregor Adriany[2], Sebastian Schmitter[2], Kamil Ugurbil[2], Pierre-Francois Van de Moortele[2]
[1]NeuroSpin, CEA, Saclay, Ile de France, France; [2]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States

11:24 0549. Non-Iterative Parallel Transmission RF Pulse Design with Strict Temperature Constraints

Cem M. Deniz[1, 2], Giuseppe Carluccio[1, 2], Daniel K. Sodickson[1, 2], Christopher M. Collins[1, 2]
[1]Center for Advanced Imaging Innovation and Research (CAI2R), Department of Radiology, New York University School of Medicine, New York, NY, United States; [2]The Sackler Institute of Graduate Biomedical Sciences, New York University School of Medicine, New York, NY, United States

11:36 0550. Comparison of Local and Remote Transmit Arrays for Body Imaging at 7T Under Power and Local SAR Constraints

Martina Flöser[1, 2], Andreas K. Bitz[1], Stephan Orzada[2], Klaus Solbach[3], Mark E. Ladd[1, 2]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany; [2]Erwin L. Hahn Institute for MRI, University Duisburg-Essen, Essen, Germany; [3]High Frequency Engineering, University Duisburg-Essen, Duisburg, Germany

11:48 0551. Ultra-Fast Inner Volume Excitations with Parallel Transmission at 7 Tesla Using Fully Optimized B0-Robust K-Space Trajectories

ISMRM MERIT AWARD magna cum laude

Mathias Davids[1, 2], Bastien Guérin[2], Lawrence L. Wald[2, 3], Lothar R. Schad[1]
[1]Computer Assisted Clinical Medicine, Medical Faculty Mannheim, Heidelberg University, Mannheim, BW, Germany; [2]Martinos Center for Biomedical Imaging, Dept. of Radiology, Massachusetts General Hospital, Charlestown, MA, United States; [3]Harvard-MIT Division of Health Sciences Technology, Cambridge, MA, United States

Vessel Wall Imaging

Room 716 A/B 10:00-12:00 *Moderators:* René M. Botnar, Ph.D. & T.B.A.

10:00 0552. High Resolution Three Dimensional Imaging of Extracranial and Intracranial Arteries

Lei Zhang[1], Yongjun Tao[2], Xiaoqing Hu[1], Jun Wu[2], Xin Liu[1], Yiu-Cho Chung[1]
[1]Paul C. Lauterbur Center for Biomedical Imaging, Shenzhen Institutes of Advanced Technology, Chinese Academic of Sciences, Shenzhen, Guangdong, China; [2]Neurology, Peking University Shenzhen Hospital, Shenzhen, Guangdong, China

10:12 0553. Ultrahigh-Resolution MRI Imaging of Intracranial Atherosclerosis at 17.6 Tesla: An *Ex Vivo* Study with Histological Comparison

Shuqian Zhang[1], Kazuyuki Yahagi[2], li liu[1], Jiadi Xu[3], Frank D. Kolodgie[2], Renu Virmani[2], Babara Crain[4], Bruce A. Wasserman[1], Ye Qiao[1]
[1]Radiolgoy, Johns Hopkins, Baltimore, MD, United States; [2]CVPath Institute, Inc., Gaithersburg, MD, United States; [3]Kennedy Krieger Institute, MD, United States; [4]Pathology, Johns Hopkins, Baltimore, MD, United States

10:24 0554. Intraplaque Hemorrhage Detection and Threshold Selection for Simultaneous Noncontrast Angiography and IntraPlaque Hemorrhage (SNAP) Images

ISMRM MERIT AWARD magna cum laude

Jin Liu[1], Marina S. Ferguson[1], Jinnan Wang[2], Daniel S. Hippe[1], Niranjan Balu[1], William S. Kerwin[1], Thomas S. Hatsukami[1], Chun Yuan[1]

[1]University of Washington, Seattle, WA, United States; [2]Philips Research North America, NY, United States

10:36 0555. Motion-Robust 3D Black-Blood Carotid Wall Imaging Using Flow-Sensitive Dephasing Preparation and Stack-Of-Stars Trajectory

Xiaoming Bi[1], Yutaka Natsuaki[1], Zhaoyang Fan[2], Peter Speier[3], Debiao Li[2], Gerhard Laub[1]
[1]Siemens Healthcare, Los Angeles, CA, United States; [2]Cedars-Sinai Medical Center, Los Angeles, CA, United States; [3]Siemens Healthcare, Erlangen, Germany

10:48 0556. Velocity Selective RF Pulse Prepared Inversion Recovery (VSIR) for Carotid Artery Vessel Wall Imaging

Yunduo Li[1], Shuo Chen[1], Zechen Zhou[1], Rui Li[1], Chun Yuan[1, 2]
[1]Center for Biomedical Imaging Research, Beijing, China; [2]Department of Radiology, University of Washington, Seattle, WA, United States

11:00 0557. Time-Efficient Whole-Heart Coronary Plaque Characterization with Simultaneously Acquired MRA

ISMRM MERIT AWARD magna cum laude

Yibin Xie[1, 2], Young Jin Kim[3], Jianing Pang[1], Jung-Sun Kim[4], Qi Yang[1], Zhaoyang Fan[1], Hyuk-Jae Chang[4], Debiao Li[1]
[1]Biomedical Imaging Research Institute, Cedars-Sinai Medical Center, Los Angeles, CA, United States; [2]University of California, Los Angeles, Los Angeles, CA, United States; [3]Department of Radiology, Severance Hospital, Yonsei University College of Medicine, Seoul, Korea; [4]Division of Cardiology, Yonsei Cardiovascular Center, Yonsei University College of Medicine, Seoul, Korea

11:12 0558. 3D-Black-Blood 3T-MRI for the Diagnosis of Thoracic Large Vessel Vasculitis: A Feasibility Study

Karla Maria Treitl[1], Stefan Maurus[1], Hendrik Kooijmann-Kurfuerst[2], Eva Coppenrath[1], Nora N. Kammer[1], Marcus Treitl[1], Maximilian Reiser[1], Tobias Saam[1]
[1]Institute for clinical radiology, LMU Munich, Munich, Bavaria, Germany; [2]Philips Healthcare, Philips GmbH, Hamburg, Germany

11:24 0559. Simultaneous Acquisition of Spatially-Registered Gray- And Black-Blood Images of Peripheral Arteries with 3D Double-Echo Steady-State (DESS) at 3T

Michael C. Langham[1], Benoit Desjardins[1], Erin K. Englund[1], Emile R. Mohler[2], Thomas F. Floyd[3], Felix W. Wehrli[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Medicine, University of Pennsylvania, Philadelphia, PA, United States; [3]Anesthesiology, Stony Brook University Medical Center, Stony Brook, NY, United States

11:36 0560. Self-Gated Dynamic Contrast Enhanced (DCE) MRI with Compressed Sensing Acceleration to Quantify Permeability in the Aortic Root of Atherosclerotic Mice

ISMRM MERIT AWARD magna cum laude

Claudia Calcagno[1], Chiara Giannarelli[2], Abdallah G. Motaal[3], Matthias Nahrendorf[4], Willem JM Mulder, [5], Zahi A. Fayad[1], Gustav J. Strijkers[3]
[1]Department of Radiology, Icahn School of Medicine at Mount Sinai, New York, NY, United States; [2]Department of Cardiology, Icahn School of Medicine at Mount Sinai, New York, NY, United States; [3]Department of Biomedical Engineering and Physics, Academic Medical Center, Amsterdam, The Netherlands, Netherlands; [4]Center for Systems Biology, Massachusetts General Hospital, Boston, MA, United States; [5]Department of Radiology, Academic Medical Center, Amsterdam, The Netherlands, Netherlands

11:48 0561. Large Coverage HOmologous Black-Bright Blood Interleaved Imaging Sequence (LaHOBBI) for 3D Dynamic Contrast Enhanced MRI of Vessel Wall

Haikun Qi[1], Shuo Chen[1], Zechen Zhou[1], Jinnan Wang[2], Peter Koken[3], Niranjan Balu[4], Huijun Chen[1]
[1]Department of Biomedical Engineering, School of Medicine, Tsinghua University, Beijing, China; [2]Philips Research North America, Briarcliff Manor, NY, United States; [3]Innovative Technologies, Research Laboratories, Philips Technologies GmbH, Hamburg, Germany; [4]Radiology, University of Washington, Seattle, WA, United States

Focused Discussion Session - Fusion with Diffusion

Constitution Hall 107 10:00-12:00 *Moderators:* Maxime Descoteaux, Ph.D. & Karla L. Miller, Ph.D.

10:00 0562. Fusing 3 and 7 Tesla HCP Datasets for Improved Brain Connectivity Analysis

Stamatios N. Sotiropoulos[1], Saad Jbabdi[1], An T. Vu[2], Jesper L. Andersson[1], Steen Moeller[2], Christophe Lenglet[2], Essa Yacoub[2], Kamil Ugurbil[2], Timothy Behrens[1]
[1]FMRIB Centre, University of Oxford, Oxford, United Kingdom; [2]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States

10:20 0563. Image Quality Transfer: Exploiting Bespoke High-Quality Data to Enhance Everyday Acquisitions

Daniel C. Alexander[1], Darko Zikic[2], Viktor Wottschel[3], Jiaying Zhang[1], Hui Zhang[1], Antonio Criminisi[2]
[1]Dept. Computer Science, University College London, London, United Kingdom; [2]Microsoft Research, Cambridge, United Kingdom; [3]Institute of Neurology, University College London, London, United Kingdom

10:40 0564. Improved Diffusion Tractography at the Cortical Boundary Using HARDI Acquisitions with High-*b*/low-K in White Matter and Low-*b*/high-K Within and Near the Cortex

ISMRM MERIT AWARD summa cum laude

Qiuyun Fan[1], Aapo Nummenmaa[1], Thomas Witzel[1], Susie Y. Huang[1], Jonathan R. Polimeni[1], Van J. Wedeen[1], Bruce R. Rosen[1], Lawrence L. Wald[1]
[1]Massachusetts General Hospital, Charlestown, MA, United States

11:00 0565. Accurate Multi-Resolution Discrete Search Method to Estimate the Number and Directions of Axon Packs from DWMRI

Ricardo Coronado-Leija[1], Alonso Ramirez-Manzanares[1], Jose Luis Marroquin[1], Rolando Jose Biscay[1]
[1]Computer Science Department, Centro de Investigacion en Matematicas, Guanajuato, Mexico

11:20 0566. Panchromatic Sharpening of FOD-Based DEC Maps by Structural T1 Information

ISMRM MERIT AWARD magna cum laude

Thijs Dhollander[1], David Raffelt[1], Robert Elton Smith[1], Alan Connelly[1, 2]
[1]The Florey Institute of Neuroscience and Mental Health, Melbourne, Victoria, Australia; [2]The Florey Department of Neuroscience, University of Melbourne, Melbourne, Victoria, Australia

11:40 0567. Inversion Recovery DTI *In Vivo* at 7T in the Human Brain

ISMRM MERIT AWARD summa cum laude

Silvia De Santis[1, 2], Ben Jeurissen[3], Derek K. Jones[1], Yaniv Assaf[4], Alard Roebroeck[2]
[1]CUBRIC Cardiff University, Cardiff, United Kingdom; [2]Maastricht University, Maastricht, Netherlands; [3]iMinds-Vision Lab, Dept. of Physics, University of Antwerp, Antwerp, Belgium; [4]Tel Aviv University, Tel Aviv, Israel

Sparse & Low Rank Reconstruction for Dynamic MRI

John Bassett Theatre 102 10:00-12:00 *Moderators:* Muhammad Usman, Ph.D. & Martin Uecker, Dr.Rer.Nat.

10:00 0568. Rapid Free-Breathing Dynamic Contrast-Enhanced MRI Using Motion-Resolved Compressed Sensing

ISMRM MERIT AWARD summa cum laude

Li Feng[1], Hersh Chandarana[1], Davide Piccini[2, 3], Justin Ream[1], Daniel K. Sodickson[1], Ricardo Otazo[1]
[1]Center for Advanced Imaging Innovation and Research (CAI2R), Department of Radiology, New York University School of Medicine, New York, NY, United States; [2]Advanced Clinical Imaging Technology, Siemens Healthcare IM BM PI, Lausanne, Switzerland; [3]Department of Radiology, University Hospital (CHUV) and University of Lausanne (UNIL) / Center for Biomedical Imaging (CIBM), Lausanne, Switzerland

10:12 0569. High-Resolution Full-Vocal-Tract 3D Dynamic Speech Imaging

ISMRM MERIT AWARD summa cum laude

Maojing Fu[1, 2], Joseph Holtrop,[23], Jamie Perry[4], David Kuehn[5], Zhi-Pei Liang[1, 2], Bradley Sutton,[23]
[1]Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]Beckman Institute for Advanced Science and Technology, Urbana, IL, United States; [3]Bioengineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [4]Communication Sciences and Disorders, East Carolina University, NC, United States; [5]Speech and Hearing Science, University of Illinois at Urbana-Champaign, IL, United States

10:24 0570. ICTGV Regularization for Highly Accelerated Dynamic MRI

ISMRM MERIT AWARD summa cum laude

Matthias Schloegl[1], Martin Holler[2], Kristian Bredies[2], Karl Kunisch[2], Rudolf Stollberger[1]
[1]Institute of Medical Engineering, Graz University of Technology, Graz, Styria, Austria; [2]Department of Mathematics and Scientific Computing, University of Graz, Graz, Styria, Austria

10:36 0571. Accelerated Cardiac Cine Using Locally Low Rank and Total Variation Constraints

ISMRM MERIT AWARD magna cum laude

Xin Miao[1], Sajan Goud Lingala[2], Yi Guo[2], Terrence Jao[1], Krishna S. Nayak,[12]
[1]Biomedical Engineering, University of Southern California , Los Angeles, CA, United States; [2]Electrical Engineering, University of Southern California, Los Angeles, CA, United States

10:48 **0572. Single Breath Hold Whole Heart Cine MRI with Iterative Groupwise Cardiac Motion Compensation and Sparse Regularization (Kt-WiSE)**

ISMRM MERIT AWARD magna cum laude

Javier Royuela-del-Val[1], Muhammad Usman[2], Lucilio Cordero-Grande[2], Federico Simmross-Wattenberg[1], Marcos Martín-Fernández[1], Claudia Prieto[2], Carlos Alberola-López[1]
[1]Laboratorio de Procesado de Imagen, Universidad de Valladolid, Valladolid, Spain; [2]Division of Imaging Sciences and Biomedical Engineering, King's College London, London, United Kingdom

11:00 **0573. Highly Accelerated Brain DCE MRI with Direct Estimation of Pharmacokinetic Parameter Maps**

ISMRM MERIT AWARD summa cum laude

Yi Guo[1], Yinghua Zhu[1], Sajan Goud Lingala[1], R. Marc Lebel[2], Krishna S. Nayak[1]
[1]Department of Electrical Engineering, University of Southern California, Los Angeles, CA, United States; [2]GE Healthcare, Calgary, Alberta, Canada

11:12 **0574. Clinically Practical Sparse Reconstruction for 4D Prostate DCE-MRI: Algorithm and Initial Experience**

Joshua Trzasko[1], Eric Borisch[1], Akira Kawashima[1], Adam Froemming[1], Roger Grimm[1], Armando Manduca[1], Phillip Young[1], Stephen Riederer[1]
[1]Mayo Clinic, Rochester, MN, United States

11:24 **0575. Beyond Low Rank + Sparse: Multi-Scale Low Rank Reconstruction for Dynamic Contrast Enhanced Imaging**

ISMRM MERIT AWARD magna cum laude

Frank Ong[1], Tao Zhang[2], Joseph Cheng[2], Martin Uecker[3], Michael Lustig[3]
[1]Electrical Engineering and Computer Sciences, University of California, Berkeley, Berkeley, CA, United States; [2]Stanford University, CA, United States; [3]University of California, Berkeley, CA, United States

11:36 **0576. k-T SPARKS: Dynamic Parallel MRI Exploiting Sparse Kalman Smoother**

Suhyung Park[1], Jaeseok Park[2]
[1]Center for Neuroscience Imaging Research, Institute for Basic Science (IBS), Sungkyunkwan University, Suwon, Gyeong Gi-Do, Korea; [2]Biomedical Imaging and Engineering Lab., Department of Global Biomedical Engineering, Sungkyunkwan University, Suwon, Gyeong Gi-Do, Korea

11:48 **0577. Compressed-Sensing Dynamic Imaging with Self-Learned Nonlinear Dictionary**

Ukash Nakarmi[1], Yanhua Wang[1], Jingyuan Lyu[1], Jie Zheng[2], Leslie Ying[1, 3]
[1]Dept. of Electrical Engineering, State University of New York at Buffalo, Buffalo, NY, United States; [2]Dept. of Radiology, Washington University, School of Medicine, MO, United States; [3]Dept. of Biomedical Engineering, State University of New York at Buffalo, NY, United States

Educational Course
MRI & Radiation Therapy

Organizers: Lorenzo Mannelli, M.D., Ph.D., Ivan Pedrosa, M.D., Scott B. Reeder, M.D., Ph.D. & Edwin J.R. van Beek, M.D., Ph.D., M.Ed., FRCR

Room 718 A 10:00-12:00 *Moderators:* Michael Bock, Ph.D. & Jessica Robbins, M.D.

10:00 **Patient Preparation, Safety & MRI Protocol Considerations**
Jessica Robbins

10:30 **Imaging Needs for Radiation Therapy**
Uulke A. van der Heide

11:00 **MRI for Motion Management in Radiation Therapy**
Amit Sawant

11:30 **MRI Guided Radiation Therapy**
Jan J.W. Lagendijk

12:00 **Adjournment & Meet the Teachers**

Combined Educational & Scientific Session
Cartilage-Imaging Techniques

Organizers: Eric Y. Chang, M.D., Garry E. Gold, M.D., Richard Kijowski, M.D., William B. Morrison, M.D., Ravinder R. Regatte, Ph.D. & Siegfried Trattnig, M.D.

Room 718 B 10:00-12:00 *Moderators:* Richard Kijowski, M.D. & Ravinder Reddy, Ph.D.

10:00 **Advanced Quantitative Imaging Techniques**
Feliks Kogan

10:30 **Clinical Applications**
Siegfried Trattnig

11:00 0578. **T2 Texture Change to Articular Cartilage Over 6 Months Is Associated with Change to Knee Health and Cartilage Thickness Over 2 Years Following ACL Injury and Reconstruction**
Ashley A. Williams[1], Carl S. Winalski[2], Constance R. Chu[1]
[1]Orthopaedic Surgery, Stanford University, Stanford, CA, United States; [2]Imaging Institute and Department Biomedical Engineering, Lerner Research Institute, Cleveland Clinic, Cleveland, OH, United States

11:12 0579. **Quantitative ADC Mapping Using DESS with Decreased T1 and Noise Sensitivity**
ISMRM MERIT AWARD magna cum laude
Bragi Sveinsson[1], Catherine Moran[1], Daehyun Yoon[1], Garry Gold[1], Brian Hargreaves[1]
[1]Radiology, Stanford University, Stanford, CA, United States

11:24 0580. **Gray Level Co-Occurrence Matrix Approach for T2 Analysis of Cartilage in Knee Osteoarthritis**
Arttu Peuna[1], Joonas Hekkala[2], Marianne Haapea[3], Jana Podlipska, [12], Miika T. Nieminen[1, 3], Simo Saarakkala, [23], Eveliina Lammentausta[1, 3]
[1]Medical Research Center Oulu, Oulu University Hospital and University of Oulu, Oulu, Finland; [2]Department of Medical Technology, University of Oulu, Oulu, Finland; [3]Department of Diagnostic Radiology, Oulu University Hospital, Oulu, Finland

11:36 0581. **Analysis of the Relationship Between 3D Knee Bone Shape and the Progression of T1ρ and T2 6 Month and 1 Year After ACL Reconstruction**
ISMRM MERIT AWARD magna cum laude
Valentina Pedoia[1], Favian Su[1], Drew Lansdown[1], Richard Souza[1], Benjamin Ma[1], Xiaojuan Li[1]
[1]UCSF, San Francisco, CA, United States

11:48 0582. **Evaluation of Meniscal Pathology Using Quantitative Magnetic Resonance Imaging**
Eric Y. Chang[1, 2], Reni Biswas[2], Betty Tran[2], Sheronda Statum[2], Jiang Du[2], Won C. Bae[2], Christine B. Chung[1, 2]
[1]Radiology Service, VA San Diego Healthcare System, San Diego, CA, United States; [2]Department of Radiology, University of California, San Diego Medical Center, San Diego, CA, United States

12:00 **Adjournment & Meet the Teachers**

Combined Educational & Scientific Session
"Please Hold Still Next Time," Challenges & Solutions in Patient Adherence

Organizers: Ben A. Kennedy, B.App.Sc., Mst. & James G. Pipe, Ph.D.

Room 801 A/B 10:00-12:00 *Moderators:* Jalal B. Andre, M.D. & Ryan K. Robison, Ph.D.

10:00 **Vendor & Research Solutions**
Julian Maclaren

10:24 **Imaging in the Trenches: The Technologist's Perspective**
Vera K. Kimbrell

10:48 0583. **Prospective Motion Correction with FID-Triggered Image Navigators**
ISMRM MERIT AWARD magna cum laude
Maryna Babayeva[1, 2], Pavel Falkovskiy[1, 2], Tom Hilbert[1, 2], Guillaume Bonnier[1, 2], Bénédicte Maréchal[1, 2], Reto Meuli, Jean-Philippe Thiran[2], Rolf Gruetter[3], Gunnar Krueger[1, 2], Tobias Kober[1, 2]
[1]Siemens ACIT - CHUV Radiology, Siemens Healthcare IM BM PI, & Department of Radiology, University Hospital (CHUV), Lausanne, Switzerland; [2]LTS5, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [3]CIBM, École Polytechnique Fédérale de Lausanne and University of Geneva, Switzerland

11:00 **0584.** **Projection-Based 2D/3D Registration of Collapsed FatNav Data for Prospective Motion Correction**
Enrico Avventi[1], Mathias Engström[1, 2], Ola Norbeck[1], Magnus Mårtensson, [23], Stefan Skare[1, 2]
[1]Dept. of Neuroradiology, Karolinska University Hospital, Stockholm, Sweden; [2]Dept. of Clinical Neuroscience, Karolinska Institutet, Stockholm, Sweden; [3]EMEA Research & Collaboration, GE Science Laboratory, GE Healthcare, Stockholm, Sweden

11:12 **0585.** **A Correlation Based Approach to Respiratory Self Navigation for Multi Channel Non-Cartesian MRI**
Gregory R. Lee[1, 2], Yong Chen[3], Vikas Gulani, [34]
[1]Radiology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States; [2]University of Cincinnati, Cincinnati, OH, United States; [3]Radiology, University Hospitals Case Medical Center, Cleveland, OH, United States; [4]Radiolgoy, Case Western Reserve University, Cleveland, OH, United States

11:24 **0586.** **Autofocusing Motion Correction with 3D Image-Based Navigators for Abdominal Imaging**
ISMRM MERIT AWARD summa cum laude
Jieying Luo[1], Nii Okai Addy[1], R. Reeve Ingle[1], Joseph Y. Cheng[1], Bob S. Hu[2], Dwight G. Nishimura[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Palo Alto Medical Foundation, Palo Alto, CA, United States

11:36 **0587.** **Markerless Motion Correction in MRI**
Rasmus Ramsbøl Jensen[1, 2], Claus Benjaminsen[1, 2], Adam Espe Hansen[2], Rasmus Larsen[1], Oline Vinter Olesen[1, 2]
[1]DTU Compute, Technical University of Denmark, Lyngby, Copenhagen, Denmark; [2]Department of Clinical Physiology, Nuclear Medicine & PET, Rigshospitalet, Copenhagen, Denmark

11:48 **0588.** **Technical Feasibility and Potential Applications of an Optical Time-Of-Flight Camera Mounted Inside the MR Scanner**
ISMRM MERIT AWARD magna cum laude
Guido P. Kudielka[1, 2], Anne Menini[1], Pierre-André Vuissoz[2, 3], Jacques Felblinger[3, 4], Florian Wiesinger[1]
[1]GE Global Research, Munich, BY, Germany; [2]Imagerie Adaptative Diagnostique et Interventionnelle, Université de Lorraine, Nancy, Lorraine, France; [3]U947, INSERM, Nancy, Lorraine, France; [4]CIC-IT 1433, INSERM, Nancy , Lorraine, France

12:00 **Adjournment & Meet the Teachers**

Hands-On Workshop 1 – Siemens Healthcare GmbH
Room 711 10:00-12:00 *(no CME credit)*

Hands-On Workshop 1 - GE Healthcare
Room 703 10:00-12:00 *(no CME credit)*

Hands-On Workshop 1 - Philips Healthcare
Room 707 10:00-12:00 *(no CME credit)*

Gold Corporate Symposium
GE Healthcare Gold Corporate Symposia
Plenary Hall FG 12:15-13:15 *(no CME credit)*

Traditional Poster Session: Neuro B
Exhibition Hall 13:30-15:30 *(no CME credit)*

Traditional Poster Session: Perfusion
Exhibition Hall 13:30-15:30 *(no CME credit)*

Electronic Poster Session: Musculoskeletal

Exhibition Hall 13:30-15:30 *(no CME credit)*

Study Group Session
Musculoskeletal MR

Reception Hall 104 BCD 13:30-15:30 *(no CME credit)*

Study Group Session
MR Engineering

Constitution Hall 105 13:30-15:30 *(no CME credit)*

Power Pitch Session: Advances in fMRI

Power Pitch Theatre, Exhibition Hall 13:30-14:30 *(no CME credit)*

Moderators: Karla L. Miller, Ph.D. & T.B.A.

0589. Individual-Subject Mapping of Functional Networks from Sparse Spontaneous BOLD Events

Cesar Caballero Gaudes[1], Ziad S Saad[2], Mathijs Raemaekers[3], Nick F. Ramsey[3], Natalia Petridou[4]
[1]BCBL. Basque Center on Cognition, Brain and Language, Donostia, Guipuzcoa, Spain; [2]Statistical and Scientific Computing Core, National Institute of Mental Health, National Institutes of Health, Bethesda, MD, United States; [3]Brain Center Rudolf Magnus, Department of Neurology and Neurosurgery,, UMC Utrecht, Utrecht, Netherlands; [4]Radiology, Imaging Division, UMC Utrecht, Utrecht, Netherlands

0590. A Machine Learning Case for a Higher Order Control Plexus in the Frontal Pole Cortex

Nishant Zachariah[1], Zhihao Li[2, 3], Jason Langley[2], Shiyang Chen[2], Mark Davenport[1], Justin Romberg[1], Xiaoping Hu[2]
[1]Department of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA, United States; [2]Department of Biomedical Engineering, Emory University and Georgia Institute of Technology, Atlanta, GA, United States; [3]Institute of Affective and Social Neuroscience, Shenzhen University, Shenzhen, Guangdong, China

0591. Calibrating BOLD Latency with High Temporal Resolution Precision Using Magnetic Resonance Inverse Imaging

Ruo-Ning Sun[1], Ying-Hua Chu[1], Yi-Cheng Hsu[1], Wen-Jui Kuo[2], Fa-Hsuan Lin[1]
[1]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan; [2]Institute of Neuroscience, National Yang Ming University, Taipei, Taiwan

0592. Cortical Depth Dependence of Physiological Fluctuations and Whole-Brain Resting-State Functional Connectivity at 7T

Jonathan R. Polimeni[1], Marta Bianciardi[1], Boris Keil[1], Lawrence L. Wald[1, 2]
[1]Athinoula A. Martinos Center for Biomedical Imaging, Department of Radiology, Harvard Medical School, Massachusetts General Hospital, Charlestown, MA, United States; [2]Harvard-MIT Division of Health Sciences and Technology, Massachusetts Institute of Technology, Cambridge, MA, United States

0593. 2D EPI at 9.4T with Slice-Specific Spokes Pulse RF Excitation for B1+ Homogenisation

Benedikt A Poser[1], Desmond HY Tse[1, 2]
[1]Faculty of Psychology and Neuroscience, Maastricht University, Maastricht, Netherlands; [2]Department of Radiology, Maastricht University, Maastricht, Netherlands

0594. Relationships Between Excitation-Inhibition Balance and Whole-Brain Oxygen Extraction Fraction in Human Brain

Swati Rane[1], Brandon Ally[2], Emily Mason[2], Subechhya Pradhan[3], Erin Hussey[2], Kevin Waddell[3], Hanzhang Lu[4, 5], Manus Donahue, [23]
[1]Radiology and Radiological Sciences, Vanderbilt University Institute of Imaging Science, Nashville, TN, United States; [2]Neurology, Vanderbilt University, Nashville, TN, United States; [3]Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [4]Radiology, UT Southwestern, Dallas, TX, United States; [5]Psychiatry, UT Southwestern, Dallas, TX, United States

0595. Dynamic Brain States Sequential Modelling Based on Spontaneous Brain Activity of Resting-State fMRI

ISMRM MERIT AWARD magna cum laude

Shiyang Chen[1], Jason Langley[1], Xiaoping Hu[1]
[1]The Wallace H. Coulter Department of Biomedical Engineering, Georgia Institute of Technology and Emory University, Atlanta, GA, United States

0596. Failure of the "standard" fMRI Analysis in the Visual Cortex Using a Smooth Visual Stimulus

ISMRM MERIT AWARD magna cum laude

David Provencher[1], Andreas Bartels[2], Yves Bérubé-Lauzière[3, 4], Kevin Whittingstall, [45]
[1]Department of Nuclear Medicine and Radiobiology, Université de Sherbrooke, Sherbrooke, QC, Canada; [2]Werner Reichardt Centre for Integrative Neuroscience, Tübingen, Germany; [3]Department of Electrical and Computer Engineering, Université de Sherbrooke, Sherbrooke, QC, Canada; [4]Centre d'imagerie moléculaire de Sherbrooke (CIMS), Université de Sherbrooke, Sherbrooke, QC, Canada; [5]Department of Diagnostic Radiology, Université de Sherbrooke, Sherbrooke, QC, Canada

0597. BOLD Calibration with Interleaved Susceptometry-Based Oximetry

Zachary B. Rodgers[1], Erin K. Englund[2], Maria A. Fernandez-Seara[3], Felix W. Wehrli[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Department of Bioengineering, University of Pennsylvania , Philadelphia, PA, United States; [3]Neuroimaging Laboratory, Center for Applied Medical Research, University of Navarra, Pamplona, Navarra, Spain

0598. Multimodal Validation of Physiological MRI: Triple Oxygen PET and NIRS

Daniel Bulte[1], Hannah Hare[1], Nazneen Sudhan[2], Joanna Simpson[2], Joseph Donnelly[2], Xiuyun Liu[2], Jonathan Coles[2]
[1]FMRIB, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]WBIC, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom

0599. Measurement of μ-Opioid Receptor Driven Neurovascular Coupling Signals Using Simultaneous PET/MRI

Hsiao-Ying Wey[1], Jacob M. Hooker[1], Michael S. Placzek[1, 2], Bruce R. Rosen[1], Joseph B. Mandeville[1]
[1]A. A. Martinos Center, Department of Radiology, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA, United States; [2]McLean Hospital, Harvard Medical School, Belmont, MA, United States

0600. Simultaneous Multi-Slice Functional CBV Measurements at 7 T

ISMRM MERIT AWARD magna cum laude

Laurentius Huber[1], Dimo Ivanov[2], Maria Guidi[1], Robert Turner[1], Kâmil Uludağ[2], Harald E. Möller[1], Benedikt A. Poser[2]
[1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany; [2]Maastricht Brain Imaging Centre, Netherlands

0601. Distinct Neurophysiological Correlates of Global Vs. Local Resting State fMRI Networks

ISMRM MERIT AWARD magna cum laude

Haiguang Wen[1], Zhongming Liu, [12]
[1]Electrical and Computer Engineering, Purdue University, West Lafayette, IN, United States; [2]Biomedical Engineering, Purdue University, West Lafayette, IN, United States

0602. Functional Pathways in Monkey Brain Mapped Using Resting State Correlation Tensors

Tung-Lin Wu[1], Feng Wang[1, 2], Li Min Chen, [23], Adam W. Anderson, [23], Zhaohua Ding[1, 2], John C. Gore, [23]
[1]Vanderbilt University Institute of Imaging Science , Nashville , TN, United States; [2]Radiology and Radiological Sciences, Vanderbilt Univeristy, Nashville, TN, United States; [3]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States

0603. Subcortical Grey Matter Susceptibility Mapping from Standard fMRI Studies

Hongfu Sun[1], Peter Seres[1], Alan H. Wilman[1]
[1]Biomedical Engineering, University of Alberta, Edmonton, Alberta, Canada

Cancer: Therapy Response & Perfusion

Room 701 A 13:30-15:30 *Moderators:* Nandita M. DeSouza, M.D., F.R.C.R. & Natalie J. Serkova, Ph.D.

13:30 **Introduction**

13:42 **0604. Quantitative DCE-MRI Evaluation of Breast Cancer Response to Neoadjuvant Chemotherapy**
Alina Tudorica[1], Karen Y. Oh[1], Stephen Y-C Chui[1], Nicole Roy[1], Megan L. Troxell[1], Arpana Naik[1], Kathleen A. Kemmer[1], Yiyi Chen[1], Megan L. Holtorf[1], Aneela Afzal[1], Charles S. Springer[1], Xin Li[1], Wei Huang[1]
[1]Oregon Health & Science University, Portland, OR, United States

13:54 **0605. Dynamic-Contrast-Enhanced MRI and Dynamic Tensor Imaging (DTI) for the Early Detection of Anti-Angiogenic Effect and Vessel "Normalization" in Human Breast Cancer Treated with Neoadjuvant Chemotherapy**
Thian Ng[1], [2], Bo Zhang[3], Dennis Cheong, Limiao Jiang[4], Bingwen Zheng[5], Soo Chin Lee[6]
[1]National University of Singapore, S'pore, Singapore, Singapore; [2]CIRC/A*STAR, S'pore, Singapore, Singapore; [3]CIRC/A*STAR, Singapore, Singapore; [4]NUS/CIRC, S'pore, Singapore; [5]NUS/NERI, S'pore, Singapore; [6]NUS, S'pore, Singapore

14:06 **0606. Optimization of DCE-MRI Measurement Parameters for Predicting Response to Neoadjuvant Chemotherapy by Breast Cancer Subtype**
Wen Li[1], Wei-Ching Lo[1], Ella F. Jones[1], David C. Newitt[1], John Kornak[2], Lisa J. Wilmes[1], Nola M. Hylton[1]
[1]Radiology and Biomedical Imaging, UCSF, San Francisco, CA, United States; [2]Epidemiology and Biostatistics, UCSF, San Francisco, CA, United States

14:18 **0607. 3D Texture Analysis of DCE-MRI Pharmacokinetic Parametric Maps for Early Prediction of Breast Cancer Therapy Response**
Guillaume Thibault[1], Alina Tudorica[1], Aneela Afzal[1], Stephen Y-C Chui[1], Arpana Naik[1], Megan L. Troxell[1], Kathleen A. Kemmer[1], Karen Y. Oh[1], Nicole Roy[1], Megan L. Holtorf[1], Wei Huang[1], Xubo Song[1]
[1]Oregon Health & Science University, Portland, OR, United States

14:30 **0608. Neoadjuvant Chemotherapy Treatment Prediction: A Classification Model Based Approach Utilising Pre-Treatment DCE-MRI**
Martin D. Pickles[1], Peter Gibbs[1], Martin Lowry[1], Lindsay W. Turnbull[1]
[1]Centre for Magnetic Resonance Investigations, Hull York Medical School at University of Hull, Hull, East Yorkshire, United Kingdom

14:42 **0609. Improved Fitting of Breast Pharmacokinetic Parameters Using Dispersion Models**
Subashini Srinivasan[1], Brian A. Hargreaves[1], Bruce L. Daniel[1]
[1]Department of Radiology, Stanford University, Palo Alto, CA, United States

14:54 **0610. High Plasma Flow as Measured Using DCE-MRI and the 2CXM Is Associated with Increased Disease-Free Survival in Patients with Carcinoma of the Cervix**
ISMRM MERIT AWARD magna cum laude
Ben R. Dickie[1], Lucy E. Kershaw[1], Stephanie Withey[2], Bernadette M. Carrington[3], Catharine M. West[4], Chris J. Rose[5]
[1]Medical Physics and Engineering, Christie NHS Foundation Trust, Manchester, United Kingdom; [2]RRPPS, University Hospitals Birmingham NHS Foundation Trust, Birmingham, United Kingdom; [3]Department of Radiology, Christie NHS Foundation Trust, Manchester, United Kingdom; [4]Institute of Cancer Sciences, University of Manchester, Manchester, United Kingdom; [5]Centre for Imaging Sciences, University of Manchester, Manchester, United Kingdom

15:06 **0611. Outcome Results of In-Bore MRI-Guided Laser Ablation for Malignant Renal Neoplasms: 1-Year Median Follow Up Analysis of 23 Treated Tumors**
Sherif G. Nour[1], [2], Andrew David Nicholson, Tracy E. Powell, [2], Viraj Master
[1]Emory University, Atlanta, GA, United States; [2]Interventional MRI Program, Emory University, GA, United States

15:18 **0612. Noninvasive Assessment of Functional Tumor Microvasculature and Drug Delivery Associated with Angiotensin Receptor Blockade in Pancreatic Cancer**
ISMRM MERIT AWARD summa cum laude
Vidhya Kumar[1], [2], Yves Boucher[3], Diego Ferreira[1], Hao Liu[3], Rakesh Jain[3], Alexander R. Guimaraes[1], [4]
[1]Radiology, Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [2]The Ohio State University, Columbus, OH, United States; [3]Radiation Oncology/Steele Lab for Tumor Biology, Massachusetts General Hospital, Charlestown, MA, United States; [4]Radiology, Oregon Health Sciences University, Portland, OR, United States

Diffusion Weighted MRS & Compartmental Modeling

Room 701 B 13:30-15:30 *Moderators:* Itamar Ronen, Ph.D. & M. Albert Thomas, Ph.D.

13:30 **Introduction**

13:42 0613. Resolving Cellular Specific Microarchitectures Using Double Pulsed Field Gradient Weighted, Relaxation-Enhanced Magnetic Resonance Spectroscopy

Noam Shemesh[1], Jens T. Rosenberg[2, 3], Jean-Nicolas Dumez[4], Lucio Frydman, [25], Samuel C. Grant[2, 3]
[1]Champalimaud Neuroscience Programme, Champalimaud Centre for the Unknown, Lisbon, Portugal; [2]National High Magnetic Field Laboratory, Florida State University, Tallahassee, FL, United States; [3]Chemical & Biomedical Engineering, Florida State University, Tallahassee, FL, United States; [4]Institut de Chimie des Substances Naturelles, CNRS, UPR2301, Gif-sur-Yvette, France; [5]Chemical Physics, Weizmann Institute of Science, Rehovot, Israel

13:54 0614. Single-Shot Diffusion Tensor Spectroscopic Imaging in Human Brain

Stefan Posse[1, 2], Kevin F. Tagne[3], Stephen R. Dager[4]
[1]Neurology, U New Mexico, Albquerque, NM, United States; [2]Physics and Astronomy, U New Mexico, Albuquerque, NM, United States; [3]Neurology, U New Mexico, Albquerque, NM, United States; [4]Radiology, U Washington, Seattle, WA, United States

14:06 0615. Quantification of Mean Cell Size and Intracellular Volume Fraction Using Temporal Diffusion Spectroscopy

Xiaoyu Jiang[1], Hua Li[1], Ping Zhao[1], Jingping Xie[1], John C. Gore[1], Junzhong Xu[1]
[1]Institute of Imaging Science, vanderbilt university, nashville, TN, United States

14:18 0616. Probing Metabolite Diffusion at Ultra-Short Diffusion Times in the Mouse Brain Using Optimized Oscillating Gradients and a "short" Echo Time Strategy

ISMRM MERIT AWARD magna cum laude

Clemence Ligneul[1, 2], Chloé Najac[1, 2], Julien Flament[1, 3], Julien Valette[1, 2]
[1]CEA/DSV/I2BM/MIRCen, Fontenay-aux-Roses, France; [2]CNRS URA 2210, Fontenay-aux-Roses, France; [3]Inserm US27, CRC-MIRCen, Fontenay-aux-Roses, France

14:30 0617. Diffusion-Weighted Spectroscopy of N-Acetylaspartate: A Novel Technique to Specifically Explore Neuroaxonal Damage in Multiple Sclerosis

ISMRM MERIT AWARD magna cum laude

Francesca Branzoli[1, 2], Benedetta Bodini[1, 2], Romain Valabrègue[1, 2], Itamar Ronen[3], Daniel Garcia-Lorenzo[1, 2], Bruno Stankoff[1, 2], Stephane Lehéricy[1, 2]
[1]Institut du Cerveau et de la Moelle épinière – ICM, Centre de Neuroimagerie de Recherche – CENIR, Paris, France; [2]Sorbonnes Université, Université Pierre et Marie Curie and Inserm UMR-S1127; CNRS, UMR 7225, Paris, France; [3]C. J. Gorter Center for High Field MRI, Department of Radiology, Leiden University Medical Center, Leiden, Netherlands, Netherlands

14:42 0618. Separating Water and Olefinic Fat Peaks Using Diffusion-Weighted MRS and Diffusion Constraint Fitting to Measure Vertebral Bone Marrow Fat Unsaturation

Stefan Ruschke[1], Michael Dieckmeyer[1], Hendrik Kooijman[2], Axel Haase[3], Ernst J. Rummeny[1], Jan S. Bauer[4], Thomas Baum[1], Dimitrios C. Karampinos[1]
[1]Department of Diagnostic and Interventional Radiology, Technische Universität München, Munich, Bayern, Germany; [2]Philips Healthcare, Hamburg, Germany; [3]Zentralinstitut für Medizintechnik, Technische Universität München, Garching, Bayern, Germany; [4]Neuroradiology, Technische Universität München, Munich, Bayern, Germany

14:54 0619. *In Vivo* MR Imaging and Spectroscopy Provides Insight Into Malignant Transformation and *IDH*-Mutation Status in Diffuse, Low-Grade Glioma

Llewellyn Jalbert[1], Evan Neill[2], Joanna Phillips[3], Annette Molinaro[3], Susan Chang[3], Sarah Nelson[1, 2]
[1]Joint Graduate Program in Bioengineering, UCSF, San Francisco, CA, United States; [2]Radiology & Biomedical Imaging, UCSF, CA, United States; [3]Neurological Surgery, UCSF, CA, United States

15:06 0620. Towards a Refined Bi-Compartmental Model of Brain Metabolism Using Bonded Cumomers Analysis of ^{13}C MRS Spectra

ISMRM MERIT AWARD magna cum laude

Brice Tiret[1, 2], Vincent Lebon[1, 2], Julien Valette[1, 2], Pierre-Gilles Henry[3]
[1]CEA/DSV/I2BM/MIRCen, Fontenay-aux-Roses, France; [2]CNRS, URA 2210, Fontenay-aux-Roses, France; [3]CMRR, Minneapolis, MN, United States

15:18 **0621. Improved Cardiac 1H-MR Spectroscopy at 3 T Using High Permittivity Materials**

ISMRM MERIT AWARD magna cum laude

Paul de Heer[1], Maurice B. Bizino, Maarten J. Versluis[1], Andrew G. Webb[1], Hildo J. Lamb
[1]CJ Gorter Center for High Field MRI, Radiology, Leiden University Medical Center, Leiden, Zuid Holland, Netherlands

RF Coil Arrays

Room 714 A/B 13:30-15:30 *Moderators:* Ryan J. Brown, Ph.D. & Ravi S. Menon, Ph.D.

13:30 **0622. A Modular 16 Ch. Transmit/32 Ch. Receive Array for Parallel Transmission and High Resolution fMRI at 7 Tesla**

Gregor Adriany[1], Scott Schillak[2], Matt Waks[2], Brandon Tramm[2], Andrea Grant[1], Essa Yacoub[1], Tommy Vaughan[1], Cheryl Olman[1], Sebatian Schmitter[1], Kamil Ugurbil[1]
[1]Medical School, Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States; [2]Virtumed LLC, MN, United States

13:42 **0623. An Parallel-Transmit, Parallel-Receive Coil for Routine Scanning on a 7T Head-Only Scanner**

Kyle M. Gilbert[1], Joseph S. Gati[1], Esther Kho[1,2], L Martyn Klassen[1], Peter Zeman[1], Ravi S. Menon[1]
[1]The University of Western Ontario, London, Ontario, Canada; [2]University of Groningen, Groningen, Netherlands

13:54 **0624. 8-Channel Double Tuned ^{13}C-^{1}H Transceiver Phased Array for ^{13}C MRS in Human Brain at 7T**

Guillaume Donati[1], Ozlem Ipek[2], Eulalia Serés Roig[3], Rolf Gruetter, [34]
[1]Laboratory of Functional and Metabolic Imaging, École Polytechnique Fédérale de Lausanne, Lausanne , Vaud, Switzerland; [2]Centre d'Imagerie Biomédicale, École Polytechnique Fédérale de Lausanne, Lausanne, Vaud, Switzerland; [3]Laboratory of Functional and Metabolic Imaging, École Polytechnique Fédérale de Lausanne, Lausanne, Vaud, Switzerland; [4]Department of Radiology, Universities of Lausanne and Geneva, Lausanne, Geneva, Switzerland

14:06 **0625. A 10-Channel TMS-Compatible Planar RF Coil Array for Human Brain MRI at 3T**

ISMRM MERIT AWARD magna cum laude

Pu-Yeh Wu[1], Ying-Hua Chu[1], Aapo Nummenmaa[2], Thomas Witzel[2], Shang-Yueh Tsai[3], Wen-Jui Kuo[4], Fa-Hsuan Lin[1,2]
[1]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan; [2]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States; [3]Institute of Applied Physics, National Chengchi University, Taipei, Taiwan; [4]Institute of Neuroscience, National Yang Ming University, Taipei, Taiwan

14:18 **0626. 7T 22ch Wrap-Around Coil Array for Cervical Spinal Cord Imaging**

Bei Zhang[1], Priti Balchandani[1], Zahi A. Fayad[1], Joo-won Kim[1], Christopher Cannistraci[1], Bernd Stoeckel[2], Junqian Xu[1]
[1]Translational and Molecular Imaging Institute, Icahn School of Medicine at Mount Sinai, New York, United States; [2]Siemens Medical Solution, New York, United States

14:30 **0627. A 7 T Spine Array Combining Dipole Transmitters and Loop Receivers**

Qi Duan[1], Govind Nair[2], Natalia Gudino[1], Jacco A. de Zwart[1], Peter van Gelderen[1], Joseph Murphy-Boesch[1], Daniel S. Reich[2], Jeff H. Duyn[1], Hellmut Merkle[1]
[1]Laboratory of Functional and Molecular Imaging, NINDS, National Institutes of Health, Bethesda, MD, United States; [2]Division of Neuroimmunology and Neurovirology, NINDS, National Institutes of Health, Bethesda, MD, United States

14:42 **0628. A Four Channel Transmit Receive "Loopole" Array for Spine Imaging at 7.0 Tesla**

Karthik Lakshmanan[1,2], Martijn Cloos[1,2], Ryan Brown[1,2], Timothy Shepherd[3,4], Graham C. Wiggins[1,2]
[1]The Bernard and Irene Schwartz Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, Newyork, NY, United States; [2]The Center for Advanced Imaging Innovation and Research (CAI2R),Department of Radiology, New York University School of Medicine, Newyork, NY, United States; [3]Radiology, NYU Langone Medical Center, NY, United States; [4]The Center for Advanced Imaging Innovation and Research (CAI2R),Department of Radiology, New York University School of Medicine, NY, United States

14:54 **0629. Z-Direction B_1^+ Homogenization Using B_1-Control Receive Array Coil and B_1 Rectifying Fin for L-Spine Imaging at 3T**

Yukio Kaneko[1], Yoshihisa Soutome[1,2], Hideta Habara[1,2], Yoshitaka Bito[2], Hisaaki Ochi[1]
[1]Central Research Laboratory, Hitachi Ltd., Kokubunji, Tokyo, Japan; [2]Hitachi Medical Corporation, Kashiwa, Chiba, Japan

15:06 0630. An Integrated 8-Channel Tx/Rx Body Coil for 7 Tesla Whole-Body MRI

Stephan Orzada[1], Andreas K. Bitz[2], Marcel Gratz[1, 3], Sören Johst[1], Maximilian N. Völker[1], Oliver Kraff[1], Dominik Beyer[1], Tristan Mathiebe[1], Ashraf Abuelhaija[4], Klaus Solbach[4], Mark E. Ladd[2]
[1]Erwin L. Hahn Institute for MRI, Essen, NRW, Germany; [2]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany; [3]High-field and Hybrid MR Imaging, University Clinic Essen, Essen, Germany; [4]RF Technology, University Duisburg-Essen, Duisburg, Germany

15:18 0631. Combined 8-Channel Transceiver Fractionated Dipole Antenna Array with a 16-Channel Loop Coil Receive Array for Body Imaging at 7 Tesla

Ingmar J. Voogt[1], Dennis W.J. Klomp[1], Hans Hoogduin[1], Mariska P. Luttje[1], Peter R. Luijten[1], Cornelis A.T. van den Berg[1], Alexander J.E. Raaijmakers[1]
[1]Imaging Division, UMC Utrecht, Utrecht, Netherlands

Body/Fetal/Female Pelvis

Room 716 A/B 13:30-15:30 *Moderators:* Andrea Righini, M.D.. & T.B.A.

13:30 0632. Fetal Cardiac MRI and Left Ventricular Function Assessment Using a New Gating Strategy Based on Doppler Ultrasound: Preliminary Results

Jin Yamamura[1], Björn Schönnagel[1], Manuela Tavares de Sousa[1], Chressen Much[1], Friedrich Ueberle[2], Gerhard Adam[1], Fabian Kording[1], Fabian Kording[1]
[1]Diagnostic and Interventional Radiology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Biomedical Technology Fakultät Life Sciences / Medizintechnik, University of Applied Sciences Hamburg, Hamburg, Germany

13:42 0633. Human Placental and Fetal Response to Maternal Hyperoxygenation in IUGR Pregnancy as Measured by BOLD MRI

Jie Luo[1], Esra Abaci Turk[1], Tobias Hahn[1], María Teulón González, [12], Borjan Gagoski[3], Carolina Bibbo[4], Arvind Palanisamy[5], Clare M. Tempany-Afdhal[6], Ángel Torrado-Carvajal, [17], Norberto Malpica, [17], Judith Martínez González[8], Julian N. Robinson[4], Juan A. Hernández-Tamames, [17], Elfar Adelsteinsson, [19], Patricia Ellen Grant[3]
[1]Madrid-MIT M+Vision Consortium in RLE, Massachusetts Institute of Technology, Cambridge, MA, United States; [2]Department of Obstetrics and Gynecology, Hospital Universitario de Fuenlabrada, Madrid, Spain; [3]Fetal-Neonatal Neuroimaging & Developmental Science Center, Boston Children's Hospital, Harvard Medical School, Boston, MA, United States; [4]Department of Obstetrics and Gynecology, Division of Maternal and Fetal Medicine, Brigham and Women’s Hospital, Boston, MA, United States; [5]Department of Anaesthesia, Brigham and Women's Hospital, Boston, MA, United States; [6]Department of Radiology, Brigham and Women’s Hospital, Boston, MA, United States; [7]Medical Image Analysis and Biometry Laboratory, Universidad Rey Juan Carlos, Madrid, Spain; [8]Department of Radiology, Hospital Universitario de Fuenlabrada, Madrid, Spain; [9]Department of Electrical Engineering and Computer Science,Harvard-MIT Health Sciences and Technology, Massachusetts Institute of Technology, Cambridge, MA, United States

13:54 0634. Diffusion Weighted Imaging in Accurate Classification of Complex Ovarian Masses: A Whole-Tumor Heterogeneity Quantification Approach

Anahita Fathi Kazerooni[1, 2], Mojtaba Safari[1], Hamidreza Haghighatkhah[3], Mahnaz Nabil[4], Hamidreza Saligheh Rad[1, 2]
[1]Quantitative MR Imaging and Spectroscopy Group, Research Center for Molecular and Cellular Imaging, Tehran University of Medical Sciences, Tehran, Iran; [2]Department of Medical Physics and Biomedical Engineering, School of Medicine, , Tehran University of Medical Sciences, Tehran, Iran; [3]Department of Radiology, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran; [4]Department of Statistics, Tarbiat Modares University, Tehran, Iran

14:06 0635. Choline Detection in Human Cervical Cancer Using an Internal Antenna and External Antennas at 7T.

Irene Maria Louise van Kalleveen[1], Jaap P. Hoogendam[1], Alexander J.E. Raaijmakers[1], Fredy Visser[1], Hugo Kroeze[1], Peter R. Luijten[1], Wouter B. Veldhuis[1], Dennis W.J. Klomp[1]
[1]UMC Utrecht, Utrecht, Netherlands

14:18 0636. Separation of Type and Grade in Cervical Tumours Using Non-Mono-Exponential Models of Diffusion-Weighted MRI

Jessica M. Winfield[1], Katherine Downey[2], Matthew R. Orton[2], John H. Shepherd[3], Veronica A. Morgan[1], Sharon L. Giles[1], Thomas E J Ind[3], Nandita M. deSouza[1, 2]
[1]MRI Unit, Royal Marsden NHS Foundation Trust, Sutton, Surrey, United Kingdom; [2]CRUK Cancer Imaging Centre, Institute of Cancer Research, Sutton, Surrey, United Kingdom; [3]Department of Gynecology, Royal Marsden NHS Foundation Trust, Sutton, Surrey, United Kingdom

14:30 0637. Fetal Hemodynamics of Intrauterine Growth Restriction by Phase Contrast MRI and MR Oximetry

mengyuan zhu[1, 2], Sujana Madathil[1], Sarah Keating[3], Natasha Milligan[1], Steven Miller[4], Rory Windrim[5], Sharon Portnoy[6], John G. Sled[7], Christopher Macgowan[7], John Kingdom[8], Mike Seed[1]

[1]Heart Centre, The Hospital for Sick Children, Toronto, Ontario, Canada; [2]Institute of Medical Science, University of Toronto, Toronto, Ontario, Canada; [3]Pathology & Laboratory Medicine, Mount Sinai Hospital, Toronto, Ontario, Canada; [4]Neurology, The Hospital for Sick Children, Toronto, Ontario, Canada; [5]Maternal-Fetal Medicine, Mount Sinai Hospital, Ontario, Canada; [6]Mouse Imaging Centre, The Hospital for Sick Children, Toronto, Ontario, Canada; [7]Physiology & Experimental Medicine, The Hospital for Sick Children, Toronto, Ontario, Canada; [8]Obstetrics & Gynaecology, Mount Sinai Hospital, Toronto, Ontario, Canada

14:42 0638. Non-Contrast Magnetic Resonance Angiography of the Fetal Head and Neck Vessels

ISMRM MERIT AWARD magna cum laude

Uday Krishnamurthy[1, 2], Jaladhar Neelavalli[1, 2], Pavan Kumar Jella[1], Ehsan Hamtaei[1], Swati Mody[1], Brijesh Kumar Yadav[1, 2], Edgar Hernandez-Andrade[3, 4], Lami Yeo[3, 4], Maria D. Cabrera[1], Ewart Mark Haacke[1, 2], Sonia S. Hassan[3, 4], Roberto Romero[4]

[1]Department of Radiology, Wayne State University, Detroit, MI, United States; [2]Department of Biomedical Engineering, Wayne State University, Detroit, MI, United States; [3]Department of Obstetrics and Gynecology, Wayne State University, Detroit, MI, United States; [4]Perinatology Research Branch, NICHD, NIH, DHHS, Wayne State University, Detroit, MI, United States

14:54 0639. Automated ROI Extraction of Placental and Fetal Regions for 30 Minutes of EPI BOLD Acquisition with Different Maternal Oxygenation Episodes

Esra Abaci Turk[1], Jie Luo[1], Angel Torrado-Carvajal, [12], Tobias Hahn[1], Maria Teulon Gonzalez, [13], Borjan Gagoski[4], Carolina Bibbo[5], Julian N. Robinson[5], Juan A. Hernandez-Tamames, [12], Patricia Ellen Grant[4], Elfar Adalsteinsson, [16], Javier Pascau, [17], Norberto Malpica, [12]

[1]Madrid-MIT M+Vision Consortium in RLE, Massachusetts Institute of Technology, Cambridge, MA, United States; [2]Medical Image Analysis and Biometry Laboratory, Universidad Rey Juan Carlos, Mostoles, Madrid, Spain; [3]Department of Obstetrics and Gynecology, Hospital Universitario de Fuenlabrada, Madrid, Spain; [4]Fetal-Neonatal Neuroimaging & Developmental Science Center, Boston Children's Hospital, Harvard Medical School, Boston, MA, United States; [5]Department of Obstetrics and Gynecology, Division of Maternal and Fetal Medicine, Brigham and Women's Hospital, Boston, MA, United States; [6]Dept. of Electrical Engineering and Computer Science, Harvard-MIT Health Sciences and Technology, Massachusetts Institute of Technology, Cambridge, MA, United States; [7]Department of Biomedica Eng. , Universidad Carlos III de Madrid – Instituto de Investigacion Sanitaria Gregorio Maranon, Madrid, Spain

15:06 0640. Comparison of Optimized Endovaginal Vs. External Array Coil T2-W and Diffusion-Weighted Imaging Techniques for Detecting Suspected Early Stage (Ia/Ib1) Uterine Cervical Cancer

Kate Downey[1], Veronica Morgan[1], Alison MacDonald[1], Sharon Giles[1], John Shepherd[2], Thomas Ind[2], Ayoma Attygalle[3], Steve Hazell[3], Nandita deSouza[1]

[1]CRUK Cancer Imaging Centre, The Institute of Cancer Research and The Royal Marsden Hospital, Sutton, Surrey, United Kingdom; [2]Gynaecological Surgery, The Royal Marsden Hospital, London, United Kingdom; [3]Histopathology, The Royal Marsden Hospital, London, United Kingdom

15:18 0641. Assessment of Fetal Fat Distribution with Water-Fat MRI

Craig Olmstead[1], Lanette Friesen-Waldner[2], Abraam Soliman[3, 4], Kevin Sinclair[2], Barbra de Vrijer[5], Charles McKenzie[2, 3]

[1]Schulich School of Medicine and Dentistry, University of Western Ontario, London, Ontario, Canada; [2]Department of Medical Biophysics, University of Western Ontario, London, Ontario, Canada; [3]Robarts Research Institute, University of Western Ontario, London, Ontario, Canada; [4]Department of Biomedical Engineering, University of Western Ontario, London, Ontario, Canada; [5]Department of Obstetrics and Gynaecology, University of Western Ontario, London, Ontario, Canada

Developing & Aging Brain

Constitution Hall 107 13:30-15:30 *Moderators:* Christopher D. Kroenke, Ph.D. & Pratik Mukherjee, M.D., Ph.D.

13:30 0642. In-Utero Localized Diffusion MRI of the Embryonic Mouse Brain Microstructure and Injury

ISMRM MERIT AWARD summa cum laude

Dan Wu[1], Jun Lei[2], Jason Rosenzweig[2], Irina Burd[2], Jiangyang Zhang[3]

[1]Biomedical Engineering, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Gynecology and Obstetrics, Johns Hopkins University School of Medicine, MD, United States; [3]Radiology, Johns Hopkins University School of Medicine, MD, United States

13:42 0643. Longitudinal in Utero Characterization of Cerebral Cortical Surface Area, Curvature and Fractional Anisotropy in the Rhesus Monkey

ISMRM MERIT AWARD magna cum laude

Xiaojie Wang[1], Colin Studholme[2], Christopher D. Kroenke[1]

[1]Oregon Health & Science University, Portland, OR, United States; [2]University of Washington, Seattle, WA, United States

13:54 0644. Full 3D Mapping of T2* Relaxation Times from Mid to Late Gestation of the Normal Fetal Brain

Anna I. Blazejewska[1], Sharmishtaa Seshamani[2], Susan K. McKown, Jason S. Caucutt, Manjiri Dighe, Christopher Gatenby, Colin Studholme[2]
[1]BICG, University of Washington, Seattle, WA, United States; [2]BICG, University of Washington, WA, United States

14:06 0645. Relating the Structural and Functional Maturation of Visual and Auditory White Matter Pathways with Diffusion Imaging and Event-Related Potentials in Infants

ISMRM MERIT AWARD magna cum laude

Parvaneh Adibpour[1, 2], Ghislaine Dehaene-Lambertz[1, 2], Jessica Dubois[1, 2]
[1]Cognitive Neuroimaging Unit, INSERM, Gif-sur-Yvette, France; [2]NeuroSpin, CEA, Gif-sur-Yvette, France

14:18 0646. Developmental Characterization of Sub-Cortical White Matter Tracts

ISMRM MERIT AWARD magna cum laude

Adeoye Oyefiade[1], Stephanie Ameis[2, 3], Nadia Scantlebury[1, 2], Alexandra Decker[2], Kamila U. Szulc[2], Donald J. Mabbott[1, 2]
[1]Psychology, The Hospital for Sick Children, Toronto, ON, Canada; [2]Neurosciences and Mental Health, The Hospital for Sick Children, Toronto, ON, Canada; [3]Child and Youth Mental Health, Center for Addiction and Mental Health, Toronto, Toronto, ON, Canada

14:30 0647. Age-Related Changes in Total Cerebral and Cardiac Blood Flow in Children and Adult Volunteers from 7 Months to 60 Years

ISMRM MERIT AWARD magna cum laude

Can Wu[1, 2], Samantha Schoeneman[3], Amir Honarmand[2], Susanne Schnell[2], Michael Markl[1, 2], Ali Shaibani[2, 3]
[1]Biomedical Engineering, Northwestern University, Chicago, IL, United States; [2]Radiology, Northwestern University, Chicago, IL, United States; [3]Medical Imaging, Ann & Robert H. Lurie Children's Hospital of Chicago, Chicago, IL, United States

14:42 0648. Cell Volume Fraction ("cell Density") Is Stable Despite Cerebral Volume Loss in Normal Human Ageing as Measured by Quantitative Sodium MR Imaging at 9.4Tesla

Elaine H. Lui[1, 2], Jonathan Guntin[3], Saad Jamil[3], Ziqi Sun[3], Ian C. Atkinson[3], Keith R. Thulborn[3]
[1]Radiology, Royal Melbourne Hospital, University of Melbourne, Parkville, Victoria, Australia; [2]Centre of Magnetic Resonance Research, University of Illinois Chicago, Chicago, IL, United States; [3]Centre of Magnetic Resonance Research, University of Illinois Chicago, IL, United States

14:54 0649. Densely Packed White Matter Regions Are Less Prone to Develop White Matter Hyperintensities

ISMRM MERIT AWARD magna cum laude

Robert S. Vorburger[1], Atul Narkhede[1], Yunglin Gazes[1], Vanessa A. Guzman[1], Yaakov Stern[1, 2], Adam M. Brickman[1, 2]
[1]Taub Institute, Columbia University, New York, United States; [2]Department of Neurology, Columbia University, New York, United States

15:06 0650. Correlation of Brain Atrophy to Decreased CBF and CVR in Coronary Artery Disease Patients.

Udunna Anazodo[1, 2], Kevin Shoemaker[3], Neville Suskin[4], Danny JJ Wang[5], Keith S. St Lawrence[1, 2]
[1]Lawson Health Research Institute, London, Ontario, Canada; [2]Medical Biophysics, Western University, London, Ontario, Canada; [3]School of Kinesiology, Western University, London, Ontario, Canada; [4]London Health Sciences Cardiology Rehabilitation Program, London, Ontario, Canada; [5]University of California, Los Angeles, CA, United States

15:18 0651. Longitudinal Relationship Between Amyloid Burden and Cerebrovascular Health in Healthy Individuals: a Combined MRI and PET Study

Peiying Liu[1], Karen Rodrigue[2], Kristen Kennedy[2], Shin-Lei Peng[1], Yang Li[1], Michael Devous[3], Denise Park[2], Hanzhang Lu[1]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Center for Vital Longevity, University of Texas at Dallas, TX, United States; [3]Avid Radiopharmaceuticals Inc, TX, United States

Novel Pulse Sequences & Trajectories

John Bassett Theatre 102 13:30-15:30 *Moderators:*Fernando E. Boada, Ph.D. & Zhiqiang Li, Ph.D.

13:30 0652. 3D Cones Reordering Design Methods for Whole-Heart Coronary MR Angiography
Mario O. Malavé[1], Nii Okai Addy[1], R. Reeve Ingle[1], Joseph Y. Cheng[1], Dwight G. Nishimura[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States

13:41 0653. McMPRAGE (Multi-Contrast MPRAGE): A Novel Sequence for Generating Multiple Contrast Images in a Single Scan
Manojkumar Saranathan[1], Brian K. Rutt[1]
[1]Dept. of Radiology, Stanford University, Stanford, CA, United States

13:52 0654. Rapid Whole-Body Quantitative Fat Water Imaging with Golden Angle Continuously Moving Table MRI at 3 Tesla
ISMRM MERIT AWARD magna cum laude
Saikat Sengupta[1, 2], David S. Smith[1, 3], E. Brian Welch[1, 2]
[1]Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [2]Vanderbilt University Institute of Imaging Science , Nashville, TN, United States; [3]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States

14:03 0655. Real-Time Speech MRI: A Comparison of Cartesian and Non-Cartesian Sequences
Andreia C. Freitas[1, 2], Marzena Wylezinska, [12], Malcolm J. Birch[2], Steffen E. Petersen[1], Marc E. Miquel, [12]
[1]William Harvey Research Institute, Queen Mary University of London, London, United Kingdom; [2]Clinical Physics, Barts Health NHS Trust, London, United Kingdom

14:14 0656. Improve O-Space Imaging Using High-Resolution Oversampled Data Acquisitions
Haifeng Wang[1], Leo Tam[1], Emre Kopanoglu[1], Dana Peters[1], Gigi Galiana[1], R. Todd Constable[1]
[1]Department of Diagnostic Radiology, Yale University, New Haven, CT, United States

14:25 0657. Off-Resonance Blurring Tolerant Image Reconstruction of 3D Radial MRI with Linogram Sampling
Naoharu Kobayashi[1], Djaudat Idiyatullin[1], Curtis A. Corum[1], Michael Garwood[1]
[1]Center for Magnetic Resonance Research, Department of Radiology, University of Minnesota, Minneapolis, MN, United States

14:36 0658. Artifact Free 3D Fast Spin Echo Imaging Using a Single Excitation
Yuval Zur[1], Weitian Chen[2]
[1]GE Healthcare, Tirat Carmel, Israel; [2]Applied Science Lab, GE Healthcare, Menlo Park, CA, United States

14:47 0659. ZTE Imaging with Enhanced Flip Angle Using Modulated Excitation
Konrad Schieban[1], Markus Weiger[1], Franciszek Hennel[2], Andreas Boss[3], Klaas Paul Pruessmann[1]
[1]Institute for Biomedical Engineering, ETH Zurich, Zurich, Switzerland; [2]Bruker BioSpin MRI GmbH, Ettlingen, Germany; [3]Institute for Diagnostic and Interventional Radiology, University Hospital Zurich, Zurich, Switzerland

14:58 0660. Ramped Hybrid Encoding for Improved Ultrashort TE Imaging
ISMRM MERIT AWARD summa cum laude
Hyungseok Jang[1, 2], Curtis N. Wiens[1], Alan B. McMillan[1]
[1]Radiology, University of Wisconsin, Madison, WI, United States; [2]Electrical and Computer Engineering, University of Wisconsin, Madison, WI, United States

Combined Educational & Scientific Session
Cardiovascular Tissue Characterization

Organizers: Daniel B. Ennis, Ph.D. & Martin J. Graves, Ph.D.
Room 718 A 13:30-15:30 *Moderators:* Neville D. Gai, Ph.D. & Richard B. Thompson, Ph.D.

13:30 What Is the Clinical Value of Quantitative Myocardial Tissue Characterization?
Jeanette Schulz-Menger

14:00 0661. Application of Native Myocardial T1 Mapping in Subjects with Coronary Microvascular Dysfunction and No Obstructive Coronary Artery Disease
ISMRM MERIT AWARD magna cum laude

[1]Biomedical Imaging Research Institute, Cedars-Sinai Medical Center, Los Angeles, CA, United States; [2]Department of Bioengineering, University of California, Los Angeles, Los Angeles, CA, United States; [3]Cedars-Sinai Heart Institute, Los Angeles, CA, United States

14:12 0662. Black-Blood Contrast-Enhanced MRI: Validation of a Novel Technique for the Diagnosis of Myocardial Infarction

Han W. Kim[1], Wolfgang G. Rehwald[2], David C. Wendell[1], Elizabeth R. Jenista[1], Lowie Van Assche[1], Christoph Jensen[1], Peter Filev[1], Enn-Ling Chen[1], Michele A. Parker[1], Raymond J. Kim[1]

[1]Cardiology/Medicine, Duke Cardiovascular Magnetic Resonance Center, Duke University Medical Center, Durham, NC, United States; [2]Siemens Healthcare, NC, United States

14:24 0663. Cardiovascular Susceptibility Weighted Imaging Computed Using Water-Fat Separation Improves Intramyocardial Hemorraghe Detection Specificity

James Goldfarb[1, 2]

[1]Department of Research and Education, Saint Francis Hospital, Roslyn, NY, United States; [2]Biomedical Engineering, Stony Brook University, Stony Brook, NY, United States

14:54 What Is the Clinical Value of Vessel Wall Characterization?

Tobias Saam

15:06 0664. Intracranial Vessel Wall MR Registry

Qi Yang[1, 2], Haiqing Song[2], Hongqi Zhang[2], Feng Ling[2], Yiu-Cho Chung[3], Lei Zhang[3], Zhaoyang Fan[1], Xin Liu[3], Kuncheng Li[2], Debiao Li[1]

[1]Biomedical Imaging Research Institute, Cedars Sinai Medical Center, LA, CA, United States; [2]Xuanwu Hospital, Beijing, China; [3]Shenzhen Institutes of Advanced Technology, Chinese Academic of Sciences, Shenzhen, Guangdong, China

15:18 0665. Evaluation of Distribution of Femoral Artery Atherosclerotic Disease in Asymptomatic Old Adults Using 3D MR Vessel Wall Imaging

Maobin Guan[1], Huijun Chen[2], Zhu Zhu[1], Le He[2], Qiang Zhang[2], Niranjan Balu[3], Chun Yuan[2, 3], Xihai Zhao[2]

[1]Department of Radiology, Yangzhou First People's Hospital, Yangzhou, China; [2]Center for Biomedical Imaging research, Department of Biomedical Engineering, Tsinghua University School of Medicine, Beijing, China; [3]Department of Radiology, University of Washington, Seattle, WA, United States

15:30 Adjournment & Meet the Teachers

Educational Course
MR Economics

Organizers: Kevin M. Bennett, Ph.D. & Xiaohong Joe Zhou, Ph.D., D.A.B.R.

Room 718 B 13:30-15:30 *Moderators:* Kevin M. Bennett, Ph.D. & Xiaohong Joe Zhou, Ph.D., D.A.B.R.

13:30 MRI in Clinical Care & Research

Hedvig Hricak

14:00 MRI & Health in Developing Countries

Chun Yuan

14:30 Optimizing Clinical Protocols

Geoffrey S. Young

15:00 New Technology & Health Care Costs

James G. Pipe

15:30 Adjournment & Meet the Teachers

Educational Course
Spine

*Organizers:*Jonathan H. Gillard, M.D., FRCR, MBA & Howard A Rowley, M.D.

Room 801 A/B 13:30-15:30 *Moderators:*David B. Hackney, M.D. & Roland R. Lee, M.D.

13:30 **MR in Low Back Pain: What the Neuroradiologist Can Contribute**
Michael T. Modic

14:00 **MR in Low Back Pain: What Should We Do & Why?**
Johan W.M. Van Goethem

14:30 **Spinal MR: What Multiparametric MR Can Add: A Physicist's Perspective**
Julien Cohen-Adad

15:00 **Spinal MR: What Multiparametric MR Can Add: A Clinician's Perspective**
Lawrence N. Tanenbaum

15:30 **Adjournment & Meet the Teachers**

Hands-On Workshop 2 - Siemens

Room 711 13:30-15:30 *(no CME credit)*

Hands-On Workshop 2 - GE Healthcare

Room 703 13:30-15:30 *(no CME credit)*

Hands-On Workshop 2 - Philips Healthcare

Room 707 13:30-15:30 *(no CME credit)*

Traditional Poster Session: Pulse Sequences

Exhibition Hall 16:00-18:00 *(no CME credit)*

Electronic Poster Session: Neuro B

Exhibition Hall 16:00-18:00 *(no CME credit)*

Study Group Session
Interventional MR

Reception Hall 104 BCD 16:00-18:00 *(no CME credit)*

Study Group Session
Current Issues in Brain Function

Constitution Hall 105 16:00-18:00 *(no CME credit)*

Power Pitch Session: Cancer

Power Pitch Theatre, Exhibition Hall 16:00-17:00 *(no CME credit)*

*Moderators:*Bachir Taouli, M.D. & T.B.A.

0666. **Comparing Functional Tumor Volume and Pharmacokinetic Parameter in DCE-MRI Prediction of Breast Cancer Therapy Response: A Preliminary Study**
Alina Tudorica[1], David C. Newitt[2], Karen Y. Oh[1], Nicole Roy[1], Stephen Y-C Chui[1], Arpana Naik[1], Megan L. Troxell[1], Yiyi Chen[1], Aneela Afzal[1], Megan L. Holtorf[1], Nola M. Hylton[2], Wei Huang[1]
[1]Oregon Health & Science University, Portland, OR, United States; [2]University of California, San Francisco, CA, United States

0667. Can Model Weighting Improve the Accuracy of DCE-MRI Parameter Estimation?

Xia Li[1], Lori R. Arlinghaus[1], Erin Rericha[1], Thomas Yankeelov[1]
[1]Vanderbilt University, Nashville, TN, United States

0668. Impact of Non-Rigid Motion Correction on Pharmaco-Kinetic Analysis for Breast Dynamic Contrast-Enhanced MRI

Venkata Veerendra Nadh Chebrolu[1], Dattesh Shanbhag[1], Reem Bedair[2], Sandeep Gupta[3], Patrice Hervo[4], Scott Reid[5], Fiona Gilbert[2], Andrew Patterson[6], Martin Graves[7], Rakesh Mullick[8]
[1]Medical Image Analysis Lab, GE Global Research, Bangalore, Karnataka, India; [2]Radiology, University of Cambridge, Cambridge, United Kingdom; [3]Biomedical Image Analysis Lab, GE Global Research, NY, United States; [4]GE Healthcare, Buc, France; [5]GE Healthcare, Amersham, United Kingdom; [6]Cambridge University Hospitals Trust, Cambridge, United Kingdom; [7]Radiology, Cambridge University Hospitals Trust, Cambridge, United Kingdom; [8]Diagnostics & Biomedical Technologies, GE Global Research, Bangalore, Karnataka, India

0669. Dynamic Contrast Enhanced MRI Estimate of Tumor Interstitial Fluid Pressure in Solid Brain Tumors

ISMRM MERIT AWARD summa cum laude

Madhava P. Aryal[1], Tavarekere N. Nagaraja[2], Rasha Elmghribi, [13], Kelly A. Keenan[2], Swayamprava Panda[1], Glauber Cabral[1], Stephen L. Brown[4], James R. Ewing, [13]
[1]Dept. of Neurology, Henry Ford Hospital, Detroit, MI, United States; [2]Dept. of Anesthesiology, Henry Ford Hospital, Detroit, MI, United States; [3]Dept. of Physics, Oakland University, Rochester, MI, United States; [4]Dept. of Radiation Oncology, Henry Ford Hospital, Detroit, MI, United States

0670. Quantitative Perfusion Measurements in Renal Masses with Arterial Spin Labeling and Dynamic Contrast Enhanced MRI at 3T Correlate with Microvessel Density at Histopathology

Yue Zhang[1], Payal Kapur[2, 3], Qing Yuan[1], Ananth Madhuranthakam[1, 4], Ingrid Carvo[5], Sabina Signoretti[5], Ivan Dimitrov[6], Yin Xi[1], Katherine Wicks[1], Jeffrey Cadeddu[1, 3], Vitaly Margulis[3], James Brugarolas[7, 8], Ivan Pedrosa[1, 4]
[1]Radiology, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Pathology, University of Texas Southwestern Medical Center, Dallas, TX, United States; [3]Urology, University of Texas Southwestern Medical Center, Dallas, TX, United States; [4]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [5]Pathology, Brigham and Women's Hospital, Boston, MA, United States; [6]Philips Medical Systems, Cleveland, OH, United States; [7]Internal Medicine, University of Texas Southwestern Medical Center, Dallas, TX, United States; [8]Developmental Biology, University of Texas Southwestern Medical Center, Dallas, TX, United States

0671. Classification of Tumor Sub-Volumes Based on Dynamic Contrast Enhanced MRI Model Hierarchy for Locally Advanced Cervical Cancer

ISMRM MERIT AWARD magna cum laude

Jesper Folsted Kallehauge[1, 2], Thomas Nielsen[3], Markus Alber[1], Søren Haack, [24], Erik Morre Pedersen[5], Jacob Christian Lindegaard[2], Anne Ramlov[2], Kari Tanderup[6, 7]
[1]Dept. of Medical Physics, Aarhus University Hospital, Aarhus, Denmark; [2]Dept. of Oncology, Aarhus University Hospital, Aarhus, Denmark; [3]CFIN/Mindlab, Aarhus University Hospital, Aarhus, Denmark; [4]Dept. of Clinical Engineering, Aarhus University Hospital, Aarhus, Denmark; [5]Dept. of Radiology, Aarhus University Hospital, Aarhus, Denmark; [6]Dept. of Experimental Clinical Oncology, Aarhus University Hospital, Aarhus, Denmark; [7]Dept. of Clinical Medicine, Aarhus University , Aarhus, Denmark

0672. Evaluation of Stretched-Exponential Model for Diffusion-Weighted Imaging of Breast Lesions Using High B Values: Comparison with Monoexponential Diffusion Weighted Imaging

Chunling Liu[1], Changhong Liang[1], Yingjie Mei[2], Zaiyi Liu[1], Jine Zhang[1]
[1]Department of Radiology, Guangdong General Hospital/Guangdong Academy of Medical Sciences, Guangzhou, Guangdong, China; [2]Philips Healthcare, Guangzhou, Guangdong, China

0673. SUV-ADC Mapping of Malignant and Benign Prostate Lesions with PET-MRI

Yachao Liu[1], Jiangping Gao[2], Jiajin Liu[1], Hui Liu[3], Yong Xu[2], Baixuan Xu[1], Jiahe Tian[1]
[1]Nuclear Medicine Department, PLA 301 General Hospital, Beijing, China; [2]Urology Department, PLA 301 General Hospital, Beijing, China; [3]NEA MR Collaboration, Siemens Ltd., China, Shanghai, China

0674. Simultaneous ^{18}F-FACBC PET/MRI for Loco-Regional Staging of Prostate Cancer: Considerations on Imaging Protocol Design

Mattijs Elschot[1], Kirsten M. Selnæs[1, 2], Brage Krüger-Stokke[1, 3], Øystein Størkersen[4], Helena Bertilsson[5, 6], Siver A. Moestue[1, 2], Tone F. Bathen[1, 2]

[1]Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Sør-Trøndelag, Norway; [2]St Olavs Hospital, Trondheim, Sør-Trøndelag, Norway; [3]Department of Radiology, St Olavs Hospital, Trondheim, Sør-Trøndelag, Norway; [4]Department of Pathology, St Olavs Hospital, Trondheim, Sør-Trøndelag, Norway; [5]Department of Urology, St Olavs Hospital, Trondheim, Sør-Trøndelag, Norway; [6]Department of Cancer Research and Molecular Medicine, Norwegian University of Science and Technology, Trondheim, Sør-Trøndelag, Norway

0675. Multiparametric Hybrid 18FDG-PET/MRI in Patients with Multiple Myeloma: Initial Experience

Jennifer Mosebach[1], Christos Sachpekidis[2], Martin Freitag[1], Jens Hillengass[3], Antonia Dimitrakopoulou-Strauss[2], Uwe Haberkorn[4], Heinz-Peter Schlemmer[1], Stefan Delorme[1]

[1]Department of Radiology, German Cancer Research Center, Heidelberg, Germany; [2]Clinical Cooperation Unit Nuclear Medicine, German Cancer Research Center, Heidelberg, Germany; [3]Department of Medicine V, Multiple Myeloma Section, University of Heidelberg, Heidelberg, Germany; [4]Division of Nuclear Medicine, University of Heidelberg, Heidelberg, Germany

0676. 4D Echo Planar Correlated Spectroscopic Imaging and DWI of Breast Cancer

Rajakumar Nagarajan[1], Neil Wilson[1], Nanette DeBruhl[1], Brian Burns[1], Melissa Joines[1], Maithili Gopalakrishnan[1], Fausto Rendon[1], Lawrence W. Bassett[1], M.Albert Thomas[1]

[1]Radiological Sciences, UCLA School of Medicine, Los Angeles, CA, United States

0677. Relaxation-Weighted Sodium MRI of Breast Lesions at 7T

ISMRM MERIT AWARD magna cum laude

Stefan Zbyn[1], Olgica Zaric[1], Vladimir Juras[1], Katja Pinker[2], Alex Farr[3], Nadia Benkhedah[4], Pascal Balzer[2], Vladimir Mlynarik[1], Armin Nagel[4], Christian Singer[3], Thomas Helbich[2], Wolfgang Bogner[1], Siegfried Trattnig[1]

[1]High Field MR Center, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria; [2]Division of Molecular and Gender Imaging, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria; [3]Department of Gynecology and Obstetrics, Medical University of Vienna, Vienna, Austria; [4]Department of Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

0678. Noninvasive Assessment of Lymphatic Impairment and Interstitial Protein Accumulation Using Chemical Exchange Saturation Transfer (CEST) MRI

Manus Donahue[1, 2], Paula CM Donahue[3, 4], Swati Rane[1], Megan K. Strother[1], Allison O. Scott[1], Seth A. Smith[1]

[1]Radiology and Radiological Sciences, Vanderbilt University Medical Center, Nashville, TN, United States; [2]Physics and Astronomy, Vanderbilt University , Nashville, TN, United States; [3]Physical Medicine and Rehabilitation, Vanderbilt University Medical Center, Nashville, TN, United States; [4]Dayani Center for Health and Wellness, Nashville, TN, United States

0679. Combining 'omics'; Metabolic Breast Cancer Subclass Correlation with Protein and Gene Expression Subtypes

Tonje H. Haukaas[1, 2], Leslie R. Euceda[1], Guro F. Giskeødegård[1], Marit Krohn[3, 4], Ellen Schlichting[5], Rolf Kåresen[3, 5], Sandra Nyberg[3, 4], Kristine Kleivi Sahlberg[3, 4], Anne-Lise Børresen-Dale[3, 4], Tone F. Bathen[1, 3]

[1]Department of Circulation and Medical Imaging, Faculty of Medicine, NTNU, Trondheim, Norway; [2]K.G. Jebsen Center for Breast Cancer Research, Institute of Clinical Medicine , Faculty of Medicine, University of Oslo, Oslo, Norway; [3]K.G. Jebsen Center for Breast Cancer Research, Institute of Clinical Medicine, Faculty of Medicine, University of Oslo, Oslo, Norway; [4]Department of Genetics, Institute for Cancer Research Oslo University Hospital, , The Norwegian Radium Hospital, Oslo, Norway; [5]Department of Surgery, Oslo University Hospital, Ullevål, Oslo, Norway

0680. Using Radiogenomics to Characterize MRI-Guided Prostate Cancer Biopsy Heterogeneity

Radka Stoyanova[1], Alan Pollack[1], Nicholas Erho[2], Charles Lynne[3], Lucia Lam[2], Christine Buerki[2], Sakhi Abraham[1], Merce Jorda[4], Olexandr Kryvenko[4], Matthew Abramowitz[1], Elai Davicioni[2], Adrian Ishkanian[1]

[1]Radiation Oncology, University of Miami, Miami, FL, United States; [2]GenomeDx Biosciences, Vancouver, British Columbia, Canada; [3]Urology, University of Miami, Miami, FL, United States; [4]Pathology, University of Miami, Miami, FL, United States

Spinal Cord & ENT Imaging

Room 701 A 16:00-18:00 *Moderators:* Roland R. Lee, M.D. & Yukio Miki, Ph.D.

16:00 0681. Regional and Age-Related Variations of the Healthy Spinal Cord Structure Assessed by Multimodal MRI (Diffusion, Inhomogeneous Magnetization Transfer, IhMT)

ISMRM MERIT AWARD magna cum laude

Manuel Taso[1, 2], Olivier M. Girard[3, 4], Guillaume Duhamel[3, 4], Arnaud Le Troter[3, 4], Guilherme Ribeiro[3, 4], Thorsten Feiweier[5], Maxime Guye[3, 4], Jean-Philippe Ranjeva[3, 4], Virginie Callot[3, 4]

[1]CRMBM-CEMEREM UMR 7339, Aix-Marseille Université, CNRS, Marseille, France; [2]LBA UMR T 24, Aix-Marseille Université, IFSTTAR, Marseille, France; [3]CRMBM UMR 7339, Aix-Marseille Université, CNRS, Marseille, France; [4]CEMEREM, Pole d'imagerie médicale, Hopital la TImone, AP-HM, Marseille, France; [5]Siemens AG, Healthcare, Erlangen, Germany

16:12 0682. Validation of MRI Microstructure Measurements with Coherent Anti-Stokes Raman Scattering (CARS)

ISMRM MERIT AWARD summa cum laude

Tanguy Duval[1], Alicja Gasecka[2, 3], Philippe Pouliot[1, 4], Daniel Côté[2, 3], Nikola Stikov[1, 5], Julien Cohen-Adad[1, 6]
[1]Institute of Biomedical Engineering, Polytechnique Montréal, Montréal, Qc, Canada; [2]Quebec Mental Health University Institute, Québec, Qc, Canada; [3]Doptic, photonic and laser Center, Université Laval, Québec, Qc, Canada; [4]Montreal Heart Institute, Montreal, Quebec, Canada; [5]Montreal Neuronal Institute, McGill University, Montréal, Québec, Canada; [6]Functional Neuroimaging Unit, CRIUGM, Université de Montréal, Montréal, Qc, Canada

16:24 0683. Diffusion MRI Reveals Tissue Specific Changes in Early and Late Stages of Degeneration Within the Spinal Cord

ISMRM MERIT AWARD magna cum laude

Torben Schneider[1], Gemma Nejati-Gilani[2, 3], Mohamed Tachrount[4], Ying Li[5], Amber Hill[4], Olga Ciccarelli[4], Ken Smith, David Thomas[6], Daniel C. Alexander[3], Claudia A M Wheeler-Kingshott[1]
[1]NMR Research Unit, Department of Neuroinflammation, Queen Square MS Centre, UCL Institute of Neurology, London, United Kingdom; [2]Department of Infectious Disease Epidemiology, Imperial College, London, United Kingdom; [3]Centre for Medical Image Computing, Department of Computer Science, University College London, London, United Kingdom; [4]Brain Repair & Rehabilitation, UCL Institute of Neurology, London, United Kingdom; [5]Spinal Repair Unit, Brain Repair & Rehabilitation, UCL Institute of Neurology, London, United Kingdom; [6]Leonard Wolfson Experimental Neurology Centre, UCL Institute of Neurology, London, United Kingdom

16:36 0684. Longitudinal Characterization of the Wallerian Degeneration Process by a Multi-Compartment Diffusion Model: DIAMOND After a Rhizotomy in the Rat Spinal Cord and Comparison with the Histology

ISMRM MERIT AWARD summa cum laude

Damien Jacobs[1], Benoit Scherrer[2], Aleksandar Jankovski[3], Anne des Rieux[4], Maxime Taquet[1], Bernard Gallez[4], Simon K. Warfield[2], Benoit Macq[1]
[1]ICTEAM, Universite catholique de Louvain, Louvain-La-Neuve, Belgium; [2]Computational Radiology Laboratory, Boston Childrens Hospital, MA, United States; [3]Hopital universitaire Mont-Godinne, Universite catholique de Louvain, Godinne, Belgium; [4]LDRI, Universite catholique de Louvain, Brussels, Belgium

16:48 0685. Diffusion Basis Spectrum Imaging Quantifies Pathologies in Cervical Spondylotic Myelopathy

Peng Sun[1], Rory Murphy[2], Yong Wang[1], Joanne Wagner[3], Sammir Sullivan[1], Paul Gamble[2], Kim Griffin[1, 2], Wilson Z. Ray[2], Sheng-Kwei Song[1]
[1]Radiology, Washington University in St. Louis, St. Louis, MO, United States; [2]Neurosurgery, Washington University in St. Louis, St. Louis, MO, United States; [3]Physical Therapy and Athletic Training, Saint Louis University, St. Louis, MO, United States

17:00 0686. Evaluating the Feasibility of Monitoring *In Vivo* Spinal Cord Metabolism Using Hyperpolarized Carbon-13 MR Spectroscopic Imaging

ISMRM MERIT AWARD magna cum laude

Ilwoo Park[1], Jason F. Talbott[1, 2], Sarah J. Nelson[1, 3]
[1]Department of Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [2]Brain and Spine Injury Center (BASIC), San Francisco General Hospital, San Francisco, CA, United States; [3]Department of Bioengineering and Therapeutic Sciences, University of California San Francisco, CA, United States

17:12 0687. Computer-Aided Diagnosis of Head and Neck Lesions from Non-Gaussian Diffusion MRI Signal Patterns

Mami Iima[1], Akira Yamamoto[1], Denis Le Bihan[2, 3], Shigeru Hirano[4], Ichiro Tateya[4], Morimasa Kitamura[4], Kaori Togashi[1]
[1]Department of Diagnostic Imaging and Nuclear Medicine, Graduate School of Medicine, Kyoto University, Kyoto, Japan; [2]Human Brain Research Center, Graduate School of Medicine, Kyoto University, Kyoto, Japan; [3]Neurospin, CEA-Saclay Center, Gif-sur-Yvette Cedex, France; [4]Department of Otolaryngology, Head and Neck Surgery, Graduate School of Medicine, Kyoto University, Kyoto, Japan

17:24 0688. Diffusion Imaging of Head and Neck at High Angular and Spatial Resolution Using Multi-Shot Spirals

Merry Mani[1], Mathews Jacob[2], Vincent Magnotta[3]
[1]Dept of Psychiatry, University of Iowa, Iowa City, IA, United States; [2]Dept of Electrical and Computer Engineering, University of Iowa, Iowa City, IA, United States; [3]Dept of Radiology, University of Iowa, Iowa City, IA, United States

17:36 0689. High Spatio-Temporal Resolution Multi-Slice Real Time MRI of Speech Using Golden Angle Spiral Imaging with Constrained Reconstruction, Parallel Imaging, and a Novel Upper Airway Coil

ISMRM MERIT AWARD magna cum laude

Sajan Goud Lingala[1], Yinghua Zhu[1], Yoon-Chul Kim[2], Asterios Toutios[1], Shrikanth Narayanan[1], Krishna S. Nayak[1]
[1]Electrical Engineering, University of Southern California, Los Angeles, CA, United States; [2]Samsung Medical Center, Seoul, Korea

17:48 0690. High Resolution Magnetic Resonance Elastography of the Human Eye *In Vivo*: A Feasibility Study

Jürgen Braun[1], Sebastian Hirsch[2], Jing Guo[2], Katharina Erb-Eigner[2], Ingolf Sack[2]
[1]Department of Medical Informatics, Charité - Universitätsmedizin Berlin, Berlin, Germany; [2]Department of Radiology, Charité - Universitätsmedizin Berlin, Berlin, Germany

Cell Memories: Cell Tracking & MEMRI

Room 701 B 16:00-18:00 *Moderators:* Ichio Aoki, Ph.D. & Paula J. Foster, Ph.D.

16:00 0691. *In Vivo* Monitoring of Immune Cell Kinetics with Time-Lapse MRI in the Ischemic Lesion of Mouse Brain

Yuki Mori[1, 2], Ting Chen[1, 2], Yoshichika Yoshioka[1, 2]
[1]Biofunctional Imaging, Immunology Frontier Research Center (IFReC), Osaka University, Suita, Osaka, Japan; [2]Center for Information and Neural Networks, Suita, Osaka, Japan

16:12 0692. Dual Iron/Fluorine Cell Tracking: Monitoring the Fate of Human Stem Cells and the Ensuing Cellular Inflammatory Response

ISMRM MERIT AWARD summa cum laude

Jeff M. Gaudet[1, 2], Matthew S. Fox[1], Amanda M. Hamilton[1], Paula J. Foster[1, 2]
[1]Imaging Research Laboratories, Robarts Research Institute, London, Ontario, Canada; [2]Medical Biophysics, Western University, London, Ontario, Canada

16:24 0693. Comparison of Different Compressed Sensing Algorithms for Low SNR 19F Application --- Imaging of Transplanted Pancreatic Islets with PFCE Labeled

ISMRM MERIT AWARD magna cum laude

Sayuan Liang[1], Yipeng Liu[2], Tom Dresselaers[1], Karim Louchami[3], Sabine Van Huffel[2], Uwe Himmelreich[1]
[1]Department of Imaging & Pathology, KU Leuven, Leuven, Flemish Brabant, Belgium; [2]ESAT, KU Leuven, Leuven, Flemish Brabant, Belgium; [3]Laboratory of Experimental Hormonology, Université Libre de Bruxelles, Brussels, Belgium

16:36 0694. Using SWIFT T1 Mapping to Quantify Iron Oxide Nanoparticles Uptake and Biodistribution in Organs *In-Vivo*

Jinjin Zhang[1], Hattie L. Ring, [12], Katie Hurley[2], Qi Shao[3], Nathan D. Klein[2], Christy Haynes[2], John Bischof[4], Michael Garwood[1]
[1]Center for Magnetic Resonance Research, Department of Radiology, University of Minnesota, Minneapolis, MN, United States; [2]Department of Chemistry, University of Minnesota, MN, United States; [3]Department of Biomedical Engineering, University of Minnesota, MN, United States; [4]Department of Mechanical Engineering, University of Minnesota, MN, United States

16:48 0695. Sensing the High Magnetic Field: Fusion of Otoliths in Zebrafish Larvae Entails a Hint

Patricia Pais Roldán[1], Ajeet Singh[1], Hellmut Merkle[1], Hildegard Schulz[1], Xin Yu[1]
[1]Max Planck Institute, Tuebingen, Baden-Wuerttemberg, Germany

17:00 0696. Genetically Functionalized Magnetosomes as MRI Contrast Agent Suitable for Molecular Imaging

Marianne Boucher[1], Nicolas Ginet[2], Françoise Geffroy[1], Sandra Préveral[2], Géraldine Adryanczyk-Perrier[2], Michel Pean[2], Christopher T. Lefèvre[2], Daniel Garcia[2], David Pignol[2], Sébastien Mériaux[1]
[1]UNIRS, CEA/DSV/I2BM/NeuroSpin, Saclay, France; [2]LBC, CEA/DSV/IBEB/SBVME, Saint-Paul-lez-Durance, France

17:12 0697. Structural-Physiological Relationships in the Visual System Upon Glutamate Excitotoxicity in the Eye Using Diffusion Tensor Imaging and Manganese-Enhanced MRI

ISMRM MERIT AWARD summa cum laude

Leon C. Ho[1, 2], Bo Wang[3, 4], Ian P. Conner[3, 4], Yolandi van der Merwe[1, 4], Richard A. Bilonick[3], Ed X. Wu[2], Seong-Gi Kim[1, 5], Gadi Wollstein[3], Joel S. Schuman[3, 4], Kevin C. Chan[1, 3]
[1]Neuroimaging Laboratory, University of Pittsburgh, Pittsburgh, PA, United States; [2]Department of Electrical and Electronic Engineering, The University of Hong Kong, Pokfulam, Hong Kong, China; [3]Department of Ophthalmology, School of Medicine, University of Pittsburgh, Pittsburgh, PA, United States; [4]Department of Bioengineering, Swanson School of Engineering, University of Pittsburgh, Pittsburgh, PA, United States; [5]Center for Neuroscience Imaging Research, Institute for Basic Science, Sungkyunkwan University, Suwon, Korea

17:24 0698. MEMRI Detects Neuronal Activity and Connectivity in Hypothalamic Neural Circuit.

ISMRM MERIT AWARD magna cum laude

Anna Ulyanova[1], Judy Chia Ghee Sng[2], Weiping Han[3], Kai-Hsiang Chuang[1]
[1]Magnetic Resonance Imaging Group, Singapore Bioimaging Consortium, A*STAR, Singapore, Singapore; [2]Department of Pharmacology, National University of Singapore, Singapore, Singapore; [3]Lab of metabolic Medicine, Singapore Bioimaging Consortium, A*STAR, Singapore, Singapore

17:36 **0699. Manganese PET Enables the Same Contrast as Manganese Enhanced MRI**
Galit Saar[1], Corina M. Millo[2], Lawrence P. Szajek[2], Jeff Bacon[2], Peter Herscovitch[2], Alan P. Koretsky[1]
[1]LFMI/NINDS, NIH, Bethesda, MD, United States; [2]PET Department, Clinical Center, NIH, Bethesda, MD, United States

17:48 **0700. Manganese-Enhanced MRI for Preclinical Evaluation of Therapeutic Efficacy of Retinal Degeneration Treatment**
Rebecca M. Schur[1], Li Sheng[1], Bhubanananda Sahu[2], Guanping Yu[1], Song-Qi Gao[3], Xin Yu[1], Akiko Maeda[2], Krzysztof Palczewski[3], Zheng-Rong Lu[1]
[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Ophthamology and Visual Sciences, Case Western Reserve University, Cleveland, OH, United States; [3]Pharmacology, Case Western Reserve University, Cleveland, OH, United States

Thinking Outside the Box - Novel Technical Development

Room 714 A/B 16:00-18:00 *Moderators:* David O. Brunner, Ph.D. & Steven M. Wright, Ph.D..

16:00 **0701. Plasma Based MRI**
Sebastian A. Aussenhofer[1], Andrew G. Webb[1]
[1]C.J. Gorter Center for High Field MRI, Leiden University Medical Center, Leiden, South-Holland, Netherlands

16:12 **0702. Low Cost High Performance MRI**
Mathieu Sarracanie[1, 2], Cristen LaPierre[1, 2], Najat Salameh[1, 2], David E J Waddington[1, 3], Thomas Witzel[1], Matthew S. Rosen[1, 2]
[1]MGH/A.A. Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [2]Department of Physics, Harvard University, Cambridge, MA, United States; [3]ARC Centre of Excellence for Engineered Quantum Systems, School of Physics, University of Sydney, Sydney, NSW, Australia

16:24 **0703. 3D Imaging in a Portable MRI Scanner Using Rotating Spatial Encoding Magnetic Fields and Transmit Array Spatial Encoding (TRASE)**
ISMRM MERIT AWARD summa cum laude
Clarissa Zimmerman Cooley[1, 2], Jason P. Stockmann[3, 4], Mathieu Sarracanie[3, 4], Matthew S. Rosen[3, 4], Lawrence L. Wald, [23]
[1]A. A. Martinos Center for Biomedical Imaging, Dept. of Radiology, Massachusetts General Hospital, Charlestown, MA, United States; [2]Harvard Medical School, Boston, MA, United States; [3]A. A. Martinos Center for Biomedical Imaging, Dept. of Radiology, Massachusetts General Hospital, Charlestown, MA, United States; [4]Dept. of Physics, Harvard University, Cambridge, MA, United States

16:36 **0704. Custom MEMS Switch for MR Surface Coil Decoupling**
Dan Spence[1], Marco Aimi[2]
[1]GE Healthcare, Waukesha, WI, United States; [2]GE Global Research, Niskayuna, NY, United States

16:48 **0705. Utilization of the Receive Coil for Cardiovascular and Respiratory Motion Representation**
Guido P. Kudielka[1, 2], Christopher J. Hardy[3], Pierre-André Vuissoz[1, 4], Jacques Felblinger[5, 6], Anja C.S. Brau[7]
[1]Imagerie Adaptative Diagnostique et Interventionnelle, Université de Lorraine, Nancy, Lorraine, France; [2]GE Global Research, Munich, BY, Germany; [3]GE Global Research, Niskayuna, NY, United States; [4]U947, INSERM, Nancy, Lorraine, France; [5]CIC-IT 1433, INSERM, Nancy, Lorraine, France; [6]University Hospital Nancy, Nancy, Lorraine, France; [7]GE Healthcare, Munich, BY, Germany

17:00 **0706. An Integrated Mm-Wave Transceiver for Wireless MRI**
Kamal Aggarwal[1], Mazhareddin Taghivand[1], Yashar Rajavi[1], John Pauly[1], Ada Poon[1], Greig Scott[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States

17:12 **0707. RF Gated Wireless Power Transfer System**
ISMRM MERIT AWARD summa cum laude
Kelly Byron[1], Pascal Stang[2], Shreyas Vasanawala[3], John Pauly[1], Greig Scott[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Procyon Engineering, CA, United States; [3]Radiology, Stanford University, Stanford, CA, United States

17:24 0708. Development of a High T_c Superconducting Bulk Magnet with a Homogeneous Magnetic Field Using a Finite Element Method and a Single-Layer Shim Coil
Daiki Tamada[1, 2], Yosuke Yanagi[3], Yoshitaka Itoh[3], Takashi Nakamura[1, 2], Katsumi Kose[1]
[1]Institute of Applied Physics, University of Tsukuba, Tsukuba, Ibaraki, Japan; [2]RIKEN, Wako, Saitama, Japan; [3]IMRA Material R&D., Ltd., Aichi, Japan

17:36 0709. MARIE – a MATLAB-Based Open Source Software for the Fast Electromagnetic Analysis of MRI Systems
ISMRM MERIT AWARD magna cum laude
Jorge Fernandez Villena[1], Athanasios G. Polimeridis[1], Lawrence L. Wald[2, 3], Elfar Adalsteinsson[1, 3], Jacob K. White[1], Luca Daniel[1]
[1]Research Laboratory of Electronics, EECS, Massachusetts Institute of Technology, Cambridge, MA, United States; [2]A.A. Martinos Center for Biomedical Imaging, Dept. of Radiology, Massachusetts General Hospital, MA, United States; [3]Harvard-MIT Division of Health Sciences Technology, Cambridge, MA, United States

17:48 0710. MR Experiments Using a Commercially-Available Software-Defined Radio
Christopher J. Hasselwander[1, 2], William A. Grissom[1, 2], Zhipeng Cao[1, 2]
[1]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States; [2]Biomedical Engineering, Vanderbilt University, Nashville, TN, United States

Myocardial Tissue Characterization - Relaxometry & Diffusion

Room 716 A/B 16:00-18:00 *Moderators:* Martin J. Graves, Ph.D. & T.B.A.

16:00 0711. *In Vivo* Diffusion-Weighted MRI: Contrast-Free Detection of Myocardial Fibrosis in Hypertrophic Cardiomyopathy Patients
ISMRM MERIT AWARD summa cum laude
Christopher Nguyen[1], Minjie Liu[2, 3], Zhaoyang Fan[1], Xiaoming Bi[4], Peter Kellman[5], Debiao Li[1], Shihua Zhao[2, 3]
[1]Biomedical Imaging Research Institute, Cedars Sinai Medical Center, Los Angeles, CA, United States; [2]State Key Laboratory of Cardiovascular Disease, Fuwai Hospital, Beijing, China; [3]National Center for Cardiovascular Diseases, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, China; [4]Siemens Healthcare, Los Angeles, CA, United States; [5]National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD, United States

16:12 0712. Second Order Motion Compensated Cardiac DTI: Direct Comparison *In-Vivo* and Post-Mortem
Christian Torben Stoeck[1, 2], Constantin von Deuster[1, 2], Thea Fleischmann[3], Nikola Cesarovic[3], Martin Genet[1], Maximilian Y. Emmert,[34], Sebastian Kozerke[1, 2]
[1]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [2]Imaging Sciences and Biomedical Engineering, King's College London, London, United Kingdom; [3]Department of Surgical Research, University Hospital Zurich, Zurich, Switzerland; [4]Clinic for Cardiovascular Surgery, University Hospital Zurich, Zurich, Switzerland

16:24 0713. Effect of the Number of Echoes and Reconstruction Model on the Precision and Reproducibility of T_2 Measurments in Myocardial T_2 Mapping
ISMRM MERIT AWARD summa cum laude
Tamer Basha[1], Mehmet Akçakaya[1], Sébastien Roujol[1], Reza Nezafat[1]
[1]Department of Medicine, Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA, United States

16:36 0714. Detection of Diffuse Myocardial Fibrosis *In Vivo* Using Diffusion Tensor Imaging with the Supertoroidal Model
Choukri Mekkaoui[1], Howard H. Chen[2], Yin-Ching Iris Chen[2], William J. Kostis[2], Marcel P. Jackowski[3], Timothy G. Reese[2], David E. Sosnovik[2]
[1]Harvard Medical School - Massachussetts General Hospital, Boston, MA, United States; [2]Harvard Medical School-Massachusetts General Hospital, Boston, MA, United States; [3]University of São Paulo, São Paulo, Brazil

16:48 0715. An Iterative Approach to Respiratory Self-Navigation Enables 100% Scan Efficiency in 3D Free-Breathing Whole-Heart Phase Sensitive Inversion Recovery MRI
Giulia Ginami[1], Simone Coppo[1], Gabriele Bonanno[1], Tobias Rutz[2], Juerg Schwitter[2], Matthias Stuber[1], Davide Piccini,[13]
[1]Center for Biomedical Imaging (CIBM), Department of Radiology, University Hospital (CHUV) and University of Lausanne (UNIL), Lausanne, Switzerland; [2]Division of Cardiology and Cardiac MR Center, University Hospital of Lausanne (CHUV), Lausanne, Switzerland; [3]Advanced Clinical Imaging Technology, Siemens Healthcare IM BM PI, Lausanne, Switzerland

17:00 0716. Joint Myocardial T1 and T2 Mapping Using a Saturation-Recovery Sequence

Mehmet Akçakaya[1], Sebastian Weingärtner, [12], Tamer A. Basha[1], Sebastien Roujol[1], Reza Nezafat[1]
[1]Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, United States; [2]Heidelberg University, Mannheim, Germany

17:12 0717. Characterization of the Accuracy and Precision of Radial Cardiac T_2 Mapping at 3T

ISMRM MERIT AWARD magna cum laude

Helene Feliciano[1], [2], Wajiha Bano[1], [2], Matthias Stuber[1], [2], Ruud B. van Heeswijk[1], [2]
[1]Department of Radiology, University Hospital (CHUV) and University of Lausanne (UNIL), Lausanne, Switzerland; [2]Center for Biomedical Imaging (CIBM), Lausanne, Switzerland

17:24 0718. Whole-Heart T2-Mapping at 7T Quantifies Dystrophic Myocardial Pathology in Mdx/utrn+/- Mice

Ronald John Beyers[1], Christopher Ballmann[2], Joshua Selsby[3], Nouha Salibi, [14], John Quindry[2], Thomas S. Denney[1]
[1]MRI Research Center, Auburn University, Auburn University, AL, United States; [2]Kinesiology, Auburn University, Auburn University, AL, United States; [3]Department of Animal Science, Iowa State University, Ames, IA, United States; [4]MR R&D, Siemens Healthcare, Malvern, PA, United States

17:36 0719. Endogenous Assessment of Chronic Myocardial Infarction with T1ρ-Mapping in Patients

ISMRM MERIT AWARD magna cum laude

Joep van Oorschot[1], Hamza El Aidi[1], Fredy Visser[2], Pieter Doevendans[1], Peter Luijten[1], Tim Leiner[1], Jaco Zwanenburg[1]
[1]University Medical Center Utrecht, Utrecht, Netherlands; [2]Philips Healthcare, Best, Noord-Brabant, Netherlands

17:48 0720. Improved Slice Coverage in DBIR-FSE with Multi-Band Encoding

ISMRM MERIT AWARD summa cum laude

Sagar Mandava[1], Mahesh Bharath Keerthivasan[1], Diego R. Martin[2], Ali Bilgin[1], [3], Maria I. Altbach[2]
[1]Electrical and Computer Engineering, University of Arizona, Tucson, AZ, United States; [2]Medical Imaging, University of Arizona, Tucson, AZ, United States; [3]Biomedical Engineering, University of Arizona, Tucson, AZ, United States

Diffusion MRI - Novel Insights into the Brain

Constitution Hall 105/106/107 16:00-18:00 *Moderators:* Susie Yi Huang, M.D., Ph.D. & Xiaohong Joe Zhou, Ph.D., D.A.B.R.

16:00 0721. Heritability of Structural Connections from HCP Diffusion MRI Data

Stamatios N. Sotiropoulos[1], Xu Chen[2], Stephen M. Smith[1], David C. Van Essen[3], Timothy E. Behrens[1], Thomas E. Nichols[2], Saad Jbabdi[1]
[1]FMRIB Centre, University of Oxford, Oxford, United Kingdom; [2]Department of Statistics, University of Warwick, Coventry, United Kingdom; [3]Department of Anatomy & Neurobiology, Washington University, St Louis, MO, United States

16:12 0722. Motor and Non-Motor Territories of the Human Dentate Nucleus: Mapping the Topographical Connectivity of the Cerebellar Cortex with *In-Vivo* Sub-Millimeter Diffusion Imaging

Christopher J. Steele[1], Alfred Anwander[1], Pierre-Louis Bazin[1], Robert Trampel[1], Andreas Schaefer[1], Robert Turner[1], Narender Ramnani[2], Arno Villringer[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Sachsen, Germany; [2]Royal Holloway University of London, Egham, Surrey, United Kingdom

16:24 0723. Contralateral Cortico-Ponto-Cerebellar Pathways with Prominent Involvement of Associative Areas in Humans *In Vivo*

ISMRM MERIT AWARD magna cum laude

Andrea De Rinaldis[1], [2], Fulvia Palesi, [23], Gloria Castellazzi[1], [2], Fernando Calamante[4], [5], Nils Muhlert[6], [7], J Donald Tournier[4], [5], Giovanni Magenes[1], Egidio D'Angelo, [28], Claudia AM Wheeler-Kingshott[6]
[1]Department of Electrical, Computer and Biomedical Engineering, University of Pavia, Pavia, PV, Italy; [2]Brain Connectivity Center, C. Mondino National Neurological Institute, Pavia, PV, Italy; [3]Department of Physics, University of Pavia, Pavia, PV, Italy; [4]The Florey Institute of Neuroscience and Mental Health, Melbourne Brain Centre, Heidelberg, Victoria, Australia; [5]Department of Medicine, Austin Health and Northern Health, University of Melbourne, Heidelberg, Victoria, Australia; [6]NMR Research Unit, Department of Neuroinflammation, Queen Square MS Centre, UCL Institute of Neurology, London, England, United Kingdom; [7]Department of Psychology, Cardiff University, Cardiff, Wales, United Kingdom; [8]Department of Brain and Behavioral Sciences, University of Pavia, Pavia, PV, Italy

16:36 0724. Age-Related Changes of the Human Brain: Insights from Double-Wave Vector Imaging

Marco Lawrenz[1], [2], Stefanie Brassen[1], [2], Jürgen Finsterbusch[1], [2]

[1]Department of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Neuroimage Nord, University Medical Centers Hamburg-Kiel-Lübeck, Hamburg-Kiel-Lübeck, Germany

16:48 0725. **The Dynamics of Short-Term Plasticity Through Water Maze Training**

Shir Hofstetter[1], Yaniv Assaf[1, 2]
[1]Sagol School of Neuroscience, Tel Aviv University, Tel Aviv, Israel, Israel; [2]Neurobiology, Tel Aviv University, Israel, Israel

17:00 0726. **Differentiating Low- And High-Grade Pediatric Brain Tumors Using a Continuous Random Walk Diffusion Model at High *b*-Values**

Muge Karaman[1], Yi Sui[1, 2], He Wang[3], Richard L. Magin[2], Yuhua H. Li[4], Xiaohong Joe Zhou[1, 5]
[1]Center for MR Research, University of Illinois at Chicago, Chicago, IL, United States; [2]Bioengineering, University of Illinois at Chicago, Chicago, IL, United States; [3]Philips Research China, Shanghai, China; [4]Radiology, Xinhua Hospital, Shanghai, China; [5]Departments of Radiology, Neurosurgery, and Bioengineering, University of Illinois at Chicago, Chicago, IL, United States

17:12 0727. **Diffusion Tensor Imaging in Patients with Glioblastoma Multiforme Using the Supertoroidal Model**

Choukri Mekkaoui[1], Fabricio Pereira[2], William J. Kostis[3], Marcel P. Jackowski[4]
[1]Harvard Medical School - Massachussetts General Hospital, Boston, MA, United States; [2]CHU Nîmes, France; [3]Harvard Medical School-Massachusetts General Hospital, Boston, MA, United States; [4]University of São Paulo, São Paulo, Brazil

17:24 0728. **Stretched-Exponential Model DWI (SEM-DWI) as a Potential Imaging Biomarker in Grading Gliomas and Assessment of Proliferative Activity**

Jingjing Jiang[1], Wenzhen Zhu[1]
[1]Tongji hospital, tongji medical college, huazhong university of science and technology, Wuhan, Hubei, China

17:36 0729. **Multi-Shell Diffusion MRI Provides Better Performance in Discriminating Parkinson's Disease**

Silvia De Santis[1], Nicola Toschi[2, 3], Derek K. Jones[1], Claudio Lucetti[4], Stefano Diciotti[5], Marco Giannelli[6], Carlo Tessa[7]
[1]CUBRIC Cardiff University, Cardiff, United Kingdom; [2]Medical Physics Section, Department of Biomedicine and Prevention, Faculty of Medicine, University of Rome "Tor Vergata", Italy; [3]Department of Radiology, A.A. Martinos Center for Biomedical Imaging, MGH and Harvard Medical School, Boston, MA, United States; [4]Division of Neurology Unit, Versilia Hospital, Lido di Camaiore (Lu), Italy; [5]Department of Electrical, Electronic, and Information Engineering "Guglielmo Marconi", University of Bologna, Cesena, Italy; [6]Unit of Medical Physics, Pisa University Hospital "Azienda Ospedaliero-Universitaria Pisana", Pisa, Italy; [7]Division of Radiology Unit, Versilia Hospital, Lido di Camaiore (Lu), Italy

17:48 0730. ***In-Vivo* Measurements of Axon Density and Axon Diameter in the Corpus Callosum in Multiple Sclerosis**

Torben Schneider[1], Wallace Brownlee[1], Jonathan Clayden[2], Olga Ciccarelli[3], David H. Miller[1], Daniel C. Alexander[4], Claudia A M Wheeler-Kingshott[1]
[1]NMR Research Unit, Department of Neuroinflammation, Queen Square MS Centre, UCL Institute of Neurology, London, United Kingdom; [2]UCL Institute of Child Health, Imaging & Biophysics Unit, London, United Kingdom; [3]Brain Repair & Rehabilitation, UCL Institute of Neurology, London, United Kingdom; [4]Centre of Medical Image Computing, Department of Computer Science, University College London, London, United Kingdom

Monitoring Change & Difference in Psychiatric Disorders

John Bassett Theatre 102 16:00-18:00 *Moderators:* Donna J. M. Lang, Ph.D. & Natalie M. Zahr, Ph.D.

16:00 0731. **Utility of MR-Spectroscopy in Early Drug Discovery: Characterization of Dynamic Temporal Metabolic Changes Following Psychoactive Challenges in the Rodent Brain**

ISMRM MERIT AWARD summa cum laude

Sakthivel Sekar[1], Sankar Seramani[1], Joanne Garnell[1], Kishore Kumar Bhakoo[1]
[1]Translational Imaging Industrial Lab, Singapore Bioimaging Consortium, Biopolis, Singapore

16:12 0732. **^{1}H MRS Monitoring of GABAergic and Glutamatergic Response to 4 Weeks of Antipsychotic Treatment in Medication-Naïve First-Episode Psychosis Patients**

Camilo de la Fuente-Sandoval[1], Francisco Reyes-Madrigal[2], Xiangling Mao[3], Pablo León-Ortiz[4], Oscar Rodríguez-Mayoral[5], Helgi Jung-Cook[6], Ariel Graff-Guerrero[7], Rodolfo Solis-Vivanco[8], Dikoma C. Shungu[3]
[1]Neuropsychiatry & Laboratory of Experiment Psychiatry, Instituto Nacional de Neurología y Neurocirugía (INNN), Mexico City, Distrito Federal, Mexico; [2]Laboratory of Experimental Psychiatry, INNN, Mexico City, Mexico; [3]Radiology, Weill Cornell Medical College, New York, NY, United States; [4]Education, INNN, Mexico City, Mexico; [5]Palliative Care Unit, Instituto Nacional de Cancerología, Mexico City, Mexico; [6]Laboratory of Neuropsychopharmacology, INNN, Mexico City, Mexico; [7]Multimodal

Neuroimaging Schizophrenia Group, Centre for Addiction and Mental Health, Toronto, ON, Canada; [8]Laboratory of Neuropsychology, INNN, Mexico City, Mexico

16:24 0733. MRI and MRS Characterization of Crtc1 Knock-Out Mice Limbic Structures: Investigating Neurobiology of Mood Disorders

ISMRM MERIT AWARD magna cum laude

Antoine Cherix[1], Jean-René Cardinaux[2, 3], Rolf Gruetter[1, 4], Hongxia Lei[5, 6]
[1]Laboratory for functional and metabolic imaging (LIFMET), Ecole Polytechnique Fédérale de Lausanne, Lausanne, Vaud, Switzerland; [2]Center for Psychiatric Neuroscience (CNP), Centre Hospitalier Universitaire Vaudois (CHUV), Lausanne, Vaud, Switzerland; [3]Faculty of Medicine, University of Lausanne, Lausanne, Vaud, Switzerland; [4]Department of Radiology, University of Lausanne, Lausanne, Vaud, Switzerland; [5]Center for Biomedical Imaging (CIBM), Ecole Polytechnique Fédérale de Lausanne, Lausanne, Vaud, Switzerland; [6]Department of Radiology, University of Geneva, Geneva, Switzerland

16:36 0734. Restoration of Abnormal Interconnectivity Between Memory and Emotional Processing Circuits in Remitted Late-Life Depression

Wenjun Li[1], B. Douglas Ward[2], Gang Chen[2], Xiaolin Liu[2], Jennifer Jones[3], Piero Antuono[3], Shi-Jiang Li, [12], Joseph Goveas[1]
[1]Psychiatry and Behavioral Medicine, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Biophysics, Medical College of Wisconsin, WI, United States; [3]Neurology, Medical College of Wisconsin, WI, United States

16:48 0735. Lithium Brain Absorption in the Elderly Versus Younger Patients with Bipolar Disease.

Maria Otaduy[1], Ivan Aprahaiam[2], Rodolfo Ladeira[2], Rodrigo Machado-Vieira[2, 3], Claudia Leite[4], Wagner Gattaz[5], Orestes Forlenza[2]
[1]Laboratory of Magnetic Resonance in Neuroradiology, LIM 44, Institute and Department of Radiology, University of São Paulo, São Paulo, Brazil; [2]Laboratory of Neuroscience, LIM 27, Institute and Department of Psychiatry, University of São Paulo, São Paulo, Brazil; [3]Department of Health and Human Services, National Institute of Mental Health, National Institutes of Health, Bethesda, MD, United States; [4]Laboratory of Magnetic Resonance in Neuroradiology, LIM 44, Institute and Department of Radiology, University of São Paulo, Sao Paulo, Brazil; [5]Laboratory of Neuroscience, LIM 27, Institute and Department of Psychiatry, University of São Paulo, São Paulo, Sao Paulo, Brazil

17:00 0736. The Impact of Ebselen Administration on Brain Myo-Inositol Concentration

Uzay E. Emir[1], Nisha Singh[2, 3], Ann Sharpley[3], Charles Masaki[3], Sridhar Vasudevan[2], Peter Jezzard[1], Phil Cowen[3], Grant Churchill[2]
[1]University of Oxford, FMRIB Centre, Oxford, Oxfordshire, United Kingdom; [2]University of Oxford, Department of Pharmacology, Oxford, Oxfordshire, United Kingdom; [3]University of Oxford, Department of Psychiatry, Oxford, Oxfordshire, United Kingdom

17:12 0737. Ketamine Improves Astroglial Metabolic Activity and Neurotransmission in Social Defeat Model of Depression: A ^{1}H-[^{13}C]-NMR Study

ISMRM MERIT AWARD magna cum laude

Pravin Kumar Mishra[1], Anant Bahadur Patel[1]
[1]Centre for Cellular and Molecular Biology, Hyderabad, India

17:24 0738. Electroconvulsive Therapy (ECT) Induced Neurochemical Modulation as Measured by ^{1}HMRS in Major Depression

Shantanu H. Joshi[1], Stephanie Njau[1], Amber Leaver[1], Antonio Marquina[2], Roger P. Woods[1], Randall Espinoza[3], Katherine L. Narr[1]
[1]Neurology, UCLA, Los Angeles, CA, United States; [2]Mathematics, University of Valencia, Valencia, Spain; [3]Psychiatry and Behavioral Sciences, UCLA, Los Angeles, CA, United States

17:36 0739. ^{1}H MRS Demonstrates Elevations of Prefrontal Cortex GABA in Major Depressive Disorder After Treatment with Repetitive Transcranial Magnetic Stimulation

Marc J. Dubin[1], Xiangling Mao[2], Samprit Banerjee[3], Rebecca Gordon[4], Zachary Goodman[5], Kyle AB Lapidus[6], Guoxin Kang[2], Conor Liston[1], Dikoma C. Shungu[2]
[1]Psychiatry & Brain and Mind Research Institute, Weill Cornell Medical College, New York, NY, United States; [2]Radiology, Weill Cornell Medical College, New York, NY, United States; [3]Healthcare Policy and Research, Weill Cornell Medical College, New York, NY, United States; [4]Psychiatry, Weill Cornell Medical College, New York, NY, United States; [5]Johns Hopkins University, Baltimore, MD, United States; [6]Psychiatry, Icahn School of Medicine at Mount Sinai, New York, NY, United States

17:48 0740. Methylphenidate Modulates the Connectivity of Default Mode Network in ADHD: A Resting-State Dynamic Causal Model Analysis

Hongjian He[1], Fangfang Xu[1], Jianhui Zhong[1]
[1]Center for Brain Imaging Science and Technology, Zhejiang University, Hangzhou, Zhejiang, China

Functional Muscle MRI/MRS

Room 718 A 16:00-18:00 *Moderators:* Michael D. Noseworthy, Ph.D. & Eric E. Sigmund, Ph.D.

16:00 0741. Co-Localized Post-Contractile BOLD and 31P-MRI in Muscles of the Lower Leg

Prodromos Parasoglou[1, 2], Ding Xia[1, 2], Jill M. Slade[3, 4], Ravinder R. Regatte[1, 2]
[1]Bernard and Irene Schwartz Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States; [2]Center for Advanced Imaging Innovation and Research (CAI2R), Department of Radiology, New York University School of Medicine, New York, NY, United States; [3]Department of Radiology, Michigan State University, East Lansing, MI, United States; [4]Biomedical Imaging Research Center, Michigan State University, East Lansing, MI, United States

16:12 0742. Simultaneous Muscle Water T2 and Fat Fraction Mapping Using Transverse Relaxometry with Stimulated Echo Compensation

ISMRM MERIT AWARD summa cum laude

Benjamin Marty[1, 2], Pierre-Yves Baudin[3], Noura Azzabou[1, 2], Ericky C.A. Araujo[1, 2], Pierre G. Carlier[1, 2], Paulo Loureiro de Sousa[4]
[1]NMR laboratory, Institute of Myology, Paris, France; [2]NMR laboratory, CEA/I2BM/MIRCen, Paris, France; [3]Consultants for Research in Imaging and Spectroscopy, Tournai, Belgium; [4]Université de Strasbourg, CNRS, ICube, FMTS, Strasbourg, France

16:24 0743. *In Vivo* OXPHOS Measurement by Magnetic Resonance Imaging in Metabolic Myopathy

ISMRM MERIT AWARD summa cum laude

Catherine DeBrosse[1], Ravi Prakash Reddy Nanga[1], Neil Wilson[1], Kevin D'Aquilla[1], Mark Elliott[1], Hari Hariharan[1], Felicia Yan[2], Leat Perez[2], Sara Nguyen[2], Elizabeth McCormick[3], Marni Falk[3, 4], Shana McCormack[2, 4], Ravinder Reddy[1]
[1]Center for Magnetic Resonance and Optical Imaging, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Division of Endocrinology and Diabetes, The Children's Hospital of Philadelphia, Philadelphia, PA, United States; [3]Division of Human Genetics, The Children's Hospital of Philadelphia, Philadelphia, PA, United States; [4]Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, United States

16:36 0744. Skeletal Muscle Tissue Characterization by ^{23}Na NMRS Under Different Vascular Filling Conditions

ISMRM MERIT AWARD magna cum laude

Benjamin Marty[1, 2], Teresa Gerhalter[1, 2], Ericky C.A. Araujo[1, 2], Eric Giacomini[3], Pierre G. Carlier[1, 2]
[1]NMR laboratory, Institute of Myology, Paris, France; [2]NMR laboratory, CEA/I2BM/MIRCen, Paris, France; [3]UNIRS, CEA/I2BM/NeuroSpin, Gif-Sur-Yvette, France

16:48 0745. Activation of Skeletal Muscle PDH with DCA Increases Steady State ΔGATP Below the Aerobic Threshold

ISMRM MERIT AWARD magna cum laude

Jonathan David Kasper[1], Anne Tonson[1], Mike Klingler[1], Joshua Hubert[1], Ronald Meyer[2], Robert Wiseman[2]
[1]Physiology, Michigan State University, East Lansing, MI, United States; [2]Physiology and Radiology, Michigan State University, East Lansing, MI, United States

17:00 0746. Assessment of Thigh Muscle in Healthy Controls and Dermatomyositis Patients with Diffusion Tensor Imaging, Intravoxel Incoherent Motion, and Dynamical DTI

Eric Edward Sigmund[1, 2], Steven H. Baete[1, 2], Thomas Luo[2], Karan Patel[2], Mary Bruno[1, 2], David Mossa[1, 2], David Stoffel[1, 2], Alisa Femia[3], Sarika Ramachandran[3], Andrew Franks[3], Jenny Bencardino
[1]Center for Advanced Imaging Innovation and Research (CAI2R), Department of Radiology, NYU School of Medicine, NY, United States; [2]Bernard and Irene Schwartz Center for Biomedical Imaging, Department of Radiology, NYU School of Medicine, NY, United States; [3]Department of Dermatology, NYU School of Medicine, NY, United States

17:12 0747. T_2 and $T_{1\rho}$ Detect Early Regenerative Changes in Ischemic Skeletal Muscle

ISMRM MERIT AWARD magna cum laude

Hanne Hakkarainen[1], Galina Wirth[1], Petra Korpisalo-Pirinen[1], Seppo Ylä-Herttuala[1], Timo Liimatainen[1, 2]
[1]University of Eastern Finland, A.I. Virtanen Institute for Molecular Sciences, Kuopio, Finland; [2]Imaging Center, Kuopio University Hospital, Kuopio, Finland

17:24 **0748.** **Reproducibility and Sensitivity of Muscle-Water T2 Determined Independently of Fat Fraction with IDEAL-CPMG**
Christopher D J Sinclair[1], Jasper M. Morrow[1], Robert L. Janiczek[2], Matthew R M Evans[1], Elham Rawah[1], Sachit Shah[1], Michael G. Hanna[1], Mary M. Reilly[1], Tarek A. Yousry[1], John S. Thornton[1]
[1]Institute of Neurology, University College London, London, United Kingdom; [2]Experimental Medicine Imaging, GlaxoSmithKline, Uxbridge, Middlesex, United Kingdom

17:36 **0749.** **Skeletal Muscle Oxygen Extraction Fraction Measurement - At Rest and During Ischemia**
Chengyan Wang[1], Rui Zhang[2], Xiaodong Zhang[3], He Wang[4], Kai Zhao[3], Jue Zhang[1, 2], Xiaoying Wang, [13], Jing Fang[1, 2]
[1]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China; [2]College of Enigneering, Peking University, Beijing, China; [3]Department of Radiology, Peking University First Hospital, Beijing, China; [4]Philips Research China, Shanghai, China

17:48 **0750.** ***In Vivo* Sodium T1 and T2 Measurements in Human Calf at 3T**
Ping Wang[1], Charles Nockowski[2], John C. Gore[1]
[1]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States; [2]Philips Healthcare Technical Support at Vanderbilt, Nashville, TN, United States

Educational Course
Update on MRI Pulse Sequences for Body MRI

Organizers: Lorenzo Mannelli, M.D., Ph.D., Ivan Pedrosa, M.D., Scott B. Reeder, M.D., Ph.D. & Edwin J.R. van Beek, M.D., Ph.D., M.Ed., FRCR

Room 718 B 16:00-18:00 *Moderators:* Ananth J. Madhuranthakam, Ph.D. & Shreyas S. Vasanawala, M.D., Ph.D.

16:00 **Ultrashort TE (Lung, Liver, Iron)**
Scott K. Nagle

16:30 **Dynamic Contrast Enhanced MRI/MRA**
Vikas Gulani

17:00 **New Developments & Applications for Body DWI**
Andrew B. Rosenkrantz

17:30 **Update on Parallel Imaging & Body MRI**
Ananth J. Madhuranthakam

18:00 **Adjournment & Meet the Teachers**

Educational Course
MR Physics & Techniques for Clinicians

Organizers: Marcus T. Alley, Ph.D., Michael Markl, Ph.D., Brian Hargraves, Ph.D., & Nicole Seiberlich, Ph.D.

Room 801 A/B 16:00-18:00 *Moderators:* Marcus T. Alley, Ph.D. & Michael Markl, Ph.D.

16:00 **Ultrafast Imaging**
Mariya Doneva

16:30 **Parallel Imaging**
Katherine L. Wright

17:00 **Diffusion & Perfusion Weighted Imaging**
Maxime Descoteaux

17:30 **Adjournment & Meet the Teachers**

ISMRM Business Meeting

Room 701 A 18:15-19:15 *(no CME credit)*

Sunrise Educational Course
Addressing Clinical Challenges in the Body with MRI

Organizers: Lorenzo Mannelli, M.D., Ph.D., Ivan Pedrosa, M.D., Scott B. Reeder, M.D., Ph.D. & Edwin J.R. van Beek, M.D., Ph.D., M.Ed., FRCR

Room 701 A 07:00-07:50 *Moderators:* Kathryn Fowler, M.D. & Gillian Macnaught, Ph.D.

Imaging in Pregnancy

07:00 **MRI in Pregnancy: Practical Considerations & Indications**
Daniela Prayer, Peter C. Brugger, Gregor Kasprian

07:25 **Fetal Anomalies in the Body**
Diane M. Twickler

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
How Can MRI of Mouse Models Provide Value for Cancer Studies?

Organizers: Chris A. Flask, Ph.D., Kristine Glunde, Ph.D. & Mark D. Pagel, Ph.D.

Constitution Hall 107 07:00-07:50 *Moderators:* Barjor S. Gimi, Ph.D. & Arvind P. Pathak, Ph.D.

07:25 **How Can MRI of Mouse Models Provide Value for Studies of Neurological Conditions?**
Jeff F. Dunn

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
Clinical Challenges in Cardiovascular MRI

Organizers: Daniel B. Ennis, Ph.D. & Harald Kramer, M.D.

Room 714 A/B 07:00-07:50 *Moderators:* Thomas K. F. Foo, Ph.D. & Jeanette Schulz-Menger, M.D.

07:00 **Pediatric Cardiovascular-MRI: Make It Fast, Safe & Accurate**
Taylor Chung

07:16 **CMR in Very Sick Patients: Realtime, Fast Imaging, Tips, Tricks & Challenges**
Matthias G. Friedrich

07:32 **Complex Flow in Complex Patients: Congenital Heart Disease**
Christopher J. P. François

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
UTE: Applications & Advances

Organizers: Neal K. Bangerter, Ph.D.

Room 716 A/B 07:00-07:50 *Moderators:* Neal K. Bangerter, Ph.D. & Matthew D. Robson, Ph.D.

07:00 **Swift**
Djaudat S. Idiyatullin

07:25 **ZTE Imaging**
Markus Weiger

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
Contrast by Body Part: How & Why?

Organizers: Brian A. Hargreaves, Ph.D. & Manojkumar Saranathan, Ph.D.

Room 718 A 07:00-07:50 *Moderators:* Brian A. Hargreaves, Ph.D. & Manojkumar Saranathan, Ph.D.

07:00 **Neurologic Sequences: How & Why?**
Karl Egger

07:25 **Angiography Sequences: How & Why?**
Kevin M. Johnson

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
Brain Networks

Organizers: James J. Pekar, Ph.D., & Jonathan R. Polimeni, Ph.D.

Room 718 B 07:00-07:50 *Moderators:* Catherine E. Chang, Ph.D. & James J. Pekar, Ph.D.

07:00 **Brain Network Applications in Basic Neuroscience**
Jean Daunizeau

07:25 **Brain Network Applications in Clinical Neuroscience**
Paul M. Matthews

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
Bone Structure & Bone Interface

Organizers: Eric Y. Chang, M.D., Garry E. Gold, M.D., Richard Kijowski, M.D., William B. Morrison, M.D., Ravinder R. Regatte, Ph.D. & Siegfried Trattnig, M.D.

Room 801 A/B 07:00-07:50 *Moderators:* Jenny T. Bencardino, M.D. & Avneesh Chhabra, M.D.

Bone Structure & Bone Interface

07:00 **Cortical & Trabecular Bone**
Felix W. Wehrli

07:25 **Bone-Tissue Interface**
Jiang Du

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
Neuroimaging: Vascular

Organizers: Jonathan H. Gillard, M.D., FRCR, MBA & Howard A Rowley, M.D.

Room 701 B 07:00-07:50 *Moderators:* Dennis L. Parker, Ph.D. & David Saloner, Ph.D.

07:00 **CNS Aneurysms & Vascular Malformations: What the Neurosurgeon Needs to Know from Imaging.**
Timothy J. Carroll

07:25 **MR in the Evaluation of Aneurysms & Vascular Malformations**
Myriam Edjlali-Goujon

07:50 **Adjournment & Meet the Teachers**

Sunrise Educational Course
Nuts & Bolts of Advanced Imaging

Organizers: Alexey Samsonov, Ph.D., N. Jon Shah, Ph.D. & Jeffrey Tsao, Ph.D., M.B.A.

John Bassett Theatre 102 07:00-07:50 *Moderators:* Philip J. Beatty, Ph.D. & Christopher M. Collins, Ph.D.

Review/Demo of Available Excitation Software

07:00 **The Image Reconstruction Pipeline**
Michael S. Hansen

07:25 **Parallel Imaging & Beyond**
Philip J. Beatty

07:50 **Adjournment & Meet the Teachers**

Plenary Session
Mansfield Lecture

Plenary Hall FG 08:00-09:00

08:00 **Young Investigator Awards Presentation**
James G. Pipe, 2015-16 ISMRM President

08:15 **Mansfield Lecture: MRI in the Era of Personalized Medicine**
Elizabeth A. Morris, M.D., FACR

Plenary Session
Fetal & Placental Imaging: Technical & Clinical Aspects

Organizers: Patricia Ellen Grant, M.D. & Jeffrey J. Neil, M.D., Ph.D.

Plenary Hall FG 08:15-10:00 *Moderators:* Patricia Ellen Grant, M.D. & Jeffrey J. Neil, M.D., Ph.D.

09:00 **0751.** **Technical Aspects/Challenges**
Joseph V. Hajnal

09:20 **0752.** **Clinical Aspects of Fetal Brain Imaging**
Orit A. Glenn

09:40 **0753.** **Clinical Aspects of Imaging the Placenta**
Daniela Prayer

10:00 **Adjournment**

Traditional Poster Session: Cardiovascular

Exhibition Hall 10:30-12:30 *(no CME credit)*

Electronic Poster Session: Cardiovascular

Exhibition Hall 10:30-12:30 *(no CME credit)*

Study Group Session
Molecular & Cellular Imaging

Reception Hall 104 BCD 10:30-12:30 *(no CME credit)*

Power Pitch Session: High Field Applications

Power Pitch Theatre, Exhibition Hall 10:30-11:30 *(no CME credit)*

Moderators: Gregory J. Metzger, Ph.D. & T.B.A.

0754. Whole Brain Pulsed Arterial Spin Labelling at Ultra High Field with a $B1^+$-Optimised Adiabatic Labelling Pulse
Kieran O'Brien†[1, 2], Fabian Zimmer†[2], Steffen Bollmann[2], Josef Pfeuffer[3], Keith Heberlein[4], Markus Barth[2]
[1]Healthcare Sector, Siemens Ltd, Brisbane, Australia; [2]The Centre for Advanced Imaging, The University of Queensland, Brisbane, Australia; [3]Siemens Healthcare, Erlangen, Germany; [4]Siemens Healthcare, Boston, MA, United States

0755. 7T Imaging of Patients with Focal Epilepsy Who Appear Non-Lesional in Diagnostic 1.5T and 3T MRI Scans: First Results
Rebecca Emily Feldman[1], Hadrien Dyvorne[1], Bradley Neil Delman[1], Madeline Cara Fields[2], Lara Vanessa Marcuse[2], Priti Balchandani[1]
[1]Radiology, Icahn School of Medicine at Mount Sinai, New York, United States; [2]Department of Neurology, Mount Sinai Hospital, New York, United States

0756. *In Vivo* ^{37}Cl MRI of Human Calf Muscle at 7T
ISMRM MERIT AWARD magna cum laude
Judith Schork[1], Anna Kollefrath[1], Manuela B. Rösler[1], Reiner Umathum[1], Armin M. Nagel[1]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

0757. T1rho and T2 Relaxation Times in Patients with Knee Osteoarthritis at 3 Tesla and 7 Tesla
Cory Wyatt[1], Aditi Guha[1], Anand Venkatachari[1], Xiaojuan Li[1], Roland Krug[1], Douglas A.C. Kelley[2], Thomas M. Link[1], Sharmila Majumdar[1]
[1]Radiology, University of California San Francisco, San Francisco, CA, United States; [2]GE Healthcare Technologies, San Francisco, CA, United States

0758. Saturation Recovery Single-Shot Acquisition (SASHA) for T_1 Mapping in the Human Heart at 7T
Christopher T. Rodgers[1], Yuehui Tao[1], Stefan Piechnik[1], Alexander Liu[1], Jane Francis[1], Stefan Neubauer[1], Matthew D. Robson[1]
[1]University of Oxford, Oxford, Oxon, United Kingdom

0759. Theoretical and Experimental Comparisons of Single Breath-Hold Renal Perfusion Imaging Between 3T and 7T
Xiufeng Li[1], Edward J. Auerbach[1], Pierre-Francois Van de Moortele[1], Kamil Ugurbil[1], Gregory J. Metzger[1]
[1]Radiology-CMRR, University of Minnesota, Minneapolis, MN, United States

0760. Ultra-Short T_E STEAM Improves Hepatic Lipid Quantification and Profiling at 7T
Martin Gajdošík[1], Grzegorz Chadzynski[2, 3], Vladimír Mlynárik[1], Marek Chmelík[1], Wolfgang Bogner[1], Ladislav Valkovic[1, 4], Ivica Just Kukurová[1], Siegfried Trattnig[1], Martin Krššák[1, 5]
[1]MRCE, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria; [2]Department of Biomedical Magnetic Resonance, University of Tübingen, Tübingen, Germany; [3]Department of High-Field Magnetic Resonance, Max Planck Institute for Biological Cybernetics, Tübingen, Germany; [4]Institute of Measurement Science, Slovak Academy of Sciences, Bratislava, Slovakia; [5]Department of Internal Medicine III, Medical University of Vienna, Vienna, Austria

0761. Ultra-High Field *In Vivo* Localized Two Dimensional Correlated MR Spectroscopy to Probe Membrane Degradation During Progression of Alzheimer's Disease
A Alia[1, 2], Niels Braakman[1]
[1]Leiden Institute of Chemistry, Leiden University, Leiden, South Holland, Netherlands; [2]Institute of Medical Physics and Biophysics, Leipzig University, Leipzig, Germany

0762. *In Vivo* MR Microscopy of the Nervus Opticus at 3.0 T and 7.0 T: Anatomical and Diffusion Weighted Imaging in Healthy Subjects and Patients with Optic Nerve Glioma
Katharina Paul[1], Andreas Graessl[1], Jan Rieger[1], Darius Lysiak[1], Till Huelnhagen[1], Lukas Winter[1], Antje Els[1], Beate Endemann[1], Tobias Lindner[2], Stefan Hadlich[3], Paul-Christian Krueger[3], Oliver Stachs[2, 4], Soenke Langner[3], Thoralf Niendorf[1, 5]
[1]Max-Delbrueck Centre for Molecular Medicine, Berlin Ultrahigh Field Facility (B.U.F.F.), Berlin, Germany; [2]University Medicine Rostock, Pre-clinical Imaging Research Group, Rostock, Germany; [3]University of Greifswald, Institute for Diagnotic Radiology and Neuroradiology, Greifswald, Germany; [4]University Medicine Rostock, Department of Ophthalmology, Rostock, Germany;

[5]Experimental and Clinical Research Center, a joint cooperation between the Charite Medical Faculty and the Max-Delbrueck Center, Berlin, Germany

0763. *In-Vivo* Proton MR Spectroscopic Imaging of the Human Brain Gliomas at 9.4 Tesla: Evaluation of Metabolite Coordinates

Grzegorz L. Chadzynski[1, 2], Gisela Hagberg[1, 2], Jonas Bause[2], G. Shajan[2], Sotirios Bisdas[3], Rolf Pohmann[2], Klaus Scheffler[1, 2]
[1]Dept. Biomedical Magnetic Resonance, University of Tuebingen, Tuebingen, Germany; [2]Dept. High-field Magnetic Resonance, Max Planck Institute for Biological Cybernetics, Tuebingen, Germany; [3]Dept. Diagnostic and Interventional Neuroradiology, University of Tuebingen, Tuebingen, Germany

0764. An Investigation of Lateral Geniculate Nucleus (LGN) Volume in Patients with Glaucoma Using 7T MRI.

Hye Jin Jeong[1], Jong Yeon Lee[2], Jong Hwan Lee[2], Yu Jeong Kim[2], Eung Yeop Kim[3], Yong Yeon Kim[4], Zang-Hee Cho[1], Young-Bo Kim[1]
[1]Neuroscience Research Institute, Gachon University, Incheon, Korea; [2]Department of Ophthalmology, Gachon University, Gil Hospital, Incheon, Korea; [3]Department of Radiology, Gachon University, Incheon, Korea; [4]Department of Ophthalmology, Korea University College of Medicine, Seoul, Korea

0765. Giant Intracranial Aneurysms at 7 Tesla MRI: A New Diagnostic Approach to Understand This Rare Intracranial Vascular Pathology

Bixia Chen[1, 2], Toshinori Matsushige[2, 3], Stefan Maderwald[1], Sören Johst[1], Harald H. Quick[1, 4], Mark Edward Ladd[1, 5], Ulrich Sure[2], Karsten Henning Wrede[1, 2]
[1]Erwin L. Hahn Institute for Magnetic Resonance Imaging, University Duisburg-Essen, Essen, NRW, Germany; [2]Department of Neurosurgery, University Hospital Essen, University Duisburg-Essen, Essen, NRW, Germany; [3]Department of Neurosurgery, Hiroshima University Hospital, Hiroshima University, Hiroshima, Hiroshima Prefecture, Japan; [4]High Field and Hybrid MR Imaging, University Hospital Essen, University Duisburg-Essen, Essen, NRW, Germany; [5]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, BW, Germany

0766. High Resolution Spectroscopic Imaging with Ultra Short TE in Patients with Multiple Sclerosis and Brain Tumors at 7T

Gilbert Hangel[1], Bernhard Strasser[2], Michal Považan[2], Stephan Gruber[2], Marek Chmelik[2], Georg Widhalm[3], Engelbert Knosp[3], Assunta Dal-Bianco[4], Fritz Leutmezer[4], Siegfried Trattnig[2], Wolfgang Bogner[2]
[1]MCRE, Department of Biomedical Imaging and Image-guided Therapy , Medical University of Vienna, Wien, Vienna, Austria; [2]MCRE, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Wien, Vienna, Austria; [3]Department of Neurosurgery, Medical University of Vienna, Wien, Vienna, Austria; [4]Department of Neurology, Medical University of Vienna, Wien, Vienna, Austria

0767. Examples of Clinical Imaging at 7T: Successes and Challenges

Stephen E. Jones[1], Se-Hong Oh[1], Erik Beall[1], Michael Phillips[1], Ken Sakaie[1], Irene Wang[2], Mark Lowe[1]
[1]Imaging Institute, Cleveland Clinic, Cleveland, OH, United States; [2]Neurologic Institute, Cleveland Clinic, Cleveland, OH, United States

0768. Towards Clinical Cardiac MR at 7.0 T: Early Experience with Black Blood RARE Imaging in Patients with Hypertrophic Cardiomyopathy

Till Huelnhagen[1], Katharina Paul[1], Andreas Pohlmann[1], Andreas Graessl[1], Jan Rieger[2], Darius Lysiak[2], Christof Thalhammer[1], Marcel Prothmann[3], Jeanette Schulz-Menger[3, 4], Thoralf Niendorf[1, 4]
[1]Berlin Ultrahigh Field Facility (B.U.F.F.), Max-Delbrueck Center for Molecular Medicine (MDC), Berlin, Germany; [2]MRI.TOOLS GmbH, Berlin, Germany; [3]Dept. of Cardiology and Nephrology, HELIOS Klinikum Berlin-Buch, Berlin, Germany; [4]Experimental and Clinical Research Center, a joint cooperation between the Charite Medical Faculty and the Max-Delbrueck Center, Berlin, Germany

Fetal & Neonatal Imaging - Clinical

Room 701 A 10:30-12:30 *Moderators:* Jessica Dubois, Ph.D. & T.B.A.

10:30 0769. The Evaluation of the White Matter Development and Small-World Networks in the Fetal Brain MRI Using SBTFE Sequence

Bing Zhang #[1], Chenchen Yan #[1], Ming Li[1], Huiting Wang[1], Zuzana Nedelska[2], Tong Ru[3], Zhiqun Wang[3], Jie Li[3], Jian Yang[4], Yali Hu[3], Bin Zhu*[1]*

[1]Department of Radiology, The Affiliated Drum Tower Hospital of Nanjing University Medical School, Nanjing, China; [2]Memory Disorders Clinic,Department of Neurology, Charles University, 2nd Faculty of Medicine and Motol University Hospital, Czech Republic; [3]Department of Gynaecology and Obstetrics, The Affiliated Drum Tower Hospital of Nanjing University Medical School, Nanjing, China; [4]Department of Radiology, The First Affiliated Hospital of Medical College, Xi'an Jiaotong University, Xi'an, China

10:42 0770. Disrupted Developmental Organization of Brain Connectivity in Fetuses with Corpus Callosum Agenesis: An in Utero Study

András Jakab[1], Gregor Kasprian, Ernst Schwartz, Veronika Schöpf[2], Daniela Prayer, Georg Langs[1, 3]
[1]CIR Lab, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria; [2]Institute for Psychology, University of Graz, Graz, Austria; [3]Computer Science and Artificial Intelligence Lab, Massachusetts Institute of Technology, Cambridge, MA, United States

10:54 0771. Analysis of *In Vivo* Microstructural Features During the First Weeks of Life Using Structural Brain Networks

ISMRM MERIT AWARD summa cum laude

Dafnis Batalle[1], Emer J. Hughes[1], Hui Zhang[2], Jaques-Donald Tournier[1], Nora Tusor[1], Paul Aljabar[1], Daniel C. Alexander[2], Joseph V. Hajnal[1], A David Edwards[1], Serena J. Counsell[1]
[1]Centre for the Developing Brain, King's College London, London, United Kingdom; [2]Computer Science & Centre for Medical Image Computing, University College London, London, United Kingdom

11:06 0772. Assessing Brain Damage After Perinatal Hypoxic-Ischaemia Using an Automated Protocol for Combined Regional Analysis of the Cerebral Blood Flow and MR Spectroscopy

ISMRM MERIT AWARD magna cum laude

Magdalena Sokolska[1], Cristina Uria-Avellanal[2], M. Jorge Cardoso[3], Maïa Proisy[2], Alan Bainbridge[4], Sebastien Ourselin[3], David Thomas[1], Nicola Robertson[2], Xavier Golay[1]
[1]UCL Institute of Neurology, London, United Kingdom; [2]UCL Institute for Women's Health, United Kingdom; [3]Centre for Medical Image Computing, UCL, United Kingdom; [4]UCH Medical Physics and Bioengineering, United Kingdom

11:18 0773. Basal Ganglia and Thalamic Volumes with Motor and Cognitive Outcomes in Very Preterm 7 Year Old Children.

Wai Yen Loh[1, 2], Deanne K. Thompson[1, 2], Jeanie LY Cheong[1, 3], Alicia J. Spittle[1, 3], Jian Chen[1, 4], Katherine J. Lee[1, 3], Terrie E. Inder[5], Alan Connelly[2, 3], Lex W. Doyle[1, 3], Peter J. Anderson[1, 3]
[1]Murdoch Childrens Research Institute, Melbourne, Victoria, Australia; [2]Florey Institute of Neuroscience and Mental Health, Melbourne, Victoria, Australia; [3]University of Melbourne, Melbourne, Victoria, Australia; [4]Monash University, Melbourne, Victoria, Australia; [5]Brigham and Women's Hospital, Boston, MA, United States

11:30 0774. MM-Suppressed GABA Concentration Correlates with Symptom Severity and Abnormal Tactile Processing in Children with ASD

ISMRM MERIT AWARD magna cum laude

Nicolaas AJ Puts[1, 2], Ashley D. Harris[1, 2], Mark Tommerdahl[3], Peter B. Barker[1, 2], Stewart H. Mostofsky[4, 5], Richard A. Edden[1, 2]
[1]Russell H. Morgan Dept. of Radiology and Radiological Science, Johns Hopkins University, Baltimore, MD, United States; [2]F.M. Kirby Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States; [3]Dept. of Biomedical Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States; [4]Dept. of Neurology, Johns Hopkins University, Baltimore, MD, United States; [5]Center for Neurodevelopmental and Imaging Research, Kennedy Krieger Institute, Baltimore, MD, United States

11:42 0775. Evidence for a Categorical-Dimensional Hybrid Model of Autism Spectrum Disorder Revealed in Functional Network Connectivity

Amanda Elton[1], Wei Gao[1, 2]
[1]Biomedical Research Imaging Center, UNC Chapel Hill, Chapel Hill, NC, United States; [2]Radiology, UNC Chapel Hill, Chapel Hill, NC, United States

11:54 0776. Psychostimulant Medication Duration Correlates with Increased Brain Iron Levels in Attention-Deficit/Hyperactivity Disorder

ISMRM MERIT AWARD magna cum laude

Vitria Adisetiyo[1], Jens H. Jensen[1], Ali Tabesh[1], Rachael L. Deardorf[1], Kevin M. Gray[2], Joseph A. Helpern[1, 3]
[1]Radiology and Radiological Science, Center for Biomedical Imaging, Medical University of South Carolina, Charleston, SC, United States; [2]Psychiatry and Behavioral Sciences, Medical University of South Carolina, Charleston, SC, United States; [3]Neuroscience, Medical University of South Carolina, Charleston, SC, United States

12:06 0777. Brain Connectomics and Social Cognition from Infancy to Early Adolescence: Effects of IUGR

Emma Muñoz-Moreno[1], Elda Fischi-Gomez[2, 3], Dafnis Batalle[1], Lana Vasung[3], Morgane Reveillon[3], Cristina Borradori-Tolsa[3], Elisenda Eixarch[1, 4], Jean-Philippe Thiran[2, 5], Eduard Gratacos[1, 4], Petra Susan Hüppi[3]

[1]Fetal and Perinatal Medicine Research Group, IDIBAPS, Barcelona, Spain; [2]Ecole Polytecnique Fédérale de Laussane, Signal Processing Laboratory 5 (LTS5), Laussane, Switzerland; [3]Division of Development and Growth, Department of Pediatrics, University of Geneva, Geneva, Switzerland; [4]Maternal-Fetal Medicine Department, ICGON, Hospital Clinic, Universitat de Barcelona, Barcelona, Spain; [5]Department of Radiology, University Hospital Center (CHUV) and University of Lausanne (UNIL), Laussane, Switzerland

12:18 0778. Comparison of CBF Measured with Velocity Selective ASL and Pulsed ASL in Pediatric Patients with Prolonged Arterial Transit Times Due to Moymoya Disease

Divya S. Bolar[1, 2], Borjan Gagoski[3], Richard L. Robertson[4], Elfar Adalsteinsson[5], Bruce R. Rosen[1, 2], P Ellen Grant[3]

[1]Department of Radiology, Massachusetts General Hospital, Boston, MA, United States; [2]MGH/HST Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [3]Fetal Neonatal Neuroimaging and Developmental Science Center, Boston Children's Hospital, MA, United States; [4]Department of Radiology, Boston Children's Hospital, MA, United States; [5]Department of Electrical Engineering & Computer Science, Massachusetts Institute of Technology, MA, United States

CESToronto

Room 701 B 10:30-12:30 *Moderators:* Seth A. Smith, Ph.D. & T.B.A.

10:30 0779. Highly-Accelerated Chemical Exchange Saturation Transfer (CEST) Measurements with Linear Algebraic Modeling (SLAM)

ISMRM MERIT AWARD summa cum laude

Yi Zhang[1], Hye-Young Heo[1], Dong-Hoon Lee[1], Shanshan Jiang[1], Paul Bottomley[1], Jinyuan Zhou[1, 2]

[1]Division of MR Research, Department of Radiolgoy, Johns Hopkins University, Baltimore, MD, United States; [2]F. M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States

10:42 0780. CEST Analysis Via MR Fingerprinting

ISMRM MERIT AWARD magna cum laude

Nicolas Geades[1], Penny Gowland[1], Olivier Mougin[1]

[1]Sir Peter Mansfield Imaging Centre, University of Nottingham, Nottingham, United Kingdom

10:54 0781. Monitoring Therapeutic Response on Non-Small Cell Lung Cancer in Chemotherapy by Amide Proton Transfer (APT) Imaging in Mice

Keisuke Ishimatsu[1], Shanrong Zhang[1], Koji Sagiyama[1], Osamu Togao[1], Brenda Timmons[2], John Minna[2], Masaya Takahashi[1]

[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Hamon Center for Therapeutic Oncology, Internal Medicine, University of Texas Southwestern Medical Center, Dallas, TX, United States

11:06 0782. Dynamic Imaging of D-Glucose at 7T: First Experiments in Human Brain

ISMRM MERIT AWARD summa cum laude

Xiang Xu[1, 2], Craig K. Jones[1, 2], Nirbhay N. Yadav[1, 2], Linda Knutsson[3], Jun Hua[1, 2], Rita Kalyani[4], Erica Hall[4], John Laterra[5], Jaishri Blakeley[5], Roy Strowd[5], Prakash Ambady[5], Martin Pomper[1], Peter Barker[1, 2], Guanshu Liu[1, 2], Kannie W.Y. Chan[1, 2], Michael T. McMahon[1, 2], Robert D. Stevens[5, 6], Peter van Zijl[1, 2]

[1]Department of Radiology, Johns Hopkins University, Baltimore, MD, United States; [2]F. M. Kirby Research Center, Kennedy Krieger Institute, Baltimore, MD, United States; [3]Department of Medical Radiation Physics, Lund University, Lund, Sweden; [4]Division of Endocrinology, Diabetes, & Metabolism, Johns Hopkins University, Baltimore, MD, United States; [5]Department of Neurology, Johns Hopkins University, Baltimore, MD, United States; [6]Department of Anesthesiology and Critical Care Medicine, Johns Hopkins University, Baltimore, MD, United States

11:18 0783. Chemical Exchange Sensitive Spin-Lock MRI of Deoxyglucose Transport and Metabolism in Brain

Tao Jin[1], Hunter Mehrens[1], Seong-Gi Kim[1, 2]

[1]Department of Radiology, University of Pittsburgh, Pittsburgh, PA - Pennsylvania, United States; [2]Center for Neuroscience Imaging Research, Institute for Basic Science, SKKU, Suwon, Korea

11:30 0784. Chemical Exchange Saturation Transfer (CEST) Imaging with Double Angles and Varying Duty Cycles

Ke Li[1, 2], Hua Li[1, 3], Zhongliang Zu[1, 2], Junzhong Xu[1, 2], Jingping Xie[1, 2], Bruce M. Damon[1, 2], Mark D. Does[1, 2], John C. Gore[1, 2], Daniel F. Gochberg[1, 2]

[1]Institute of Imaging Sciences, Vanderbilt University, Nashville, TN, United States; [2]Department of Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [3]Department of Physics and Astronomy, Vanderbilt University, Nashville, TN, United States

11:42 **0785.** **Balanced Steady State Free Precession (BSSFP) from an Effective Field Perspective: Application to the Detection of Exchange (BSSFPX)**

ISMRM MERIT AWARD magna cum laude

Shu Zhang[1], Zheng Liu[2], Robert E. Lenkinski[1, 3], Elena Vinogradov[1, 3]
[1]Radiology, UT Southwestern Medical Center, Dallas, TX, United States; [2]Advanced Imaging Research Center, Oregon Health & Science University, Portland, OR, United States; [3]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States

11:54 **0786.** **Optimizing Multislice AcidoCEST MRI for Assessments of Extracellular PH in Tumor and Kidney Tissues.**

Edward A. Randtke[1], Kyle Jones[1], Christy Howison[1], Julio Cárdenas-Rodríguez[1], Mark D. Pagel[1]
[1]Biological and Medical Imaging, University of Arizona, Tucson, AZ, United States

12:06 **0787.** **Cardiac CEST MRI of ParaCEST Labeled Cells in Cell Therapy**

Ashley Pumphrey[1], Scott Thalman[2], Zhengshi Yang[1], Shaojing Ye[1], Moriel Vandsburger[1, 3]
[1]Saha Cardiovascular Research Center, University of Kentucky, Lexington, KY, United States; [2]Department of Biomedical Engineering, University of Kentucky, Lexington, KY, United States; [3]Department of Physiology, University of Kentucky, Lexington, KY, United States

12:18 **0788.** **Salicilyc-Acid CEST PAMAM Polymers for CEST Imaging of Delivery to Brain Tumors**

Nikita Oskolkov[1, 2], Kannie W.Y. Chan, [12], Xiaolei Song, [12], Tao Yu[3], Peter C.M. van Zijl, [12], Justin Hanes[3], Rangaramanujam M. Kannan[3], Michael T. McMahon[1, 2]
[1]The Russell H. Morgan Department of Radiology and Radiological Science, Johns Hopkins School of Medicine, Baltimore, MD, United States; [2]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States; [3]Center for Nanomedicine, Johns Hopkins School of Medicine, Baltimore, MD, United States

Perfusion & Permeability: Validation Studies

Room 714 A/B 10:30-12:30 *Moderators:* Weiying Dai, Ph.D. & Ronnie Wirestam, Ph.D.

10:30 **0789.** **Dynamic Contrast-Enhanced MR Imaging in Rectal Cancer: Study of Inter-Software Accuracy and Reproducibility Using Simulated and Clinical Data**

Luc Beuzit[1], Pierre-Antoine Eliat[2], Elise Bannier[1, 3], Jean-Christophe Ferré[1, 3], Yves Gandon[1], Vanessa Brun[1], Hervé Saint-Jalmes[4, 5]
[1]Radiology, CHU Rennes, Rennes, France; [2]PRISM-Biosit CNRS UMS 3480, INSERM UMS 018, University of Rennes I, Rennes, France; [3]Neurinfo MR imaging platform, University of Rennes I, Rennes, France; [4]Radiology, Eugène Marquis Cancer Institute, Rennes, France; [5]LTSI, UMR 1099, INSERM, University of Rennes I, Rennes, France

10:42 **0790.** **Validation of Quantitative Blood Flow with 3D Gradient Echo (GRE) Dynamic Contrast-Enhanced Magnetic Resonance Imaging (DCE-MRI) Using Blood Pool Contrast Medium in Skeletal Muscle of Swine**

Stefan Hindel[1], Anika Sauerbrey[1], Marc Maaß[2], Lutz Lüdemann[1]
[1]Strahlenklinik und Poliklinik, Universitätsklinikum Essen, Essen, North Rhine-Westphalia, Germany; [2]Evangelisches Krankenhaus Wesel GmbH, North Rhine-Westphalia, Germany

10:54 **0791.** **Effects of Temporal Resolution on DCE-MRI Parameter Estimation: *In-Vivo* Repeatability Analysis of Lung Tumors Using Retroactively Adjustable KWIC Reconstruction**

Xia Zhao[1, 2], Yiqun Xue[1, 2], Mark Rosen[2], Hyunseon Kang[3], Ramesh Rengan[4], Heekwon Song[1, 2]
[1]Laboratory for Structural NMR Imaging, University of Pennsylvania, Philadelphia, PA, United States; [2]Department of Radiology, Hospital of University of Pennsylvania, Philadelphia, PA, United States; [3]MD Anderson Cancer Center, University of Texas, Houston, TX, United States; [4]Department of Radiation Oncology, University of Washington School of Medicine, Seattle, WA, United States

11:06 **0792.** **Measuring Blood-Brain-Barrier Permeability Using Diffusion-Weighted Arterial Spin Labeling (DW-ASL): Corroboration with Ktrans and Evan's Blue Measurements**

Yash Vardhan Tiwari[1, 2], Qiang Shen[3], Zhao Jiang[3], Wei Li[3], Justin Long, [23], Chenling Fang, [23], Timothy Duong[3]
[1]Research Imaging Institute, UT Health Science Center , San Antonio, TX, United States; [2]Biomedical Engineering, UT, San Antonio, TX, United States; [3]Research Imaging Institute, UT Health Science Center, San Antonio, TX, United States

11:18 0793. Intra and Inter-Subject Reproducibility of Arterial Transit Time

Tracy Ssali[1, 2], Udunna C. Anazodo[1, 2], Mahsa Shokouhi[1], Bradley J. MacIntosh[3], Keith St Lawrence[1, 2]
[1]Laswon Health Research Institute, London, Ontario, Canada; [2]University of Western Ontario, London, Ontario, Canada; [3]Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada

11:30 0794. Comparison of ASL Inversion Efficiency and CBF Quantification for 3 Perfusion Techniques at 3 Magnetic Fields

Clement Stephan Debacker[1, 2], Jan M. Warnking[1, 3], Sacha Koehler[2], Jerome Voiron[2], Emmanuel L. Barbier[1, 3]
[1]GIN, Univ. Grenoble Alpes, Grenoble, France; [2]Bruker BioSpin MRI, Ettlingen, Germany; [3]U836, INSERM, Grenoble, France

11:42 0795. Assessing Relationship Between Intracranial Vascular Compliance and Aortic Pulse Wave Velocity Using MRI

ISMRM MERIT AWARD magna cum laude

Lirong Yan[1], Collin Liu[2], Robert Smith[1], Mayank Jog[1], Kate Krasileva[1], Cheng Li[3], Michael Langham[3], Danny JJ Wang[1]
[1]Neurology, University of California Los Angeles, Los Angeles, CA, United States; [2]University of Southern California, CA, United States; [3]University of Pennsylvania, Philadelphia, PA, United States

11:54 0796. Validation of Dual-Injection Dynamic Susceptibility Contrast Perfusion Weighted Imaging Against Pseudo-Continuous Arterial Spin Labeling: A Pilot Study

ISMRM MERIT AWARD magna cum laude

Natalie M. Wiseman[1], Meng Li[2], Mahmoud Zeydabadinezhad[3], Jessy Mouannes-Srour[3], Yongquan Ye[2], E. Mark Haacke, [23], Zhifeng Kou, [23]
[1]Department of Psychiatry and Behavioral Neurosciences, Wayne State University School of Medicine, Detroit, MI, United States; [2]Department of Radiology, Wayne State University School of Medicine, Detroit, MI, United States; [3]Department of Biomedical Engineering, Wayne State University, Detroit, MI, United States

12:06 0797. An Extensible Methodology for Creating Realistic Anthropomorphic Digital Phantoms for Quantitative Imaging Algorithm Comparisons and Validation

Ryan J. Bosca[1], Edward F. Jackson[1]
[1]Medical Physics, University of Wisconsin - Madison, Madison, WI, United States

12:18 0798. A Simple and Cheap Perfusion Phantom

Ina Nora Kompan[1, 2], Klaus Eickel[1, 3], Federico von Samson-Himmelstjerna[1, 4], Benjamin Richard Knowles[5], Matthias Guenther[1, 2]
[1]Fraunhofer MEVIS, Bremen, Germany; [2]mediri GmbH, Heidelberg, Baden-Württemberg, Germany; [3]Universitätsklinikum Essen, Essen, Nordrhein-Westfalen , Germany; [4]Charité, Berlin, Germany; [5]Universitätsklinikum Freiburg, Freiburg, Baden-Württemberg, Germany

Diabetes, Metabolism & GI

Room 716 A/B 10:30-12:30 *Moderators:* Yulia Lakhman, M.D. & T.B.A.

10:30 0799. Localized Detection of Fasting-Induced Changes in Lactate Metabolism by Hyperpolarized ^{13}C MRSI

Cornelius von Morze[1], Gene-Yuan Chang[2], Peder E. Larson[1], Hong Shang[1], Robert A. Bok[1], Jason C. Crane[1], Marram P. Olson[1], C.T. Tan[3], Sarah J. Nelson[1], John Kurhanewicz[1], David Pearce[2], Daniel B. Vigneron[1]
[1]Department of Radiology & Biomedical Imaging, UCSF, San Francisco, CA, United States; [2]Department of Medicine, UCSF, San Francisco, CA, United States; [3]ISOTEC, Sigma-Aldrich, Miamisburg, OH, United States

10:42 0800. Carbohydrate Requirements During Intermittent High Intensity Exercise Compared to Continuous Moderate Intensity Exercise in Individuals with Type 1 Diabetes

ISMRM MERIT AWARD magna cum laude

Tania Buehler[1], Lia Bally[2], Ayse Sila Dokumaci[1], Christoph Stettler[2], Chris Boesch[1]
[1]Depts. Radiology and Clinical Research, University Bern, Bern, Switzerland; [2]Division of Endocrinology, Diabetes and Clinical Nutrition, Inselspital Bern, Bern, Switzerland

10:54 0801. The Acute Effects of Metformin on Cardiac and Hepatic Metabolism: A Hyperpolarized [1-13C]pyruvate Magnetic Resonance Spectroscopy Study

Andrew Lewis[1], Chloe McCallum[1], Jack Miller[1, 2], Lisa Heather[1], Damian J. Tyler[1]
[1]Department of Physiology, Anatomy and Genetics, University of Oxford, Oxford, United Kingdom; [2]Department of Physics, University of Oxford, Oxford, United Kingdom

11:06 0802. Fructose Increases *de Novo* Lipogenesis in the Liver of Rats: An *In Vivo* ^{1}H-[^{13}C] MRS Study

Sharon Janssens[1], Klaas Nicolay[1], Jeanine J. Prompers[1]
[1]Biomedical NMR, Eindhoven University of Technology, Eindhoven, Noord-Brabant, Netherlands

11:18 0803. Adipokine Secretions Correlate with MRI Measurements of Adiposity

Kathryn Murray[1], Caroline Hoad[2], Jill Garratt[3], Carolyn Costigan[2], Arvind Batra[4], Britta Siegmund[4], Yirga Falcone[3], Jan Smith[3], Eleanor Cox[2], Jan Paul[2], David Humes[3], Susan Francis[2], Luca Marciani[3], Robin Spiller[3], Penny Gowland[2]
[1]Sir Peter Mansfield Imaging Centre, Physics and Astronomy, University of Nottingham, Nottingham , United Kingdom; [2]Sir Peter Mansfield Imaging Centre, Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom; [3]Nottingham Digestive Diseases Biomedical Research Centre, Nottingham University Hospitals, Nottingham, United Kingdom; [4]Gastroenterology, Rheumatology, Infectious Diseases, Charité – Universitätsmedizin, Berlin, Germany

11:30 0804. Profiling Muscle Substrate Utilization in Insulin-Resistant Subjects Using ^{13}C-MRS at 7 Tesla

Douglas E. Befroy[1, 2], Kitt Falk Petersen[2], Douglas L. Rothman[1, 3], Gerald I. Shulman[2, 4]
[1]Diagnostic Radiology, Yale University School of Medicine, New Haven, CT, United States; [2]Internal Medicine, Yale University School of Medicine, New Haven, CT, United States; [3]Biomedical Engineering, Yale University School of Medicine, New Haven, CT, United States; [4]Howard Hughes Medical Institute, New Haven, CT, United States

11:42 0805. Contrast-Enhanced T1-Weighted MRI of the Small Bowel at 7 Tesla in Comparison to 1.5 Tesla

Maria Hahnemann[1, 2], Oliver Kraff[2], Stefan Maderwald[2], Soeren Johst[2], Mark E. Ladd[2, 3], Harald H. Quick[2, 4], Thomas Lauenstein[1]
[1]Department of Diagnostic and Interventional Radiology and Neuroradiology, University Hospital Essen, Essen, Germany; [2]Erwin L. Hahn Institute for Magnetic Resonance Imaging, Essen, Germany; [3]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany; [4]High Field and Hybrid MR Imaging, University Hospital Essen, Essen, Germany

11:54 0806. Comparison of T2-Weighted MRI of the Small Bowel at 7 Tesla and 1.5 Tesla

Maria L. Hahnemann[1, 2], Oliver Kraff[1], Stefan Maderwald[1], Soeren Johst[1], Mark E. Ladd[1, 3], Harald H. Quick[1, 4], Thomas C. Lauenstein[2]
[1]Erwin L. Hahn Institute for Magnetic Resonance Imaging, Essen, Germany; [2]Department of Diagnostic and Interventional Radiology and Neuroradiology, University Hospital Essen, Essen, Germany; [3]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany; [4]High Field and Hybrid MR Imaging, University Hospital Essen, Essen, Germany

12:06 0807. Prospective Comparison of a Contrast-Enhanced MRI Protocol with Contrast-Enhanced MDCT for the Primary Diagnosis of Acute Appendicitis in the General Population

Michael D. Repplinger[1, 2], Perry J. Pickhardt[2], Douglas R. Kitchin[2], Jessica B. Robbins[2], Timothy J. Ziemlewicz[2], Scott B. Reeder[2, 3]
[1]Emergency Medicine, University of Wisconsin School of Medicine and Public Health, Madison, WI, United States; [2]Radiology, University of Wisconsin School of Medicine and Public Health, Madison, WI, United States; [3]Medical Physics, University of Wisconsin School of Medicine and Public Health, Madison, WI, United States

12:18 0808. Diffusion and Post Contrast MFAST Imaging for Evaluation of Acute Appendicitis: The Stanford Experience

ISMRM MERIT AWARD magna cum laude

Alex Lewis[1], Mathew Bernbeck[1], Richard Barth[1], Shreyas Vasanawala
[1]Radiology, Stanford University, Stanford, CA, United States

Motion Correction

Constitution Hall 107 10:30-12:30 *Moderators:* Kevin M. Johnson, Ph.D. & Maxim Zaitsev, Ph.D.

10:30 0809. Combined Free Breathing, Whole Heart Self-Navigation and "pencil-Beam" 2D-T_2-Prep for Coronary MRA

ISMRM MERIT AWARD magna cum laude

Andrew J. Coristine[1, 2], Jérôme Chaptinel, [23], Giulia Ginami, [23], Gabriele Bonanno, [23], Ruud B. van Heeswijk[2], Davide Piccini[4, 5], Matthias Stuber[2]
[1]Department of Radiology,, University Hospital (CHUV) and University of Lausanne (UNIL), Lausanne, VD, Switzerland;
[2]CardioVascular Magnetic Resonance (CVMR) research centre, Centre for Biomedical Imaging (CIBM), Lausanne, VD, Switzerland;
[3]Department of Radiology, University Hospital (CHUV) and University of Lausanne (UNIL), Lausanne, VD, Switzerland;
[4]Department of Radiology, University Hospital (CHUV) and Centre for Biomedical Imaging (CIBM), Lausanne, VD, Switzerland;
[5]Advanced Clinical Imaging Technology, Siemens Healthcare IM BM PI, Lausanne, VD, Switzerland

10:42 0810. Motion Compensated Reconstruction in Accelerated Single-Shot Cardiac MRI

Aurélien Bustin[1, 2], Anne Menini[2], Shufang Liu[1, 2], Teresa Rincón Domínguez[1, 2], Darius Burschka[1], Martin A. Janich[2], Steven Wolff[3], Oleg Shubayev[3], David W. Stanley[4], Freddy Odille[5, 6], Anja C. Brau[7]

[1]Computer Science, Technische Universitat Munchen, Munich, Germany; [2]GE Global Research, Garching, Germany; [3]Advanced Cardiovascular Imaging, New York City, NY, United States; [4]GE Healthcare, Rochester, MN, United States; [5]Imagerie Adaptative Diagnostique et Interventionnelle, Université de Lorraine, Nancy, France; [6]U947, INSERM, Nancy, France; [7]Cardiac Center of Excellence, GE Healthcare, Garching, Germany

10:54 0811. Virtual Coil Navigator: A Robust Localized Motion Estimation Approach for Free-Breathing Cardiac MRI

Xinwei Shi[1], Joseph Cheng[2], Michael Lustig[3], John Pauly[1], Shreyas Vasanawala[2]

[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Radiology, Stanford University, Stanford, CA, United States; [3]Electrical Engineering and Computer Science, UC Berkeley, Berkeley, CA, United States

11:06 0812. Imaging in the Presence of Motion with Sliding Slice Distortions

Kevin Michael Johnson[1], James H. Holmes[2], Scott B. Reeder, [13]

[1]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States; [2]Global MR Applications and Workflow, GE Healthcare, Madison, WI, United States; [3]Radiology, University of Wisconsin-Madison, Madison, WI, United States

11:18 0813. Improved Tracking of Object Motion During MRI Examinations Using Coil Fingerprint Enhanced Signal Navigators.

Kaveh Vahedipour[1, 2], Thomas Köster, [23], Fernando Boada, [23]

[1]Center for Advanced Imaging Innovation and Research (CAI2R) , NYU Langone Medical Center, New York, NY, United States; [2]Bernard and Irene Schwartz Center for Biomedical Imaging, Department of Radiology, New York School of Medicine, New York, NY, United States; [3]Center for Advanced Imaging Innovation and Research (CAI2R), NYU Langone Medical Center, New York, NY, United States

11:30 0814. Predictive Sensor for Real-Time Respiratory Motion Monitoring

ISMRM MERIT AWARD magna cum laude

Robin Navest[1], Cornelis van den Berg[1], Jan Lagendijk[1], Anna Andreychenko[1]

[1]Imaging Division, UMC Utrecht, Utrecht, Netherlands

11:42 0815. Optical Prospective Motion Correction for High Resolution Quantitative MRI (QMRI) of the Brain

Martina F. Callaghan[1], Oliver Josephs[1], Michael Herbst[2], Maxim Zaitsev[2], Nicholas Todd[1], Nikolaus Weiskopf[1]

[1]Wellcome Trust Centre for Neuroimaging, UCL Institute of Neurology, UCL, London, United Kingdom; [2]Department of Radiology, University Medical Centre Freiburg, Freiburg, Germany

11:54 0816. 3D FatNav: Prospective Motion Correction for Clinical Brain Imaging

Magnus Mårtensson[1, 2], Mathias Engström, [23], Enrico Avventi[3], Ola Norbeck[3], Stefan Skare, [23]

[1]EMEA Research & Collaboration, GE Applied Science Laboratory, GE Healthcare, Stockholm, Sweden; [2]Dept. of Clinical Neuroscience, Karolinska Institutet, Stockholm, Sweden; [3]Dept. of Neuroradiology, Karolinska University Hospital, Stockholm, Sweden

12:06 0817. Simultaneous Multi-Slice (SMS) Accelerated EPI Navigators for Prospective Motion Correction in the Brain

Himanshu Bhat[1], M. Dylan Tisdall[2], Stephen F. Cauley[2], Thomas Witzel[2], Kawin Setsompop[2], Andre J.W. van der Kouwe[2], Keith Heberlein[1]

[1]Siemens Healthcare, Charlestown, MA, United States; [2]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States

12:18 0818. On the Resilience of GS-BSSFP to Motion and Other Noise-Like Artifacts

Michael N. Hoff[1], Jalal B. Andre[1], Qing-San Xiang[2, 3]

[1]Radiology, University of Washington, Seattle, WA, United States; [2]Physics, University of British Columbia, Vancouver, British Columbia, Canada; [3]Radiology, University of British Columbia, Vancouver, British Columbia, Canada

Multiple Sclerosis 1

John Bassett Theatre 102 10:30-12:30 *Moderators:* T.B.A. & T.B.A.

10:30 0819. Reduced Specific Absorption Rate (SAR) Magnetization Transfer Imaging with Low Density MT Pulse Technique for 7 Tesla

Se-Hong Oh[1], Wanyong Shin[1], Mark J Lowe[1]
[1]Imaging Institute, Cleveland Clinic Foundation, Cleveland, OH, United States

10:42 0820. High Resolution MR Elastography Reveals Disseminated White Matter Degradation of Brain Tissue Integrity in Clinically Isolated Syndrome

ISMRM MERIT AWARD summa cum laude

Andreas Fehlner[1], Kaspar-Josche Streitberger[1, 2], Friedemann Paul[3, 4], Jens Würfel, [35], Jürgen Braun[6], Ingolf Sack[1]
[1]Department of Radiology, Charité - Universitätsmedizin Berlin, Berlin, Germany; [2]Department of Neurology with experimental Neurology, Charité - Universitätsmedizin Berlin, Berlin, Germany; [3]NeuroCure Clinical Research Center, Charité - Universitätsmedizin Berlin, Berlin, Germany; [4]Clinical and Experimental Multiple Sclerosis Research Center, Department of Neurology, Charité - Universitätsmedizin Berlin, Berlin, Germany; [5]Institute of Neuroradiology, Universitätsmedizin Göttingen, Göttingen, Germany; [6]Institute of Medical Informatics, Charité - Universitätsmedizin Berlin, Berlin, Germany

10:54 0821. Ultra-High Field MRI Longitudinal MS Lesion Study

Bryson Dietz[1], David A. Rudko[2], Marcelo Kremenchutzky[3], Ravi S. Menon[1, 4]
[1]Centre for Functional and Metabolic Mapping, Robarts Research Institute, Western University, London, ON, Canada; [2]Montreal Neurological Institute, McGill University, Montreal, QC, Canada; [3]London Health Sciences Centre, London, ON, Canada; [4]Department of Medical Biophysics, Western University, London, ON, Canada

11:06 0822. Beyond Focal Cortical Lesions in Multiple Sclerosis: An *In Vivo* Quantitative and Spatial Imaging Study at 7 T

Céline Louapre[1, 2], Sindhuja T. Govindarajan[1], Costanza Giannì[1, 2], Jacob A. Sloane[3], RP Kinkel[4], Caterina Mainero[1, 2]
[1]AA. Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [2]Harvard Medical School, Boston, MA, United States; [3]Beth Israel Deaconess Medical Center, Boston, MA, United States; [4]University of California San Diego, San Diego, CA, United States

11:18 0823. Multivariate Combination of Magnetization Transfer Ratio and Quantitative T_2* to Detect Subpial Demyelination in Multiple Sclerosis

ISMRM MERIT AWARD magna cum laude

Gabriel Mangeat[1, 2], Sindhuja Tirumalai Govindarajan[2], Revere Philip Kinkel[3], Caterina Mainero[2, 4], Julien Cohen-Adad[1, 5]
[1]Institute of Biomedical Engineering, Polytechnique Montreal, Montreal, Qc, Canada; [2]Martinos Center for Biomedical Imaging, MGH, Charlestown, MA, United States; [3]Clinical Neurosciences, University of California San Diego, La Jolla, CA, United States; [4]Harvard Medical School, Boston, MA, United States; [5]Functional Neuroimaging Unit, CRIUGM, Université de Montréal, Montreal, Qc, Canada

11:30 0824. Advanced Myelin Water Imaging Techniques for Rapid Data Acquisition and Long T_2 Component Measurements

Jing Zhang[1], Irene Vavasour[1], Shannon Kolind[2], Baumeister Baumeister[3], Alexander Rauscher[1], Alex L. MacKay[1, 4]
[1]Department of Radiology, University of British Columbia, Vancouver, BC, Canada; [2]Division of Neurology, Department of Medicine, University of British Columbia, Vancouver, BC, Canada; [3]Department of Electrical and Computer Engineering, University of British Columbia, Vancouver, BC, Canada; [4]Department of Physics and Astronomy, University of British Columbia, Vancouver, BC, Canada

11:42 0825. Voxel-Based Analysis of Subcortical Grey Matter Using Transverse Relaxation and Quantitative Susceptibility Mapping: Application to Multiple Sclerosis

Dana Cobzas[1], Hongfu Sun[1], Andrew J. Walsh[1], R. Marc Lebel[1], Gregg Blevins[2], Alan H. Wilman[1]
[1]Biomedical Engineering, University of Alberta, Edmonton, Alberta, Canada; [2]Neurology, University of Alberta, Edmonton, Alberta, Canada

11:54 0826. Regional White Matter Abnormalities and Cognitive Impairment in MS: A Multicenter TBSS Study

Elisabetta Pagani[1], Maria A. Rocca[1, 2], Alvino Bisecco[1], Olga Ciccarelli[3], Christian Enzinger[4], Antonio Gallo[5], Hugo Vrenken[6], Maria Laura Stromillo[7], Tarek A. Yousry[3], Franz Fazekas[4], Gioacchino Tedeschi[5], Frederik Barkhof[6], Nicola De Stefano[7], Massimo Filippi[1, 2], the MAGNIMS Network[8]
[1]Neuroimaging Research Unit, Institute of Experimental Neurology, Division of Neuroscience, San Raffaele Scientific Institute, Vita-Salute San Raffaele University, Milan, MI, Italy; [2]Department of Neurology, San Raffaele Scientific Institute, Vita-Salute San

Raffaele University, Milan, MI, Italy; [3]UCLH NHS Foundation Trust, National Hospital for Neurology and Neurosurgery,, London, UK, United Kingdom; [4]Department of Neurology, Medical University of Graz, Graz, A, Austria; [5]MRI Center "SUN-FISM", Second University of Naples, Naples, NA, Italy; [6]Department of Radiology, VU University Medical Centre, Amsterdam, Netherlands, Netherlands; [7]Department of Neurological and Behavioral Sciences, University of Siena, Siena, SI, Italy; [8]EU, EU, Italy

12:06 **0827.** **Cognitive Status of Multiple Sclerosis Patients Is Associated with Neocortical Neuronal Injury: A Voxel-Based Sodium MRI Study**
ISMRM MERIT AWARD magna cum laude
Adil Maarouf[1, 2], Bertrand Audoin[1], Anthony Faivre[1], Francoise Reuter[1], Fanelly Pariollaud[1], Audrey Rico[1], Elisabeth Soulier[1], Sylviane Confort-Gouny[1], Maxime Guye[1], Lothar Schad[3], Jean Pelletier[1], Jean-Philippe Ranjeva[1], Wafaa Zaaraoui[1]
[1]CRMBM UMR CNRS 7339 Aix-Marseille Université, Marseille, France; [2]Faculté de Médecine, Université de Reims Champagne-Ardenne, Reims, France; [3]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany

12:18 **0828.** **High Contrast Magnitude and Phase Imaging of the Short T2 Components in White Matter of the Brain**
ISMRM MERIT AWARD magna cum laude
Qun He[1], Lanqing Ma[1], Wen Hong, [12], Vipul Sheth[1], Graeme M. Bydder[1], Jiang Du[1]
[1]Radiology, UC, San Diego, San Diego, CA, United States; [2]Radiology, China-Japan friendship hospital, Beijing, China

Educational Course
Orthopedic Surgery: What Do I need to Know Before & After? Part 1: Arthritis

Organizers: Eric Y. Chang, M.D., Garry E. Gold, M.D., Richard Kijowski, M.D., William B. Morrison, M.D., Ravinder R. Regatte, Ph.D. & Siegfried Trattnig, M.D.

Room 718 A 10:30-12:30 *Moderators:* Eric Y. Chang, M.D. & Emily McWalter, Ph.D.

10:30 **Subchondroplasty**
William B. Morrison

11:00 **Cartilage Repair**
Carl S. Winalski

11:30 **Biomaterials**
Jennifer H. Elisseeff

12:00 **Hip Metal-On-Metal Implants & Complications**
Hollis G. Potter

12:30 **Adjournment & Meet the Teachers**

Combined Educational & Scientific Session
Pediatric Neuroimaging

Organizers: Jeffrey J. Neil, M.D., Ph.D.

Room 801 A/B 10:30-12:30 *Moderators:* Petra S. Hüppi, M.D. & Terrie E. Inder, M.B.Ch.B., M.D.

10:30 **How to Scan an Infant or Child Without Using Sedation**
Kelly N. Botteron

10:54 **0832.** **Propeller Techniques for Pediatric Exams in the Presence of Large Motion**
Stefan Skare[1], Enrico Avventi[1], Magnus Mårtensson[2], Ola Norbeck[1], Mathias Engström[1], Maria Sandell[1], Chen Wang[1]
[1]Neuroradiology, Karolinska University Hospital, Stockholm, Sweden; [2]EMEA Research & Collaboration, GE, Stockholm, Sweden

11:06 **0833.** **Retrospective Motion Correction of MPnRAGE Studies in Children**
Andrew L. Alexander[1, 2], Janet E. Lainhart[1], Audra Sterling[1], Brittany G. Travers[1], Abigail Freeman[1], Steven R. Kecskemeti[1]
[1]Waisman Center, University of Wisconsin, Madison, WI, United States; [2]Medical Physics and Psychiatry, University of Wisconsin, Madison, WI, United States

11:18 **What MR Scientists Should Know About Neurodevelopmental Testing**
Prof. Peter Anderson

11:30 0834. Multifunctional Liposome for Non-Small Cell Lung Cancer Targeting and Theranostic MRI
Ren Lili[1], Shizhen Chen[1], Haidong Li[1], Zhiying Zhang[1], Jianping Zhong[1], Xin Zhou[1]
[1]National Center for Magnetic Resonance in Wuhan, Wuhan Institute of Physics and Mathematics, Wuhan, Hubei, China

11:54 0835. Neural Correlates of Phonological Processing in 4-6 Year Olds
Andrea S. Miele[1], Holly Dirks[2], Dannielle John Whiley[2], Terry Harrison-Goldman[1], Viren D'Sa[3], Sean Deoni[2, 4]
[1]Psychiatry and Human Behavior, Alpert Medical School of Brown University, Providence, RI, United States; [2]Advanced Baby Imaging Laboratory, Brown University, Providence, RI, United States; [3]Pediatrics, Neurodevelopmental Center, MHRI, Pawtucket, RI, United States; [4]Pediatric Radiology, Children's Hospital Colorado, CO, United States

12:06 0836. Differing Contributions of Whole Brain Fractional Anisotropy, Axon Density and Axon Dispersion to Neurodevelopmental Outcomes of Children Born Very Preterm
Claire E. Kelly[1], Deanne K. Thompson[1, 2], Jian Chen[1, 3], Alexander Leemans[4], Christopher L. Adamson[1], Terrie E. Inder[5], Jeanie LY Cheong[1, 6], Lex W. Doyle[1, 6], Peter J. Anderson[1, 7]
[1]Murdoch Childrens Research Institute, Melbourne, VIC, Australia; [2]Florey Institute of Neuroscience and Mental Health, Melbourne, VIC, Australia; [3]Monash University, Melbourne, VIC, Australia; [4]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands; [5]Brigham and Women's Hospital, Boston, MA, United States; [6]Royal Women's Hospital, Melbourne, VIC, Australia; [7]University of Melbourne, Melbourne, VIC, Australia

12:18 0837. White Matter Maturation Profiles Through Early Childhood Predict General Cognitive Ability
Sean Deoni[1], Jonathan O'Muircheartaigh[2], Holly Dirks[1], Douglas C. Dean[1]
[1]Brown University, Providence, RI, United States; [2]NeuroImaging, King's College London, London, United Kingdom

12:30 **Adjournment & Meet the Teachers**

Combined Educational & Scientific Session
Traumatic Brain Injury

Organizers: Jonathan H. Gillard, M.D., FRCR, MBA & Howard A Rowley, M.D.

Room 718 B 10:30-12:30 *Moderators:* Roland R. Lee, M.D. & Joshua S. Shimony, M.D., Ph.D.

13:30 **MR Spectroscopy in Acute Brain Injury - What We Can Offer the Clinician Now**
Stefan Blüml

14:00 0829. Diffusion Kurtosis Imaging Quantifies the Effects of Mild Traumatic Brain Injury in Football Players
ISMRM MERIT AWARD summa cum laude
Daniel Olson[1], Melissa Lancaster[2], Ashley LaRoche[3], Volkan Arpinar[3], Michael McCrea[3], L Tugan Muftuler[3]
[1]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Neurology, Medical College of Wisconsin, WI, United States; [3]Neurosurgery, Medical College of Wisconsin, WI, United States

14:20 0830. Altered Cortical and Subcortical Functional Connectivity in a Single Football Season
ISMRM MERIT AWARD summa cum laude
Bryson B. Reynolds[1], Todd M. Chatlos[1], Donna K. Broshek[2], Max Wintermark[3], Susan F. Saliba[4], Howard P. Goodkin[5], T. Jason Druzgal[1]
[1]Radiology and Medical Imaging, University of Virginia School of Medicine, Charlottesville, VA, United States; [2]Psychiatry and Neurobehavioral Sciences, University of Virginia School of Medicine, Charlottesville, VA, United States; [3]Radiology, Stanford School of Medicine, San Francisco, CA, United States; [4]Kinesiology, University of Virginia Curry School, Charlottesville, VA, United States; [5]Neurology, University of Virginia Health System, Charlottesville, VA, United States

14:40 0831. Longitudinal Blood-Brain Barrier Permeability, Cerebral Flood Flow, T2 and Diffusion Changes Following Mild Traumatic Brain Injury
Wei Li[1, 2], Justin Long[1], Lora Watts[1], Qiang Shen[1], Robert Boggs[1], Zhao Jiang[1], Yunxia Li[1], Timothy Q. Duong[1, 2]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Ophthalmology, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

15:00 **MR in Acute Brain Injury - What's on the Horizon**
Karen A. Tong

15:30 **Adjournment & Meet the Teachers**

Hands-On Workshop 3 – Siemens Healthcare GmbH

Room 711 10:30-12:30 *(no CME credit)*

Hands-On Workshop 3 - GE Healthcare

Room 703 10:30-12:30 *(no CME credit)*

Hands-On Workshop 3 - Philips Healthcare

Room 707 10:30-12:30 *(no CME credit)*

Traditional Poster Session: Diffusion

Exhibition Hall 13:30-15:30 *(no CME credit)*

Electronic Poster Session: Molecular Imaging

Exhibition Hall 13:30-15:30 *(no CME credit)*

Electronic Poster Session: Spectroscopy

Exhibition Hall 13:30-15:30 *(no CME credit)*

Study Group Session
Detection & Correction of Motion in MRI & MRS

Reception Hall 104 BCD 13:30-15:30 *(no CME credit)*

Study Group Session
MR of Cancer

Room 801 A/B 13:30-15:30 *(no CME credit)*

Power Pitch Session: Body

Power Pitch Theatre, Exhibition Hall 13:30-14:30 *(no CME credit)*

Moderators: Elizabeth M. Hecht, M.D. & Valentina Taviani, Ph.D.

0838. **Does Using a 16-Element Receive-Array Improve Whole-Liver ^{31}P Metabolite Ratio Quantification at 7T?**
Lucian A. B. Purvis[1], William T. Clarke[1], Michael Pavlides[1], Stefan Neubauer[1], Matthew D. Robson[1], Christopher T. Rodgers[1]
[1]Department of Cardiovascular Medicine, University of Oxford, Oxford, Oxfordshire, United Kingdom

0839. **Combined Gadoxetic Acid and Gadofosveset Enhanced Liver MRI: Detection and Characterization of Focal Liver Lesions**
Peter Bannas[1, 2], Candice A. Bookwalter[1], Tim Ziemlewicz[1], Utaroh Motosugi[1], Richard Bruce[1], Theodora A. Potretzke[1], Scott B. Reeder[1, 3]
[1]Radiology, University of Wisconsin-Madison, Madison, WI, United States; [2]Radiology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [3]Medical Physics, University of Wisconsin-Madison, WI, United States

0840. Adipose Tissue Hydration as a Potential Non-Invasive Marker for Adipose Tissue Hypertrophy

ISMRM MERIT AWARD magna cum laude

Navin Michael[1], Suresh Anand Sadananthan[1], Jadegoud Yaligar[2], Swee Shean Lee[2], Melvin Khee-Shing Leow[1, 3], Chin Meng Khoo[4], Eric Yin Hao Khoo[4], Kavita Venkataraman[5], Yung Seng Lee[1, 6], Yap Seng Chong[1, 7], Peter D. Gluckman[1], E. Shyong Tai[4], S. Sendhil Velan[2, 8]

[1]Singapore Institute for Clinical Sciences, A*STAR, Singapore; [2]Singapore BioImaging Consortium, A*STAR, Singapore; [3]Department of Endocrinology, Tan Tock Seng Hospital, Singapore; [4]Department of Medicine, Yong Loo Lin School of Medicine , National University of Singapore, Singapore; [5]Saw Swee Hock School of Public Health, National University of Singapore, Singapore; [6]Department of Paediatrics , Yong Loo Lin School of Medicine, Singapore; [7]Department of Obstetrics & Gynaecology, Yong Loo Lin School of Medicine, Singapore; [8]Clinical Imaging Research Centre, A*STAR, Singapore

0841. Modelling Skull Dynamics During Brain Magnetic Resonance Elastography to Evaluate Wave Delivery Strategies

Deirdre M. McGrath[1, 2], Alejandro F. Frangi[1], Iain D. Wilkinson[2], Zeike A. Taylor[1]

[1]CISTIB, Center for Computational Imaging & Simulation Technologies in Biomedicine, University of Sheffield, Sheffield, South Yorkshire, United Kingdom; [2]Academic Radiology, University of Sheffield, Sheffield, South Yorkshire, United Kingdom

0842. Isocaloric Fructose Restriction for 10 Days Reduces MR-Measured Liver, Pancreatic and Visceral Fat in High Sugar-Consuming, Obese Children

Susan M. Noworolski[1], Kathleen Mulligan[2], Natalie Korn[1], Molly Gibson[1], Viva W. Tai[2, 3], Michael Wen[2], Ayca Erkin-Cakmak[4], Alejandro Gugliucci[5], Robert H. Lustig[4], Jean-Marc Schwarz[6]

[1]Radiology & Biomedical Imaging, University of California, San Francisco, CA, United States; [2]Medicine, University of California, San Francisco, CA, United States; [3]CTSI-CRS, University of California, San Francisco, CA, United States; [4]Pediatrics, University of California, San Francisco, CA, United States; [5]Research, Touro University College of Osteopathic Medicine, Vallejo, CA, United States; [6]Basic Science, Touro University College of Osteopathic Medicine, Vallejo, CA, United States

0843. The Effect of Parallel Radiofrequency Transmission on Arterial Input Function Selection in 3T DCE-MRI of Prostate Cancer

Hatim Chafi[1], Saba N. Elias[2], Huyen T. Nguyen[2], Harry T. Friel[3], Michael V. Knopp[2], BeiBei Guo[4], Steven B. Heymsfield[5], Guang Jia[1]

[1]Department of Physics and Astronomy, Louisiana State University, Baton Rouge, LA, United States; [2]Department of Radiology, The Ohio State University, Columbus, OH, United States; [3]Clinical Science Operations, Philips Healthcare, Highland Heights, OH, United States; [4]Department of Experimental Statistics, Louisiana State University, Baton Rouge, LA, United States; [5]Metabolism - Body Composition, Pennington Biomedical Research Center, Baton Rouge, LA, United States

0844. Automatic Combined Whole-Body Muscle and Fat Volume Quantification Using Water-Fat Separated MRI in Postmenopausal Women

Janne West[1, 2], Thobias Romu, [23], Anna-Clara Spetz Holm[4], Hanna Lindblom[1], Lotta Lindh-Åstrand[4], Magnus Borga, [23], Mats Hammar[4], Olof Dahlqvist Leinhard[1, 2]

[1]Department of Medical and Health Sciences, Linköping University, Linköping, Sweden; [2]Center for Medical Imaging Science and Visualization, Linköping, Sweden; [3]Department of Biomedical Engineering, Linköping University, Linköping, Sweden; [4]Department of Clinical and Experimental Medicine, Linköping University, Linköping, Sweden

0845. Stimulated Echo Diffusion Weighted Imaging of the Liver at 3T

Hui Zhang[1], Aiqi Sun[1], Xiaodong Ma[1], Zhe Zhang[1], Ed X. Wu[2, 3], Hua Guo[1]

[1]Center for Biomedical Imaging Research, Department of Biomedical Engineering, School of Medicine, Tsinghua University, Beijing, China; [2]Laboratory of Biomedical Imaging and Signal Processing, The University of Hong Kong,, Hong Kong SAR, China; [3]Department of Electrical and Electronic Engineering, The University of Hong Kong,, Hong Kong SAR, China

0846. Characterizing Water Diffusion and Perfusion Features of the Healthy and Malignant Pancreas Using Diffusion-Tensor and Diffusion Weighted MRI

Noam Nissan[1], Talia Golan[2], Edna Furman-Haran[1], Sara Apter[2], Yael Inbar[2], Arie Ariche[2], Barak Bar Zakay[2], Yuri Goldes[2], Michael Schvimer[2], Dov Grobgeld[1], Hadassa Degani[1]

[1]Weizmann Institute of Science, Rehovot, Israel; [2]Sheba Medical Center, Israel

0847. Utility of Combined Ga-68 DOTA-TOC PET and Eovist MRI Utilizing PET/MRI

Thomas A. Hope[1], Carina Mari Aparici[1], Eric Nakakura[2], Henry VanBrocklin[1], Miguel Hernandez Pampaloni[1], James Slater[1], Salma Jivan[1], Judy Yee[1], Emily Bergsland[3]

[1]Radiology and Biomedical Imaging, UCSF, San Francisco, CA, United States; [2]Department of Surgery, UCSF, San Francisco, CA, United States; [3]Department of Medicine, UCSF, San Francisco, CA, United States

0848. Imaging of Dissolved-Phase Hyperpolarized Xenon-129 in Human Kidneys

John P. Mugler, III[1], G. Wilson Miller[1], Craig H. Meyer[2], Kun Qing[1], Jaime F. Mata[1], Steven Guan[2], Kai Ruppert[1,3], Iulian C. Ruset[4,5], F. William Hersman[4,5], Talissa A. Altes[1]
[1]Radiology & Medical Imaging, University of Virginia, Charlottesville, VA, United States; [2]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [3]Cincinnati Children's Hospital, Cincinnati, OH, United States; [4]Xemed, LLC, Durham, NH, United States; [5]Physics, University of New Hampshire, Durham, NH, United States

ISMRM MERIT AWARD magna cum laude

0849. Renal Blood Oxygenation Level-Dependent Imaging in Longitudinal Follow-Up of the Donated and the Remaining Kidney in Renal Transplantation

Maryam Seif[1], Ute Eisenberger[2], Tobias Binser[1], Harriet C. Thoeny[3], Fabienne Krauer[1], Chris Boesch[1], Bruno Vogt[4], Peter Vermathen[1]
[1]Depts. Radiology and Clinical Research, University Bern, Bern, Switzerland; [2]Dept. Nephrology, University Hospital Essen-Duisburg , Essen, Germany; [3]Dept. Radiology, Neuroradiology and Nuclear Medicine, University Hospital of Bern,, Bern, Switzerland; [4]Dept. Nephrology, Hypertension and Clinical Pharmacology, University Hospital of Bern, Bern, Switzerland

0850. Redistribution of Fractional Ventilation After Circumscribed Primary Lung Injury and Atelectasis

Yi Xin[1], Maurizio Cereda[2], Hooman Hamedani[1], Harrilla Profka[1], Justin Clapp[1], Stephen Kadlecek[1], Brian P. Kavanagh[3], Rahim R. Rizi[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Anesthesiology and Critical Care, University of Pennsylvania, Philadelphia, PA, United States; [3]Hospital for Sick Children, Toronto, Ontario, Canada

ISMRM MERIT AWARD magna cum laude

0851. Three-Dimensional Pulmonary ^{1}H MRI Multi-Region Segmentation Using Convex Optimization

Fumin Guo[1,2], Sarah Svenningsen[1,3], Aaron Fenster[1,2], Grace Parraga[1,2]
[1]Imaging Research Laboratories, Robarts Research Institute, London, Ontario, Canada; [2]Graduate Program in Biomedical Engineering, The University of Western Ontario, London, Ontario, Canada; [3]Department of Medical Biophysics, The University of Western Ontario, London, Ontario, Canada

ISMRM MERIT AWARD summa cum laude

0852. Ventilation Heterogeneity in Obstructive Airways Disease – Comparing Multi-Breath Washout-Imaging with Global Lung Measurements

Felix C. Horn[1], Helen Marshall[1], Salman Siddiqui[2], Alexander Horsley[3], Laurie Smith[1], Ina Aldag[4], Richard Kay[5], Christopher J. Taylor[4], Juan Parra-Robles[1], Jim M. Wild[1]
[1]Sheffield University, Sheffield, United Kingdom; [2]University of Leicester, United Kingdom; [3]University of Manchester, United Kingdom; [4]Sheffield Children's NHS Foundation Trust, NHS, United Kingdom; [5]Novartis, Switzerland

Novel RF Coil Concepts

Room 701 A 13:30-15:30 *Moderators:* Gregor Adriany, Ph.D. & George R. Duensing, Ph.D.

13:30 0853. 3D-Printed RF Coils for Solution-State NMR: Towards Low-Cost, High-Throughput Arrays

ISMRM MERIT AWARD summa cum laude

R. Adam Horch[1,2], John C. Gore[1,2]
[1]Department of Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [2]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States

13:42 0854. Multi-Turn Multi-Gap Transmission Line Resonators - First Tests at 7 T

ISMRM MERIT AWARD magna cum laude

Roberta Kriegl[1,2], Jean-Christophe Ginefri[2], Marie Poirier-Quinot[2], Zhoujian Li[2], Luc Darrasse[2], Ewald Moser[1,3], Elmar Laistler[1,3]
[1]Center for Medical Physics and Biomedical Engineering, Medical University, Vienna, Austria; [2]IR4M (Imagerie par Résonance Magnétique Médicale et Multi-Modalités), UMR8081 CNRS, Université Paris Sud, Orsay, Essonne, France; [3]MR Centre of Excellence, Medical University, Vienna, Austria

13:54 0855. Q-Spoiling Method Using Depletion Mode Gallium Nitride (GaN) HEMT Devices at 1.5T

ISMRM MERIT AWARD summa cum laude

Jonathan Y. Lu[1], Kamal Aggarwal[1], Thomas Grafendorfer[2], Fraser Robb[3], John M. Pauly[1], Greig C. Scott[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Advanced Coils, GEHC Coils, Stanford, CA, United States; [3]GE Healthcare, Aurora, OH, United States

14:06 0856. On the Contribution of Electric-Type Current Patterns to UISNR for a Spherical Geometry at 9.4 T

ISMRM MERIT AWARD summa cum laude

Andreas Pfrommer[1], Anke Henning[1, 2]
[1]Max Planck Institute for Biological Cybernetics, Tuebingen, Germany; [2]Institute for Biomedical Engineering, UZH and ETH Zurich, Zurich, Switzerland

14:18 0857. 3D Curved Electric Dipole Antenna for Propagation Delay Compensation

ISMRM MERIT AWARD magna cum laude

Gang Chen[1, 2], Daniel Sodickson[1], Graham Wiggins[1]
[1]Center for Advanced Imaging Innovation and Research (CAI2R) and Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States; [2]The Sackler Institute of Graduate Biomedical Science, New York University School of Medicine, New York, NY, United States

14:30 0858. New Low-Order Pre-Fractal Geometries of High Permittivity Pads Further Increase Sensitivity at High Magnetic Fields

ISMRM MERIT AWARD summa cum laude

Rita Schmidt[1], Andrew Webb[1]
[1]Radiology, Leiden University Medical Center, Leiden, Netherlands

14:42 0859. Discovering and Working Around Effects of Unwanted Resonant Modes in High Permittivity Materials Placed Near RF Coils

Gillian G. Haemer[1, 2], Christopher M. Collins[1, 2], Daniel K. Sodickson[1, 2], Graham C. Wiggins[1]
[1]The Center for Advanced Imaging Innovation and Research, and the Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States; [2]The Sackler Institute of Graduate Biomedical Sciences, Department of Radiology, New York University School of Medicine, New York, NY, United States

14:54 0860. Comparison of New Element Designs for Combined RF-Shim Arrays at 7T

ISMRM MERIT AWARD magna cum laude

Simone Angela Winkler[1], Jason P. Stockmann[2], Paul A. Warr[3], Boris Keil[2], Lawrence L. Wald[2, 4], Brian K. Rutt[1]
[1]Dept. of Radiology, Stanford University, Stanford, CA, United States; [2]A. A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA, United States; [3]Department of Electrical & Electronic Engineering, University of Bristol, Clifton, United Kingdom; [4]Harvard-MIT Health Sciences and Technology, Massachusetts Institute of Technology, Cambridge, MA, United States

15:06 0861. Integrated Parallel Reception, Excitation, and Shimming (IPRES) with Split DC Loops for Improved B0 Shimming

ISMRM MERIT AWARD magna cum laude

Dean Darnell[1], Trong-Kha Truong[1], Allen Song[1]
[1]Brain Imaging and Analysis Center, Duke University, Durham, NC, United States

15:18 0862. Endoluminal MR Receiver Coil Based on Electro-Optical Conversion and Active Optical Decoupling

Isabelle Saniour[1], Anne-Laure Perrier[2], Reina Aydé[1], Gwenaël Gaborit[2, 3], Lionel Duvillaret[4], Olivier Beuf[1]
[1]Université de Lyon, CREATIS, CNRS UMR 5220, Inserm U1044, INSA-Lyon, Université Lyon 1, Villeurbanne, France; [2]Université de Savoie, IMEP-LAHC, UMR 5130, Le Bourget-du-Lac, France; [3]KAPTEOS , Sainte-Hélène-du-Lac, France; [4]KAPTEOS, Sainte-Hélène-du-Lac, France

MR-Guided Interventions

Room 701 B 13:30-15:30 *Moderators:*Charles L. Dumoulin, Ph.D. & Bruno Quesson, Ph.D.

13:30 0863. Speeding-Up MR Acquisitions Using Ultrasound Signals, and Scanner-Less Real-Time MR Imaging

Frank Preiswerk[1], W. Scott Hoge[1], Matthew Toews[1], Jr-yuan George Chiou[1], Laurent Chauvin[1], Lawrence P. Panych[1], Bruno Madore[1]
[1]Department of Radiology, Harvard Medical School, Brigham and Women's Hospital, Boston, MA, United States

13:42 0864. Pushing X-Ray CT Out of the Equation: *In Vivo* RASOR MRI-Based Seed Detection for Post-Implant Dosimetry in LDR Prostate

ISMRM MERIT AWARD magna cum laude

Peter Roland Seevinck[1], Cornelis A. van den Berg[2], Frank Zijlstra[1], Marielle E. Philippens[2], Stan Jelle Hoogcarspel[2], Jan J. Lagendijk[2], Maximus A. Viergever[1], Marinus Adriaan Moerland[2]
[1]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands; [2]Department of Radiotherapy, University Medical Center Utrecht, Netherlands

13:54 0865. Improved Cortical Bone Segmentation Using a Spectral-Spatial Selective Pulse to Reduce Water/fat In-Phase Echo Time

Matteo Maspero[1], Peter R. Seevinck[2], Anna Andreychenko[1], Sjoerd Crijns[1], Alessandro Sbrizzi[3], Max Viergever[2], Jan J. W. Lagendijk[1], Cornelis A. T. van Den Berg[1]
[1]Radiotherapy, UMC Utrecht, Utrecht, Netherlands; [2]Image Sciences Institute, UMC Utrecht, Utrecht, Netherlands; [3]Radiology, UMC Utrecht, Utrecht, Netherlands

14:06 0866. Synthetic CT Generation from T2 Weighted MRI Using a Hybrid Regression and Multi-Atlas Approach

S. Ghose[1], D. Rivest Henault[1], J. Mitra[1], J. Sun[2], P. Pichler[3], P. Greer[3], J. Dowling[4]
[1]Australian e-Health Research Centre, CSIRO Digital Productivity Flagship, Herston, QLD, Australia; [2]University of Newcastle, NSW, Australia; [3]Department of Radiation Oncology, University of Newcastle, NSW, Australia; [4]Australian e-Health Research Centre, CSIRO Digital Productivity Flagship, QLD, Australia

14:18 0867. Integration of Active MR Tracking Into Adaptive Radiation Therapy Treatment Planning

ISMRM MERIT AWARD summa cum laude

Wei Wang[1, 2], Akila N. Viswanathan[2], Antonio L. Damato[2], Zion T. Tse[3], Yue Chen[3], Ravi T. Seethamraju[4], Clare M. Tempany[1], Robert A. Cormack[2], Ehud J. Schmidt[1]
[1]Radiology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, United States; [2]Radiation Oncology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, United States; [3]The University of Georgia, GA, United States; [4]MR R&D, Siemens Healthcare, MA, United States

14:30 0868. Two-Channel Visualization of a Passive Nitinol Guidewire with Iron Oxide Maker Created from a Single Image Acquisition

Adrienne E. Campbell-Washburn[1], Burcu Basar[1, 2], Toby Rogers[1], Merdim Sonmez[1], Ozgur Kocaturk[1, 2], Robert J. Lederman[1], Michael S. Hansen[1], Anthony Z. Faranesh[1]
[1]Cardiovascular and Pulmonary Branch, Division of Intramural Research, National Heart Lung and Blood Institute, National Institutes of Health, Bethesda, MD, United States; [2]Institute of Biomedical Engineering, Bogazici University, Istanbul, Turkey

14:42 0869. Real-Time MRI Guided Cardiac Cryo-Ablation

Eugene G. Kholmovski[1, 2], Ravi Ranjan[2], Nicolas Coulombe[3], Joshua Silvernagel[2], Nassir F. Marrouche[2]
[1]UCAIR, Department of Radiology, University of Utah, Salt Lake City, UT, United States; [2]CARMA Center, University of Utah, Salt Lake City, UT, United States; [3]Medtronic CryoCath, Montreal, Quebec, Canada

14:54 0870. Visualization of Porcine Gastric Ulcer *In Vivo* Using Intracavitary RF Probe and Its Navigation System

Yuichiro Matsuoka[1, 2], Yoshinori Morita[3], Yoshiki Hashioka[4], Etsuko Kumamoto[5], Hiromu Kutsumi[2], Takeshi Azuma[2], Kagayaki Kuroda[6]
[1]Center for Information and Neural Networks, National Institute of Information and Communications Technology, Suita, Japan; [2]Department of Internal Medicine, Kobe University Graduate School of Medicine, Kobe, Japan; [3]Department of Gastroenterology, Kobe University School of Medicine, Kobe, Japan; [4]Faculty of Engineering, Kobe University, Kobe, Japan; [5]Information Science and Technology Center, Kobe University, Kobe, Japan; [6]School of Information Science and Technology, Tokai University, Hiratsuka, Japan

15:06 0871. Minimally Invasive Magnetic Resonance Imaging-Guided Delivery of Neural Stem Cells Into the Porcine Spinal Cord

ISMRM MERIT AWARD magna cum laude

Jason J. Lamanna[1, 2], Lindsey N. Urquia[1], Carl V. Hurtig[1], Juanmarco Gutierrez[1], Cody Anderson[3], Pete Piferi[4], Thais Federici[1], Nicholas M. Boulis[1, 2], John N. Oshinski, [25]
[1]Neurosurgery, Emory University, Atlanta, GA, United States; [2]Biomedical Engineering, Emory University & Georgia Institute of Technology, Atlanta, GA, United States; [3]Physics, Emory University, Atlanta, GA, United States; [4]MRI Interventions, Inc., Memphis, TN, United States; [5]Radiology, Emory University, Atlanta, GA, United States

15:18 0872. Wide-Bore MRI Guided DBS Surgery: Initial Experience

Karl K. Vigen[1], Deborah Rusy[2], Laura Buyan-Dent[3], Nancy L. Ninman[3], Karl A. Sillay[4, 5]
[1]Radiology, University of Wisconsin-Madison, Madison, WI, United States; [2]Anesthesiology, University of Wisconsin-Madison, Madison, WI, United States; [3]Neurology, University of Wisconsin-Madison, Madison, WI, United States; [4]Semmes-Murphy Neurologic and Spine Institute, Memphis, TN, United States; [5]Neurosurgery and Electrical Engineering & Computer Science, University of Tennessee, Memphis, TN, United States

CE & Non CE - Innovations Around the Body

Room 714 A/B 13:30-15:30 *Moderators:* T.B.A. & T.B.A.

13:30 0873. Evaluation of Perfusion in Rheumatoid Arthritis Patients with Highly Accelerated Dynamic Contrast Enhanced Wrist MRI

Jing Liu[1], Valentina Pedoia[1], Ursula Heilmeier[1], Favian Su[1], Sameer Khanna[2], John Imboden[3], Jonathan Graf[3], David Saloner[1], Xiaojuan Li[1]

[1]Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [2]University of California Berkeley, Berkeley, CA, United States; [3]Medicine, University of California San Francisco, San Francisco, CA, United States

13:42 0874. 3D Radial UTE MRI for Comprehensive Imaging of Pulmonary Embolism in Canines

Peter Bannas[1, 2], Laura C. Bell[3], Kevin M. Johnson[3], Mark L. Schiebler[1], Christopher J. François[1], Utaroh Motosugi[1], Dan Consigny[1], Scott B. Reeder[1, 3], Scott K. Nagle[1, 3]

[1]Radiology, University of Wisconsin-Madison, Madison, WI, United States; [2]Radiology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [3]Medical Physics, University of Wisconsin-Madison, WI, United States

13:54 0875. Image-Based Respiratory Motion Compensation for CMRA in Patients with Coronary Artery Disease

ISMRM MERIT AWARD magna cum laude

Markus Henningsson[1], Kostas Bratis[1], Eike Nagel[1], Rene Botnar[1]

[1]Division of Imaging Sciences and Biomedical Engineering, King's College London, London, United Kingdom

14:06 0876. PETRA QMRA: Towards Zero-Flow Dephasing Intracranial Non-Contrast MR Angiography

Yutaka Natsuaki[1], Xiaoming Bi[1], David M. Grodzki[2], Aurelien F. Stalder[2], Gerhard Laub[1]

[1]Siemens Healthcare, Los Angeles, CA, United States; [2]Siemens Healthcare, Erlangen, Germany

14:18 0877. Quiet, Dual-Contrast Ultra-Short Echo Time MRA of the Extracranial Carotid Arteries

Ioannis Koktzoglou[1, 2], Ian G. Murphy[1, 3], David Grodzki[4], Shivraman Giri[5], Robert R. Edelman[1, 3]

[1]Radiology, NorthShore University HealthSystem, Evanston, IL, United States; [2]Radiology, The University of Chicago Pritzker School of Medicine, Chicago, IL, United States; [3]Radiology, Northwestern University Feinberg School of Medicine, Chicago, IL, United States; [4]Healthcare Sector, Siemens AG, Erlangen, Germany; [5]Siemens Healthcare, Chicago, IL, United States

14:30 0878. Carotid Atherosclerotic Plaque Surface Condition Evaluation Utilizing Simultaneous Non-Contrast Angiography and IntraPlaque Hemorrhage (SNAP) Sequence

Shuo Chen[1], Xihai Zhao[1], Niranjan Balu[2], Haining Liu[2], Zechen Zhou[1], Jinnan Wang[2, 3], Rui Li[1], Chun Yuan[1, 2], Huijun Chen[1]

[1]Center for Biomedical Imaging Research, Department of Biomedical Engineering, School of Medicine, Tsinghua University, Beijing, China; [2]Department of radiology, University of Washington, Seattle, United States; [3]Philips Research North America, Briarcliff Manor, NY, United States

14:42 0879. Improved Visualization of the Accelerated ASL-Based Time-Resolved MRA with Single Acquisition of Labeled and Control Images

Yuriko Suzuki[1], Tetsuo Ogino[1], James Alastair Meakin[2], Akira Suwa[1], Daigo Ushijima[1], Marc Van Cauteren[3]

[1]Healthcare, Philips Electronics Japan, Minato-ku, Tokyo, Japan; [2]Philips Healthcare Netherlands, Best, Netherlands; [3]Philips Healthcare Asia Pasific, Tokyo, Japan

14:54 0880. Depiction of Transplant Renal Vascular Anatomy and Complications: Unenhanced MR Angiography by Using Spatial Labeling with Multiple Inversion Pulses

Hao Tang[1], Daoyu Hu[1], Zi Wang[1], Xiaoyan Meng[1], Yanchu Wang[1]

[1]Radiology, Tongji Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, Hubei, China

15:06 0881. Age-Related Changes of Aortic Hemodynamics Derived from 4D Flow MRI in 60 Healthy Volunteers

Pim van Ooij[1, 2], Julio Garcia[2], Susanne Schnell[2], Jeremy D. Collins[2], James C. Carr[2], Michael Markl[2, 3], Alex J. Barker[2]

[1]Radiology, Academic Medical Center, Amsterdam, Netherlands; [2]Radiology, Northwestern University, Chicago, IL, United States; [3]Biomedical Engineering, Northwestern University, Chicago, IL, United States

15:18 0882. Evidence of Early Left Ventricular Dysfunction in Bicuspid Aortic Valve Patients Identified by MRI-Based Wave Intensity Analysis

ISMRM MERIT AWARD magna cum laude

Nicholas Scott Burris[1], Petter Dyverfeldt[2], Michael D. Hope[1]
[1]Radiology, University of California San Francisco, San Francisco, CA, United States; [2]Center for Medical Image Science and Visualization, Linköping University, Linköping, Sweden

Breast Cancer: Clinical & Technical

Room 716 A/B 13:30-15:30 *Moderators:* Linda Moy, M.D. & Roberta M. Strigel, M.D., M.Sc.

13:30 Introduction

13:42 0883. Stimulated Echo Diffusion Tensor Imaging with Varying Diffusion Times as a Probe of Breast Tissue

ISMRM MERIT AWARD summa cum laude

Jose R. Teruel[1, 2], Gene Y. Cho[3, 4], Jason Ostenson[4], Melanie Moccaldi[5], Joon Lee[5], Pål E. Goa, [26], Tone F. Bathen[1], Sungheon G. Kim[3, 4], Linda Moy[4, 5], Eric E. Sigmund[3, 4]
[1]Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway; [2]St.Olavs Hospital, Trondheim, Norway; [3]Center for Advanced Imaging Innovation and Research (CAI2R), New York University School of Medicine, New York, NY, United States; [4]Bernard and Irene Schwartz Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States; [5]Cancer Institute, New York University Langone Medical Center, New York, NY, United States; [6]Department of Physics, Norwegian University of Science and Technology, Trondheim, Norway

13:54 0884. Breast Diffusion Weighted Imaging with Reduced Artifacts Using Multi-Band Spin Echo EPI

Patrick J. Bolan[1], Steen Moeller[1], Gregory J. Metzger[1], Edward J. Auerbach[1], Christophe Lenglet[1], Dingxin Wang, [12], Peter Kollasch[2], Vibhas Deshpande[2], Sudhir Ramanna[1], Michael T. Nelson[1], Kamil Ugurbil[1], Essa Yacoub[1]
[1]Radiology, University of Minnesota, Minneapolis, MN, United States; [2]Siemens Healthcare, Minneapolis, MN, United States

14:06 0885. High-Resolution Diffusion-Weighted Imaging of the Breast with Multiband 2D RF Pulses and a Generalized Parallel Imaging Reconstruction

Valentina Taviani[1], Marcus T. Alley[1], Suchandrima Banerjee[2], Bruce L. Daniel[1], Brian A. Hargreaves[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States

14:18 0886. Relative Enhanced Diffusivity (RED) as a Marker of Breast Tumor Microvasculature

Jose R. Teruel[1, 2], Pål E. Goa[3, 4], Torill E. Sjøbakk[1], Agnes Østlie[4], Hans E. Fjøsne[5, 6], Tone F. Bathen[1]
[1]Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway; [2]St.Olavs Hospital, Trondheim, Norway; [3]Physics, Norwegian University of Science and Technology, Trondheim, Norway; [4]Radiology, St.Olavs Hospital, Trondheim, Norway; [5]Cancer Research and Molecular Medicine, Norwegian University of Science and Technology, Trondheim, Norway; [6]Surgery, St.Olavs Hospital, Trondheim, Norway

14:30 0887. Texture Analysis of Parameter Maps in Breast MRI

Peter Gibbs[1], Martin Pickles[1], Lindsay Turnbull[1]
[1]Centre for MR Investigations, University of Hull, Hull, East Yorkshire, United Kingdom

14:42 0888. Robust Quantification of Background Parenchymal Enhancement (BPE) in Dynamic Contrast-Enhanced (DCE) MRI Breast Examinations

Araminta EW Ledger[1], Maria A. Schmidt[1], Marco Borri[1], Steven Allen[2], Elizabeth AM O'Flynn[2], Romney J. Pope[2], Erica D. Scurr[2], Nandita deSouza[1], Robin Wilson[2], Martin O. Leach[1]
[1]CR-UK Cancer Imaging Centre, The Institute of Cancer Research and Royal Marsden NHS Foundation Trust, Sutton, Surrey, United Kingdom; [2]Radiology, The Royal Marsden NHS Foundation Trust, Sutton, Surrey, United Kingdom

14:54 0889. Prognostic Value of MR Parameters Obtained Prior to the Initiation of Neoadjuvant Chemotherapy: A Comparison with Traditinal Prognostic Indicators

Martin D. Pickles[1], Peter Gibbs[1], Martin Lowry[1], Lindsay W. Turnbull[1]
[1]Centre for Magnetic Resonance Investigations, Hull York Medical School at University of Hull, Hull, East Yorkshire, United Kingdom

15:06 0890. 7T Breast MRI to Visualize Proliferative Characteristics of Breast Cancer Using DCE, DWI, and ^{31}P-MRS

Alexander M. Th. Schmitz[1], Wouter B. Veldhuis[1], Marian B.E. Menke-Pluijmers[2], Wybe J.M. van der Kemp[1], Tijl A. van der Velden[1], Marc C.J.M. Kock[3], Pieter J. Westenend[4], Dennis W.J. Klomp[1], Kenneth G.A. Gilhuijs[1]
[1]Department of Radiology/Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands; [2]Department of Surgery, Albert Schweitzer Hospital, Dordrecht, Netherlands; [3]Department of Radiology, Albert Schweitzer Hospital, Dordrecht, Netherlands; [4]Department of Pathology, Albert Schweitzer Hospital, Dordrecht, Netherlands

15:18 0891. Quantitative Sodium Imaging of Breast Tumors at 7 Tesla: Preliminary Results

ISMRM MERIT AWARD summa cum laude

Olgica Zaric[1], Katja Pinker - Domenig, Stefan Zbyn[1], Thomas Helbich, Alex Farr[2], Christian Singer[2], Siegfried Trattnig[1], Wolfgang Bogner[1]
[1]High Field MR Center, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria; [2]Gynecology Department, Medical University of Vienna, Vienna, Austria, Austria

Brain Oxygenation, Perfusion & Metabolic Rate

Constitution Hall 107 13:30-15:30 *Moderators:* Jeff F. Dunn, Ph.D. & T.B.A.

13:30 0892. Imaging Oxygen Extraction Fraction in the Visual Cortex During Functional Activation Using Turbo QUIXOTIC

ISMRM MERIT AWARD magna cum laude

Jeffrey N. Stout[1], Elfar Adalsteinsson[1,2], Bruce R. Rosen[3], Divya S. Bolar[3,4]
[1]Harvard-MIT Health Sciences and Technology, Institute of Medical Engineering and Science, Cambridge, MA, United States; [2]Department of Electrical Engineering and Computer Science, MIT, MA, United States; [3]Martinos Center for Biomedical Imaging, MGH/Harvard Medical School, MA, United States; [4]Department of Radiology, Massachusetts General Hospital, Boston, MA, United States

13:42 0893. Exploring Human Brain Oxidative Metabolism and Neurotransmitter Cycling Via Coupled 13C MRS at 7T

Vikram Jakkamsetti[1], Levi Good[1], Dorothy Kelly[1], Sergey Cheshkov[2], Karthik Rajasekaran[1], Dean Sherry[2], Juan Pascual[1], Craig Malloy[2], Ivan Dimitrov[2,3]
[1]Neurology and Neurotherapeutics, UT Southwestern Medical Center, Dallas, TX, United States; [2]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States; [3]Philips Medical Systems, Cleveland, OH, United States

13:54 0894. Optimization of Oxygen Extraction Fraction Mapping Using Joint Parametric Estimation

Youngkyoo Jung[1,2], Naeim Bahrami[2], Megan E. Johnston[2]
[1]Radiology, Wake Forest School of Medicine, Winston-Salem, NC, United States; [2]Biomedical Engineering, Wake Forest School of Medicine, Winston-Salem, NC, United States

14:06 0895. Quantitative and Simultaneous Imaging of $CMRO_2$, CBF and OEF in Resting Human Brain

Xiao-Hong Zhu[1], Hannes M. Wiesner[1], Byeong-Yeul Lee[1], Ming Lu[1], Kamil Ugurbil[1], Wei Chen[1]
[1]CMRR, Department of Radiology, University of Minnesota Medical School, Minneapolis, MN, United States

14:18 0896. Neurochemical and BOLD Responses in Activated Blob and Interblob Neuronal Populations Measured in the Human Visual Cortex at 7T

ISMRM MERIT AWARD magna cum laude

Petr Bednarik[1,2], Ivan Tkac[1], Federico Giove[3,4], Dinesh Deelchand[1], Lynn Eberly[1], Felipe Barreto[1,5], Silvia Mangia[1]
[1]University of Minnesota , Minneapolis, MN, United States; [2]Central European Institute of Technology, Masaryk University, Brno, Czech Republic; [3]MARBILab c/o Fondazione Santa Lucia, "Enrico Fermi" Centre, Rome, Italy; [4]", Department of Physics - G1 Group, University of Rome "La Sapienza", Rome, Italy; [5]Physics Department, University of Sao Paulo, Sao Paulo, Brazil

14:30 0897. Slower DMN, Faster Reaction: Coupling of Resting-State CBF and BOLD Oscillations in Specific Frequency Bands Predicts Vigilance Task Performance

ISMRM MERIT AWARD magna cum laude

Xiaopeng Song[1], Shaowen Qian[2], Kai Liu[2], Zhenyu Zhou[3], Gang Sun[2], Yijun Liu[1]
[1]Department of Biomedical Engineering, Peking University, Beijing, China; [2]Department of Medical Imaging, Jinan Military General Hospital, Shandong, China; [3]GE Health Care, Beijing, China

14:42 0898. Three-Dimensional Acquisition of Cerebral Blood Volume, Blood Flow and Blood Oxygenation-Weighted Responses During Functional Stimulation in a Single Scan

ISMRM MERIT AWARD summa cum laude

Ying Cheng[1,2], Qin Qin[1,3], Peter C. M. van Zijl[1,3], James J. Pekar[1,3], Jun Hua[1,3]

[1]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States; [2]Dept. of Biomedical Engineering, Johns Hopkins University, Baltimore, MD, United States; [3]Neurosection, Div. of MRI Research, Dept. of Radiology and Radiological Science, Johns Hopkins University, Baltimore, MD, United States

14:54 0899. Blood Oxygenation, CBF, OEF, and CMRO2 Changes During Hypercapnia and Hyperoxia Using PCASL and TRUST MRI

Jeroen C.W. Siero[1], Carlos C. Faraco[2], Alex Bhogal[1], Megan K. Strother[2], Peiying Liu[3], Hanzhang Lu[3], Jeroen Hendrikse[1], Manus J. Donahue[2]

[1]Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]Radiology and Radiological Sciences, Nashville, Vanderbilt University School of Medicine, TN, United States; [3]Radiology Advanced Imaging Research Center, UTSouthwestern Medical Center, TX, United States

15:06 0900. Temporal and Spatial Changes of BOLD Signal, CBF and CBV in the Activated Human Visual Cortex During Mild Hypoxia

ISMRM MERIT AWARD magna cum laude

Felipe Rodrigues Barreto[1], Silvia Mangia[2], Carlos Ernesto Garrido Salmon[3]

[1]Department of Physics, University of Sao Paulo, RIbeirao Preto, SP, Brazil; [2]Department of Radiology, CMRR, University of Minnesota, MN, United States; [3]Department of Physics, University of Sao Paulo, Ribeirao Preto, SP, Brazil

15:18 0901. Cerebral Blood Flow Is Mediated by Brain Cells Expressing Glucose Transporter 2

Hongxia Lei[1, 2], Frederic Preitner[3], Bernard Thorens[3], Rolf Gruetter[4, 5]

[1]AIT, Center for Biomedical Imaging (CIBM), Ecole Polytechnique Fédérale de Lausanne, Lausanne, Vaud, Switzerland; [2]University of Geneva, Geneva, Switzerland; [3]Center for Integrative Genomics (CIG), University of Lausanne, Lausanne, Vaud, Switzerland; [4]Laboratory for Functional and Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Vaud, Switzerland; [5]Department of Radiology, University of Lausanne, Lausanne, Vaud, Switzerland

Multiple Sclerosis 2

John Bassett Theatre 102 13:30-15:30 *Moderators:*T.B.A. & T.B.A.

13:30 0902. Prediction of Disease Course in Multiple Sclerosis Using Cortical Thinning Measurements at Baseline

Sushmita Datta[1], Koushik A. Govindarajan[1], Stacey S. Cofield[2], Gary R. Cutter[2], Fred D. Lublin[3], Jerry S. Wolinsky[4], Ponnada A. Narayana[1]

[1]Department of Diagnostic and Interventional Imaging, The University of Texas Health Science Center at Houston, Houston, TX, United States; [2]Department of Biostatistics, University of Alabama at Birmingham, Birmingham, AL, United States; [3]The Corinne Goldsmith Dickinson Center for Multiple Sclerosis, Mount Sinai School of Medicine, New York, New York, United States; [4]Department of Neurology, The University of Texas Health Science Center at Houston, Houston, TX, United States

13:42 0903. Iron and Non-Iron Related Pathological Features of Multiple Sclerosis Lesions Using Multiparametric 7T MRI

Sanjeev Chawla[1], Ilya Kister[2], Jens Wuerfel[3], E Mark Haacke[4], Tim Sinnecker[3], Jean Christophe Brisset[1], Friedemann Paul[3], Yulin Ge[1]

[1]Radiology, New York University Langone Medical Center, New York, NY, United States; [2]Neurology, New York University Langone Medical Center, New York, NY, United States; [3]Radiology, Universitätsmedizin Göttingen, Berlin, Germany; [4]Radiology, Wayne State University, Detroit, MI, United States

13:54 0904. Impact of Intra- And Juxta-Cortical Pathology on Cognitive Impairment in Multiple Sclerosis by Quantitative T_2* Mapping at 7 T MRI

Céline Louapre[1], Sindhuja T. Govindarajan[1], Costanza Gianni[1], Nancy Madigan[2], AS Nielsen[3], RP Kinkel[4], Caterina Mainero[1]

[1]AA. Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [2]Beth Israel Deaconess Medical Center, Boston, MA, United States; [3]Virginia Mason Medical Center, Seattle, WA, United States; [4]University of California San Diego, San Diego, CA, United States

14:06 0905. Can Myelin Water Imaging Differentiate Vasogenic Edema and Demyelinating Lesions in the Human Brain?

Eung Yeop Kim[1], Joon Yul Choi[2], Yoonho Nam[2], Se-Hong Oh[3], Jongho Lee[2]

[1]Department of Radiology, Gachon University Gil Medical Center, Incheon, Korea; [2]Department of Electrical and Computer Engineering, Seoul National University, Seoul, Korea; [3]Imaging Institute, Cleveland Clinic Foundation, Cleveland, OH, United States

14:18 0906. USPIO Contrast Enhanced MRI Study Monitoring Inflammatory Lesions in Brain of the Relapsing-Remitting Model of EAE in SJL/J Mice

Matthew Fronheiser[1], Jenny Xie[1], Elizabeth Heimrich[1], Adrienne Pena[1], Thomas Petrone[1], Daniel Kukral[1], Vojkan Susulic[1], Harold Malone[1], Patrick Chow[1], Shuyan Du[1], Feng Lu[1], Wendy Hayes[1], Haiying Tang[1]
[1]Bristol Myers Squibb, Princeton, NJ, United States

14:30 0907. Connectivity-Based Parcellation of the Thalamus in Multiple Sclerosis and Its Implications for Cognitive Impairment: A Multicenter Study
Elisabetta Pagani[1], Maria A. Rocca[1, 2], Alvino Bisecco[1], Laura Mancini[3], Christian Enzinger[4], Antonio Gallo[5], Hugo Vrenken[6], Maria Laura Stromillo[7], Massimiliano Copetti[1], David Thomas[3], Franz Fazekas[4], Gioacchino Tedeschi[5], Frederik Barkhof[6], Nicola De Stefano[7], Massimo Filippi[1, 2], for the MAGNIMS Network[8]
[1]Neuroimaging Research Unit, Institute of Experimental Neurology, Division of Neuroscience, San Raffaele Scientific Institute, Vita-Salute San Raffaele University, Milan, MI, Italy; [2]Department of Neurology, San Raffaele Scientific Institute, Vita-Salute San Raffaele University, Milan, MI, Italy; [3]UCLH NHS Foundation Trust, National Hospital for Neurology and Neurosurgery,, London, UK, United Kingdom; [4]Department of Neurology, Medical University of Graz, Graz, A, Austria; [5]MRI Center “SUN-FISM", Second University of Naples, Naples, NA, Italy; [6]Department of Radiology, VU University Medical Centre, Amsterdam, Netherlands, Netherlands; [7]Department of Neurological and Behavioral Sciences, University of Siena, Siena, SI, Italy; [8]EU, EU, Italy

14:42 0908. Hippocampal-Related Memory Network in Multiple Sclerosis: A Structural Connectivity Analysis
Elisabetta Pagani[1], Maria A. Rocca[1, 2], Sara Llufriu[1, 3], Gianna Carla Riccitelli[1], Bruno Colombo[2], Mariaemma Rodegher[2], Andrea Falini[4], Giancarlo Comi[2], Massimo Filippi[1, 2]
[1]Neuroimaging Research Unit, Institute of Experimental Neurology, Division of Neuroscience, San Raffaele Scientific Institute, Vita-Salute San Raffaele University, Milan, MI, Italy; [2]Department of Neurology, San Raffaele Scientific Institute, Vita-Salute San Raffaele University, Milan, MI, Italy; [3]Hospital Clinic Barcelona, Barcelona, E, Spain; [4]Department of Neuroradiology, San Raffaele Scientific Institute, Vita-Salute San Raffaele University, Milan, MI, Italy

14:54 0909. Histological Metrics Confirm Microstructural Characteristics of NODDI Indices in Multiple Sclerosis Spinal Cord
ISMRM MERIT AWARD magna cum laude
Francesco Grussu[1], Torben Schneider[1], Richard L. Yates[2], Mohamed Tachrount[3], Jia Newcombe[4], Hui Zhang[5], Daniel C. Alexander[5], Gabriele C. DeLuca[2], Claudia A. M. Wheeler-Kingshott[1]
[1]NMR Research Unit, Department of Neuroinflammation, Queen Square MS Centre, UCL Institute of Neurology, London, England, United Kingdom; [2]Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, England, United Kingdom; [3]Department of Brain Repair and Rehabilitation, UCL Institute of Neurology, London, England, United Kingdom; [4]NeuroResource, UCL Institute of Neurology, London, England, United Kingdom; [5]Department of Computer Science and Centre for Medical Image Computing, University College London, London, England, United Kingdom

15:06 0910. Quantitatively Characterize Pathological Compositions for Different Types of Multiple Sclerosis Lesion
Yong Wang[1, 2], Peng Sun[1], Qing Wang[1], Kathryn Trinkaus[3], Robert T. Naismith[4], Robert E. Schmidt[4], Anne H. Cross, [24], Sheng-Kwei Song[1, 2]
[1]Radiology, Washington University in St. Louis, Saint Louis, MO, United States; [2]Hope Center for neurological Disorders, Washington University in St. Louis, Saint Louis, MO, United States; [3]Biostatistics, Washington University in St. Louis, Saint Louis, MO, United States; [4]Neurology, Washington University in St. Louis, Saint Louis, MO, United States

15:18 0911. BOLD, Blood Flow and Hypercapnic Challenge Reveals Cerebrovascular Decoupling in Multiple Sclerosis
Mark J. Lowe[1], Wanyong Shin[1], Lael Stone[2], Robert Bermel[2], Micheal D. Phillips[1]
[1]Imaging Institute, Cleveland Clinic, Cleveland, OH, United States; [2]Neurologic Insititute, Cleveland Clinic, Cleveland, OH, United States

Educational Course
Orthopedic Surgery: What Do I need to Know Before & After? Part 2: Soft Tissue

*Organizers:*Garry E. Gold, M.D., Richard Kijowski, M.D., William B. Morrison, M.D., & Ravinder R. Regatte, Ph.D.
Room 718 A 13:30-15:30 *Moderators:*Eric Y. Chang, M.D. & Lynne S. Steinbach, M.D.

13:30 ACL Reconstruction: Techniques & Failure
Lynne S. Steinbach

14:00 Meniscal Repair & Replacement
Hollis G. Potter

14:30 **Rotator Cuff Repair: Old & New Techniques**
Miriam A. Bredella

15:00 **Labral Repair of the Shoulder: Anatomic & Non-Anatomic**
Luis S. Beltran

15:30 **Adjournment & Meet the Teachers**

Educational Course
Game Show: Artifacts, Eh?

Organizers: Christopher M. Collins, Ph.D. & Alexey Samsonov, Ph.D.
Room 718 B 13:30-15:30 *Moderators:* Walter F. Block, Ph.D. & Nicole E. Seiberlich, Ph.D.

13:30 **Artifact Identification & Elimination Game Show**
Thoralf Niendorf
Nicole Seiberlich
Walter F. Block

15:30 **Adjournment & Meet the Teachers**

Hands-On Workshop 4 – Siemens Healthcare GmbH

Room 711 13:30-15:30 *(no CME credit)*

Hands-On Workshop 4 - GE Healthcare

Room 703 13:30-15:30 *(no CME credit)*

Hands-On Workshop 4 - Philips Healthcare

Room 707 13:30-15:30 *(no CME credit)*

Study Group Session
X-Nuclei Imaging

Reception Hall 104 BCD 16:00-18:00 *(no CME credit)*

RF Pulse Design

Room 701 A 16:00-18:00
Moderators: Charles H. Cunningham, Ph.D. & T.B.A.

16:00 **0912.** **Hyperbolic Secant RF Pulses for Simultaneous Multi-Slice Excitation with Reduced Susceptibility Artifacts**
Mehran Baboli[1], Bastien Guerin[2], Lawrence Wald[2], V. Andrew Stenger[1]
[1]Medicine, University of Hawaii, Honolulu, HI, United States; [2]Radiology, Massachusetts General Hospital, MA, United States

16:12 **0913.** **Root-Flipped Multiband Radiofrequency Pulses**
ISMRM MERIT AWARD magna cum laude
Anuj Sharma[1], Michael Lustig[2], William A. Grissom[1]
[1]Biomedical Engineering, Vanderbilt University, Nashville, TN, United States; [2]EECS, University of California, Berkeley, CA, United States

16:24 **0914.** **A Wavelet-Based Optimization for RF Pulse Design Applied to Multiband Imaging at 7T**
ISMRM MERIT AWARD magna cum laude
Andrew M. Huettner[1], Nikolai J. Mickevicius[1], Ali Ersoz[1], Kevin M. Koch[2], L.Tugan Muftuler[3], Andrew S. Nencka[1]
[1]Biophysics, The Medical College of Wisconsin, Milwaukee, WI, United States; [2]Biophysics and Radiology, The Medical College of Wisconsin, Milwaukee, WI, United States; [3]Neurosurgery, The Medical College of Wisconsin, Milwaukee, WI, United States

16:36 **0915. RF Pulse Design for Simultaneous Multislice Excitation with Highly Reduced B1 Peak Amplitude**

ISMRM MERIT AWARD magna cum laude

Christoph Stefan Aigner[1], Christian Clason[2], Armin Rund[3], Rudolf Stollberger[1]
[1]Institute of Medical Engineering, Graz University of Technology, Graz, Austria; [2]Faculty of Mathematics, University of Duisburg-Essen, Essen, Germany; [3]Institute for Mathematics and Scientific Computing, University of Graz, Graz, Austria

16:48 **0916. HENSIR: Hadamard Encoded Simultaneous Image Refocusing**

Nikolai J. Mickevicius[1], Eric S. Paulson[2]
[1]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Radiation Oncology, Medical College of Wisconsin, Milwaukee, WI, United States

17:00 **0917. Transmit Array Spatial Encoding (TRASE) with Broadband WURST Pulses for Robust Spatial Encoding in Inhomogeneous B0 Fields**

Jason P. Stockmann[1, 2], Clarissa Cooley,[3], Mathieu Sarracanie[1, 2], Matthew S. Rosen[1, 2], Lawrence L. Wald[1, 3]
[1]A. A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States; [2]Department of Physics, Harvard University, Cambridge, MA, United States; [3]Harvard Medical School, Boston, MA, United States

17:12 **0918. A Parallel Transmit Spectral-Spatial Pulse Design Method for Ultra-High Field MRS Combining LSQR and Optimal Control Based Optimization**

Tingting Shao[1], Yun Zhang[2], Nikolai Avdievich[1], Steffen Glaser[2], Anke Henning[1, 3]
[1]Max Planck Institute for Biological Cybernetics, Tübingen, Baden-Württemberg, Germany; [2]Department of Chemistry, Technical University of Munich, Garching, Germany; [3]Institute for Biomedical Engineering, UZH and ETH Zurich, Zurich, Switzerland

17:24 **0919. A Spectral-Spatial Pulse for Improved Signal Recovery in the Small-Tip Fast Recovery (STFR) Sequence**

ISMRM MERIT AWARD magna cum laude

Sydney N. Williams[1], Hao Sun[2], Jon-Fredrik Nielsen[1], Jeffrey A. Fessler[2], Douglas C. Noll[1]
[1]Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States; [2]Electrical Engineering, University of Michigan, Ann Arbor, MI, United States

17:36 **0920. Impact of RF-Shimming on the Uniformity and Specific Absorption Rate of Spin-Echo Imaging at 7 Tesla**

Filiz Yetisir[1], Bastien Guerin[2], Benedikt A. Poser[3], Lawrence L. Wald[2, 4], Elfar Adalsteinsson[1, 4]
[1]Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA, United States; [2]Dept. of Radiology, Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [3]Faculty of Psychology and Neuroscience, Maastricht University, Maastricht, Netherlands; [4]Harvard-MIT Division of Health Sciences Technology, Institute of Medical Engineering and Science, Cambridge, MA, United States

17:48 **0921. Delay-Insensitive Variable-Rate Selective Excitation (DIVERSE)**

Adam B. Kerr[1], Kangrong Zhu[1], Matthew J. Middione[2], Hua Wu[3], Robert F. Dougherty[3], John M. Pauly[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Applied Sciences Laboratory West, GE Healthcare, Menlo Park, CA, United States; [3]Center for Cognitive and Neurobiological Imaging, Stanford University, Stanford, CA, United States

Methods of Magnetic Susceptibility & Electromagnetic Tissue Property Mapping

Room 701 B 16:00-18:00 *Moderators:* Dong-Hyun Kim, Ph.D. & Ferdinand Schweser, Ph.D.

16:00 **0922. Rapid Multi-Orientation Susceptibility Mapping with Wave-CAIPI**

ISMRM MERIT AWARD summa cum laude

Berkin Bilgic[1], Luke Xie[2], Russell Dibb[2], Christian Langkammer[1], Aysegul Mutluay[1], Huihui Ye[1], Jonathan R. Polimeni[1], Chunlei Liu[2], Lawrence L. Wald[1], Kawin Setsompop[1]
[1]Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [2]Radiology, Duke University Medical Center, Durham, NC, United States

16:12 **0923. Quantitative Susceptibility Mapping (QSM) at 7 Tesla:Correction of Induced Field Fluctuations with Real-Time Feedback Field Control**

PINAR SENAY ÖZBAY[1, 2], Yolanda Dürst[2], Klaas Paul Prüssmann[2], Daniel Nanz[1]
[1]Department of Radiology, University Hospital Zürich, Zürich, Switzerland; [2]Institute of Biomedical Engineering, ETH Zürich, Zürich, Switzerland

16:24 **0924. Temporal-Variance Weighted P-Space Multipole Frequency Mapping**

ISMRM MERIT AWARD magna cum laude

Kyle S. Decker[1, 2], Chunlei Liu[3, 4]

[1]Center for In Vivo Microscopy, Duke University, Durham, NC, United States; [2]Biomedical Engineering, Duke University, Durham, NC, United States; [3]Brain Imaging and Analysis Center, Duke University, Durham, NC, United States; [4]Radiology, Duke University, Durham, NC, United States

16:36 0925. B_0-Orientation Dependent Susceptibility-Induced White Matter Contrast in the Human Brainstem
Manisha Aggarwal[1], Xu Li[2], Susumu Mori[1, 2], Peter C. M. van Zijl[1, 2]
[1]Department of Radiology, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]F.M. Kirby Research Center, Kennedy Krieger Institute, Baltimore, MD, United States

16:48 0926. iLSQR: A Quantitative Susceptibility Mapping Method Provided by STI Suite V2.12
Wei Li[1, 2], Nian Wang[3], Bing Wu[4], Timothy Q. Duong[1], Chunlei Liu[3, 5]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Ophthalmology, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [3]Brain Imaging and Analysis Center, Duke University, Durham, NC, United States; [4]GE Healthcare, Beijing, China; [5]Radiology, Duke University, Durham, NC, United States

17:00 0927. Improving Estimation of Small-Vein Susceptibility by Using a Pre-Estimated Susceptibility Map
Ryota Sato[1], Toru Shirai[1], Yo Taniguchi[1], Takenori Murase[2], Yoshitaka Bito[2], Hisaaki Ochi[1]
[1]Central Research Laboratory, Hitachi, Ltd., Kokubunji, Tokyo, Japan; [2]Hitachi Medical Corporation, Chiba, Japan

17:12 0928. Vector Model for Quantitative Susceptibility Mapping (Vector QSM)
Tian Liu[1, 2], Cynthia Wisnieff[2, 3], Dong Zhou[2], Pascal Spincemaille[2], Yi Wang[2, 3]
[1]MedImageMetric LLC, New York, NY, United States; [2]Radiology, Weill Cornell Medical College, New York, NY, United States; [3]Biomedical Engineering, Cornell University, Ithaca, NY, United States

17:24 0929. Human Cortical Surface Maps of Three Quantitative Imaging Parameters:R_1, R_2^* and Magnetic Susceptibility
ISMRM MERIT AWARD summa cum laude
Diana Khabipova[1], Rolf Gruetter[1, 2], José P. Marques[1]
[1]CIBM, Lausanne, Vaud, Switzerland; [2]Radiology, University of Lausanne and Geneva, Vaud, Switzerland

17:36 0930. Feasibility of Conductivity Imaging Based on Slice Selection and Readout Gradient Induced Eddy-Currents
Omer Faruk Oran[1], Necip Gurler[1], Yusuf Ziya Ider[1]
[1]Electrical and Electronics Engineering, Bilkent University, Ankara, Turkey

17:48 0931. MR Guidance of TMS for a Patient Specific Treatment Plan:MR Based TMS Field Measurements and Electromagnetic Simulations
ISMRM MERIT AWARD magna cum laude
S. Mandija[1], P. Petrov[2], S.W.F. Neggers[2], A.D. de Weijer[3], P.R. Luijten[1], C.A.T. van den Berg[1]
[1]Imaging Division, UMC Utrecht, Utrecht, Netherlands; [2]Brain Center Rudolf Magnus, UMC Utrecht, Utrecht, Netherlands; [3]FMRIB Center, University of Oxford, Oxford, United Kingdom

Bone & UTE

Room 714 A/B 16:00-18:00 *Moderators:* Jiang Du, Ph.D. & T.B.A.

16:00 0932. Bound Bone Water Density Is a Surrogate Measurement of Organic Matrix Density
ISMRM MERIT AWARD magna cum laude
Alan C. Seifert[1], Cheng Li[1], Suzanne L. Wehrli[2], Felix W. Wehrli[1]
[1]University of Pennsylvania, Philadelphia, PA, United States; [2]Children's Hospital of Philadelphia, Philadelphia, PA, United States

16:12 0933. *In Vivo* Imaging of Bound and Pore Water in Tibia and Femur Using 3D Cones Sequences
ISMRM MERIT AWARD magna cum laude
Jun Chen[1], Michael Carl[2], Hongda Shao[1], Soorena Azam Zanganeh[1], Eric Chang[1, 3], Christine B. Chung[1, 3], Graeme M. Bydder[1], Jiang Du[1]
[1]Radiology, University of California, San Diego, CA, United States; [2]GE Healthcare, San Diego, CA, United States; [3]Department of Radiology, VA San Diego Healthcare System, San Diego, CA, United States

16:24 0934. Bone Marrow Fat Quantification in Calcaneus. Why Not?
Silvia Capuani[1, 2], Giulia Di Pietro[2, 3], Guglielmo Manenti[4], Vincenzo Vinicola[5], Marco Bozzali[6], Umberto Tarantino[7]

[1]Physics Department, CNR-IPCF Roma Sapienza University of Rome, Rome, Italy, Italy; [2]Center for Life NanoScience@LaSapienza, Istituto Italiano di Tecnologia, Rome, Italy, Italy; [3]Enrico Fermi Center, Rome, Italy, Italy; [4]Department of Diagnostic Imaging and Interventional Radiology, "Tor Vergata" University of Rome, Rome, Italy, Italy; [5]4Rehabilitation Hospital IRCCS Santa Lucia Foundation, Rome, Italy, Rome, Italy, Italy; [6]Neuroimaging Laboratory Santa Lucia Foundation, Rome, Italy, Italy; [7]5Department of Orthopaedics and Traumatology, PTV Foundation, "Tor Vergata" University of Rome, Rome, Italy, Italy

16:36 0935. UTE Imaging with Simultaneous Water and Fat Signal Suppression Using an Efficient Multi-Shot Inversion Recovery Preparation
Michael Carl[1], Jiang Du[2], Graeme M. Bydder[2]
[1]GE Healthcare, San Diego, CA, United States; [2]UCSD, CA, United States

16:48 0936. Dental MRI Can Detect Micro-Cracks
Djaudat Idiyatullin[1], Michael Garwood[1], Donald Nixdorf[2]
[1]CMRR, Radiology Department, University of Minnesota, Minneapolis, Minneaota, United States; [2]Division of TMD & Orofacial Pain and Department of Neurology, University of Minnesota, Minneapolis, Minneaota, United States

17:00 0937. Feasibility of Ultrashort Echo Time (UTE) MR Imaging at 1.5 T in the Diagnosis of Skull Fractures
Hao Wu[1], Shuguang Chu[1], Huaping Sun[1], Yumin Zhong[2], Quanmin Nie[3], Liemei Guo[3], Xi Yang[3], Hong Zhang[2], Yi Lin[2], Weibo Chen[4], He Wang[5], Ming Zhu[2]
[1]Department of Radiology, HuaShan Hospital North, Fudan University, Baoshan District, Shanghai, China; [2]Department of Radiology, Shanghai Children¡¯s Medical Center, Shanghai Jiao Tong University School of Medicine, Pudong New District, Shanghai, China; [3]Department of Neurosurgery, Ren Ji Hospital, Shanghai Jiao Tong University School of Medicine, Pudong New District, Shanghai, China; [4]Philips Healthcare, Shanghai, China; [5]Philips Research China, Shanghai, China

17:12 0938. Quantitative Susceptibility Mapping of Bone Using Ultra-Short TE Sequence
ISMRM MERIT AWARD magna cum laude
Alexey V. Dimov[1, 2], Zhe Liu[1, 2], Pascal Spincemaille[2], Jiang Du[3], Yi Wang[1, 2]
[1]Department of Biomedical Engineering, Cornell University, Ithaca, NY, United States; [2]Radiology Department, Weill Cornell Medical College, New York, United States; [3]University of California (San Diego), CA, United States

17:24 0939. MRS-Based Vertebral Bone Marrow Fat Quantification Using Prior Fat Spectrum Characterization and T2 Correction
ISMRM MERIT AWARD magna cum laude
Michael Dieckmeyer[1], Stefan Ruschke[1], Christian Cordes[1], Samuel Paran Yap[1], Hendrik Kooijman[2], Hans Hauner[1], Ernst J. Rummeny[1], Jan S. Bauer[1], Thomas Baum[1], Dimitrios C. Karampinos[1]
[1]Technische Universität München, Munich, Germany; [2]Philips Healthcare, Germany

17:36 0940. Dual Echo UTE Imaging with Rescaled Subtraction (DUTE-RS): Scaling Factor Optimization Study
Yanchun Zhu[1], Jiang Du[2], Qun He[2], Shanglian Bao[3], Song Gao[3], Guoru Zhao[1], Yaoqin Xie[1]
[1]Institue of Biomedical and Health Engineering, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, Guangdong, China; [2]Department of Radiology, University of California, CA, United States; [3]Beijing City Key Lab of Medical Physics and Engineering, Peking University, Beijing, China

17:48 0941. Selective Musculoskeletal MRI Using ZTE Imaging with Long-T2 Suppression
Markus Weiger[1], Mingming Wu, [12], Moritz Christoph Wurnig[3], David Kenkel[3], Andreas Boss[3], Gustav Andreisek[3], Klaas Paul Pruessmann[1]
[1]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [2]Institute of Biomedical Engineering, Karlsruhe Institute of Technology, Karlsruhe, Germany; [3]Institute for Diagnostic and Interventional Radiology, University Hospital Zurich, Zurich, Switzerland

Abdomen & Pelvis

Room 716 A/B 16:00-18:00 *Moderators:* Alessandro Furlan, M.D. & Ferdia A. Gallagher, Ph.D., MRCP, FRCR

16:00 0942. Prostate MRSI Predicts Treatment Failure After Radical Prostatectomy
Kristen Zakian[1], William Hatfield[2], Omer Aras[2], Kun Cao[3], Derya Yakar[4], Debra Goldman[2], Chaya Moskowitz[2], Amita Shukla-Dave[2], Yousef Mazaheri Tehrani[2], Samson Fine[2], James Eastham[2], Hedvig Hricak[2]
[1]Memorial Sloan-Kettering Cancer Center, New York, NY, United States; [2]MSKCC, NY, United States; [3]Peking University Cancer Hospital, Beijing, China; [4]Radboud University of Nijmegen Medical Centre, Nijmegen, Netherlands

16:12 0943. X-Ray Fluorescence Microscopy Imaging of the Normal Mouse Prostate Reveals That Intravenously Administered Gadolinium Enters the Lumen of the Prostatic Glands

Devkumar Mustafi[1], Sophie-Charlotte Gleber[2], Urszula Dougherty[3], Marta Zamora[1], Tatjana Antic[4], Stefan Vogt[2], Gregory S. Karczmar[1], Aytekin Oto[1]

[1]Radiology, The University of Chicago, Chicago, IL, United States; [2]Advanced Proton Source, Argonne National Laboratory, Lemont, IL, United States; [3]Medicine, The University of Chicago, Chicago, IL, United States; [4]Pathology, The University of Chicago, Chicago, IL, United States

16:24 0944. Two-Compartment T2 Decay for Prostate Cancer Diagnosis

ISMRM MERIT AWARD magna cum laude

Shiyang Wang[1], Harsh Agarwal[2], Gregory S. Karczmar[1], Aytek Oto[1]

[1]Radiology, University of Chicago, Chicago, IL, United States; [2]Clinical Research Development, Philips Research North America, Briarcliff, Manor, NY, United States

16:36 0945. Gestational Age Dependent Increase in Placental Perfusion Quantified Using MRI

ISMRM MERIT AWARD summa cum laude

Brijesh Kumar Yadav[1, 2], Jaladhar Neelavalli[1, 2], Uday Krishnamurthy[1, 2], Yimin Shen[2], Gabor Szalai[3], Bing Wang[3], Tinnakorn Chaiworapongsa[3, 4], Edgar Hernandez Andrade, [34], Nandor Gabor Than, [34], Ewart Mark Haacke[1, 2], Roberto Romero[3]

[1]Department of Biomedical Engineering, Wayne State University, Detroit, MI, United States; [2]Department of Radiology, Wayne State University, Detroit, MI, United States; [3]Perinatology Research Branch, NICHD, NIH, DHHS, Wayne State University, Detroit, MI, United States; [4]Department of Obstetrics and Gynecology, Wayne State University, Detroit, MI, United States

16:48 0946. Free Breathing 3D Abdominal T_1 Mapping with 3D Golden Angle Through-Time Spiral GRAPPA

ISMRM MERIT AWARD magna cum laude

Wei-Ching Lo[1], Yong Chen[2], Jesse I. Hamilton[1], Dan Ma[1], Yun Jiang[1], Katherine L. Wright[1], Mark A. Griswold[1, 2], Vikas Gulani[1, 2], Nicole Seiberlich[1]

[1]Dept. of Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Dept. of Radiology, University Hospitals of Cleveland and Case Western Reserve University, Cleveland, OH, United States

17:00 0947. Free-Breathing Artifact-Free Liver Imaging at 3T Incorporating Phase-Cycled TrueFISP and Motion Correction

Xiaoming Bi[1], Yutaka Natsuaki[1], Kevin Johnson[2], Gerhard Laub[3]

[1]Siemens Healthcare, Los Angeles, CA, United States; [2]Siemens Healthcare, Tucson, AZ, United States; [3]Siemens Healthcare, San Francisco, CA, United States

17:12 0948. Single-Shot Fast Spin Echo of Targeted Regions with Variable Refocusing Flip Angles and Quadratic Phase Pulses for Outer Volume Suppression

ISMRM MERIT AWARD summa cum laude

Valentina Taviani[1], Daniel Litwiller[2], Andreas M. Loening[1], Manojkumar Saranathan[1], Brian A. Hargreaves[1], Shreyas S. Vasanawala[1]

[1]Radiology, Stanford University, Stanford, CA, United States; [2]GE Healthcare, Rochester, MN, United States

17:24 0949. Large FOV ZTE Imaging in Abdomen on a Standard Clinical Scanner

Jouke Smink[1], Marco Nijenhuis[1], Jan P. Groen[1]

[1]Philips Healthcare, Best, Netherlands

17:36 0950. MRI Fat-Water Separation Models: Correlation with CT Hounsfield Units in Human Subcutaneous White Adipose Tissue

ISMRM MERIT AWARD magna cum laude

Aliya Gifford[1, 2], Theodore F. Towse[1, 3], Brian Welch[1, 4]

[1]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [2]Chemical and Physical Biology Program, Vanderbilt University, Nashville, TN, United States; [3]Department of Physical Medicine and Rehabilitation, Vanderbilt University School of Medicine, Nashville, TN, United States; [4]Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States

17:48 0951. *In Vivo* MRI Assessment of Hepato-Splenic Disease in a Murine Model of Schistosmiasis

Brice Masi[1, 2], Teodora-Adriana Perles-Barbacaru[3], Caroline Laprie[4], Helia Dessein[1, 2], Monique Bernard[3], Alain Dessein[1, 2], Angèle Viola[3]

[1]INSERM U906, Marseille, France; [2]GIMP UMR_S 906, Aix-Marseille Université, Marseille, France; [3]CRMBM UMR CNRS 7339, Marseille, France; [4]Laboratoire VET-HISTO, Marseille, France

Diffusion Acquisition

Constitution Hall 107 16:00-18:00 *Moderators:* Rita G. Nunes, D. Phil. & David A. Porter, Ph.D.

16:00 0952. Framework for Comparing Relative SNR and SNR Efficiency of Diffusion Weighted Sequences in Neuro-Imaging

Benjamin Fürsich[1, 2], Tim Sprenger[1, 2], Axel Haase[1], Marion I. Menzel[2]
[1]IMETUM, Technical University, Munich, Bavaria, Germany; [2]GE Global Research, Munich, Germany

16:12 0953. B1 Insensitive Zoomed FOV Imaging

Zhigang Wu[1], Jing Zhang[1], Wenxin Fang[1], Feng Huang[1]
[1]Philips Healthcare (Suzhou), Suzhou, China

16:24 0954. High Resolution DTI Using Dual-Density Spiral for Efficient Sampling and Reduced Off-Resonance Artifacts

ISMRM MERIT AWARD magna cum laude

Xiaodong Ma[1], Zhe Zhang[1], Hui Zhang[1], Bida Zhang[2], Sheng Fang[3], Hua Guo[1]
[1]Center for Biomedical Imaging Research, Department of Biomedical Engineering, School of Medicine, Tsinghua University, Beijing, China; [2]Healthcare Department, Philips Research China, Shanghai, China; [3]Institute of nuclear and new energy technology, Tsinghua University, Beijing, China

16:36 0955. High-Resolution Single-Shot Spiral Imaging Using Magnetic Field Monitoring and Its Application to Diffusion Weighted MRI

Bertram J. Wilm[1, 2], Christoph Barmet[1, 2], Simon Gross[1], Lars Kasper[1], Johanna Vannesjo[1], Maximilian Haeberlin[1], Benjamin Dietrich[1], David Brunner[1], Thomas Schmid[1], Klaas P. Pruessmann[1]
[1]Institute for Biomedical Engineering, University & ETH, Zurich, Switzerland; [2]Skope Magnetic Resonance Technologies, Zurich, Switzerland

16:48 0956. How to Suppress the Contribution from Pseudo-Diffusion in Oscillating Gradient Diffusion MRI

ISMRM MERIT AWARD summa cum laude

Dan Wu[1], Jiangyang Zhang[2]
[1]Biomedical Engineering, Johns Hopkins University School of Medicine, BALTIMORE, MD, United States; [2]Radiology, Johns Hopkins University School of Medicine, MD, United States

17:00 0957. Double Oscillating Diffusion Encoding (DODE) Augments Microscopic Anisotropy Contrast

Noam Shemesh[1], Andrada Ianuş[2], Daniel C. Alexander[2], Ivana Drobnjak[2]
[1]Champalimaud Neuroscience Programme, Champalimaud Center for the Unknown, Lisbon, Portugal; [2]Center for Medical Image Computing, Department of Computer Science,, University College London, London, United Kingdom

17:12 0958. Single-Spin Echo Multiband Diffusion Imaging with Slice Select Gradient Reversal

Matthew J. Middione[1], Hua Wu[2], Robert F. Dougherty[2], Kangrong Zhu[3], Adam B. Kerr[3], John M. Pauly[3]
[1]Applied Sciences Laboratory West, GE Healthcare, Meno Park, CA, United States; [2]CNI, Stanford University, Stanford, CA, United States; [3]Electrical Engineering, Stanford University, Stanford, CA, United States

17:24 0959. Diffusion-Weighted Readout-Segmented EPI Using PINS Simultaneous Multislice Imaging

ISMRM MERIT AWARD magna cum laude

Peter J. Koopmans[1], Robert Frost[1], David A. Porter[2], Wenchuan Wu[1], Peter Jezzard[1], Karla L. Miller[1], Markus Barth[3]
[1]FMRIB Centre, Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, United Kingdom; [2]Institute for Medical Image Computing, Fraunhofer MEVIS, Bremen, Germany; [3]Centre for Advanced Imaging, The University of Queensland, Brisbane, Australia

17:36 0960. Correction of 3D Motion Induced Artifacts in Multi-Shot Diffusion Imaging Using Projection Onto Convex Sets Based Multiplexed Sensitivity-Encoding MRI (POCSMUSE)

ISMRM MERIT AWARD magna cum laude

Mei-Lan Chu[1, 2], Shayan Guhaniyogi[1], Hing-Chiu Chang[1], Nan-kuei Chen[1]
[1]Brain Imaging and Analysis Center, Duke University Medical Center, Durham, NC, United States; [2]Graduate Institute of Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan

17:48 0961. Efficient Large Scale Motion Compensation for Multi-Shot Diffusion-Weighted Imaging
Zhongbiao Xu[1], Zhigang Wu[2], Wufan Chen[1], Yanqiu Feng[1], Feng Huang[2], Wenxing Fang[2], Jing Zhang[2]
[1]Guangdong Provincial Key Laboratory of Medical Image Processing, School of Biomedical Engineering, Southern Medical University, Guangzhou, Guangdong, China; [2]Philips Healthcare (Suzhou) CO.LTD, Suzhou, Jiangsu, China

Normal Brain Anatomy & Morphometry

John Bassett Theatre 102 16:00-18:00 *Moderators:* Andrew L. Alexander, Ph.D. & David J. Mikulis, M.D.

16:00 0962. Influence of T1 Contrast and Resolution on Myelinated Cortical Thickness at 7 Tesla
Pierre-Louis Bazin[1], Christine Lucas Tardif[1], Arno Villringer[1], Nicholas Bock[2]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; [2]McMaster University, Ontario, Canada

16:12 0963. Enhanced T1-Weighted Myelin Contrast Across Lamina at 7T; *In-Vivo*, *Ex-Vivo*, and Histology
Alessio Fracasso[1], Susanne J. van Veluw[2], Fredy Visser[3, 4], Jaco JM Zwanenburg[4], Serge O. Dumoulin[1], Natalia Petridou[4]
[1]Experimental Psychology, Helmholtz institute, Utrecht University, Utrecht, Netherlands; [2]Neurology, Brain Center Rudolf Magnus, University Medical Center, Utrecht, Netherlands; [3]Philips Medical Systems, Best, Netherlands; [4]Radiology, Imaging Division, University Medical Center, Utrecht, Netherlands

16:24 0964. MR Morphometry of Myeloarchitecture for *In-Vivo* Cortical Mapping
ISMRM MERIT AWARD magna cum laude
Christine Lucas Tardif[1], Nicholas A. Bock[2], Arno Villringer[1], Pierre-Louis Bazin[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Saxony, Germany; [2]McMaster University, Hamilton, Ontario, Canada

16:36 0965. Effect of Hypobaric Pressure on MRI Parameters, Including B0, T2, T2*, and T1
Eric R. Muir[1], Damon P. Cardenas[1], Timothy Q. Duong[1]
[1]Research Imaging Institute, University of Texas Health Science Center, San Antonio, TX, United States

16:48 0966. Connectivity-Based Atlas of Human Brain White Matter in ICBM-152 Space.
ISMRM MERIT AWARD summa cum laude
Anna Varentsova[1], Shengwei Zhang[2], Ekaterina Shanina[1], Konstantinos Arfanakis[2, 3]
[1]Physics Department, Illinois Institute of Technology, Chicago, IL, United States; [2]Department of Biomedical Engineering, Illinois Institute of Technology, Chicago, IL, United States; [3]Rush Alzheimer's Disease Center, Rush University, Chicago, IL, United States

17:00 0967. Arcuate Fasciculus Delineation by Means of Diffusion Compartment Imaging Based Tractography
Xavier Tomas-Fernandez[1], Benoit Scherrer[1], Catherine Wan[1], Simon K. Warfield[1]
[1]Boston Children's Hospital, Boston, MA, United States

17:12 0968. The Number of Subjects Needed to Detect a Change in White Matter Microstructure Depends on the Pathway in Question
ISMRM MERIT AWARD magna cum laude
Sonya Bells[1], C John Evans[1], Derek K. Jones[1]
[1]School of Psychology, CUBRIC, Cardiff, Wales, United Kingdom

17:24 0969. Investigating Variability of Brain Anatomy Using Three Common Mouse Strains
Jan Scholz[1], Matthijs van Eede[1], Jason P. Lerch[1, 2], Mark Henkelman[1, 3]
[1]Mouse Imaging Centre, Hospital for Sick Children, Toronto, ON, Canada; [2]Medical Biophysics, University of Toronto, Toronto, ON, Canada; [3]Medical Biophysics, University of Toronto, ON, Canada

17:36 0970. *In Vivo* High Resolution Imaging of the Mouse Neurovasculature
ISMRM MERIT AWARD magna cum laude
Jérémie Pierre Fouquet[1], Réjean Lebel[1], Luc Tremblay[1], Martin Lepage[1]
[1]CIMS, Université de Sherbrooke, Sherbrooke, QC, Canada

17:48 0971. Initial Human Imaging Experience with a Head-Only Gradient System Utilizing 80 MT/m and 500 T/m/s
John Huston III[1], Shengzhen Tao[1], Joshua D. Trzasko[1], Paul T. Weavers[1], Yunhong Shu[1], Erin Gray[1], Seung-Kyun Lee[2], Jean-Baptiste Mathieu[2], Christopher J. Hardy[2], John Schenck[2], Ek Tsoon Tan[2], Thomas K.F. Foo[2], Matt A. Bernstein[1]

[1]Radiology, Mayo Clinic, Rochester, MN, United States; [2]GE Global Research, Niskayuna, NY, United States

Combined Educational & Scientific Session
Cardiovascular MRA With & Without Contrast

Organizers: Daniel B. Ennis, Ph.D. & Harald Kramer, M.D.

Room 718 A 16:00-18:00 *Moderators:* Vincent B. Ho, M.D., M.B.A. & Harald Kramer, M.D.

16:00 **Contrast Enhanced MRA: Why, Where & How?**
J. Paul Finn

16:30 **0972.** **Three-Station Fluoroscopic Tracking 3D Bolus Chase MRA with Optimized Accelerations**
ISMRM MERIT AWARD magna cum laude
Paul T. Weavers[1], Eric A. Borisch[1], Phillip M. Young[1], Phillip J. Rossman[1], Thomas C. Hulshizer[1], Stephen J. Riederer[1]
[1]Radiology, Mayo Clinic, Rochester, MN, United States

16:42 **0973.** **Ferumoxytol in Pediatric Congenital Heart Disease: Initial Results with 4D Multiphase Steady State Imaging of Contrast (MUSIC) Enhancement**
Kim-Lien Nguyen[1, 2], Fei Han[2], Daniel Z. Brunengraber[2], Stanislas Rapacchi[2], Ihab Ayad,[23], Gary Satou,[24], Peng Hu[2], J. Paul Finn[2]
[1]Division of Cardiology, Greater Los Angeles VA Healthcare System and David Geffen School of Medicine at UCLA, Los Angeles, CA, United States; [2]Diagnostic Cardiovascular Imaging Laboratory, Department of Radiology, David Geffen School of Medicine at UCLA, Los Angeles, CA, United States; [3]Department of Anesthesiology, David Geffen School of Medicine at UCLA, Los Angeles, CA, Los Angeles, CA, United States; [4]Division of Pediatric Cardiology, David Geffen School of Medicine at UCLA, Los Angeles, CA, United States

16:54 **Non-Contrast Enhanced MRA: Why, Where & How?**
Ruth P. Lim

17:24 **0974.** **Clinical Assessment of a Non-Contrast MR Angiography Protocol for the Pre-Transplant Evaluation of the Liver Vasculature**
Jeremy Douglas Collins[1], Edouard Semaan[1], Zoran Stankovic[2], Riad Salem[1], Maria Carr[1], Michael Markl[1, 3], James Christian Carr[1]
[1]Radiology, Northwestern University, Chicago, IL, United States; [2]Radiology, University Hospital, Freiberg, Germany; [3]Biomedical Engingeering, Northwestern University, Evanston, IL, United States

17:36 **0975.** **Non-Contrast Enhanced MR Angiography in the Calf: A Comparison Between Flow-Sensitive Dephasing Prepared Steady-State Free Precession and Quiescent-Interval Single-Shot in Patients with Diabetes**
Hanwei Chen[1], Na Zhang[2, 3], Xin Liu[2, 3]
[1]Department of Radiology, Guangzhou Panyu Central Hospital, Guangzhou, Guangdong, China; [2]Lauterbur Research Center for Biomedical Imaging, Shenzhen Institutes of Advanced Technology of Chinese Academy of Sciences, Shenzhen, Guangdong, China; [3]Shenzhen Key Laboratory for MRI, Shenzhen, Guangdong, China

17:48 **0976.** **Bicuspid Valve Morphology Determines the Position of Elevated Velocity and WSS: 4D Flow MRI in 202 Subjects**
ISMRM MERIT AWARD summa cum laude
Pim van Ooij[1, 2], Ian G. Murphy[2], Alexander L. Powell[2], Maria Carr[2], Wouter V. Potters[1], Colleen Clennon[3], Jeremy D. Collins[2], James C. Carr[2], S Chris Malaisrie[4], Patrick M. McCarthy[3], Michael Markl[2, 5], Alex J. Barker[2]
[1]Radiology, Academic Medical Center, Amsterdam, Netherlands; [2]Radiology, Northwestern University, Chicago, IL, United States; [3]Division of Cardiac Surgery, Northwestern University, Chicago, IL, United States; [4]Medicine-Cardiology, Northwestern University, Chicago, IL, United States; [5]Northwestern University, Biomedical Engineering, Chicago, IL, United States

18:00 **Adjournment & Meet the Teachers**

Combined Educational & Scientific Session
Quantitative Biomarkers of Chest Disease: the Role of MRI in a Multimodality Practice

Room 718 B 16:00-18:00 *Moderators:* Mitchell S. Albert, Ph.D. & Jim M. Wild, Ph.D.

16:00 **Introduction**

16:03 **Imaging of Chronic Obstructive Pulmonary Disease (COPD): MRI Vs. CT**
Grace Parraga

16:18 **0977.** **Tobacco Smoke Exposure Reduces Lung T_1 in COPD Patients**

ISMRM MERIT AWARD magna cum laude

Daniel F. Alamidi[1], Alexandra R. Morgan[2, 3], Penny L. Hubbard Cristinacce[4], Lars H. Nordenmark[5], Paul D. Hockings[5, 6], Kerstin M. Lagerstrand[1], Simon S. Young[7], Josephine H. Naish[4], John C. Waterton[4, 7], Lars E. Olsson[8], Geoff J.M Parker[2, 3]
[1]Department of Radiation Physics, Institute of Clinical Sciences, Sahlgrenska Academy, University of Gothenburg, Sweden; [2]Bioxydyn Ltd, Manchester, United Kingdom; [3]Centre for Imaging Sciences and Biomedical Imaging Institute, Manchester Academic Health Sciences Centre, University of Manchester, Manchester, United Kingdom; [4]Centre for Imaging Sciences and Biomedical Imaging Institute,, Manchester Academic Health Sciences Centre, University of Manchester, Manchester, United Kingdom; [5]AstraZeneca R&D, Mölndal, Sweden; [6]Chalmers University of Technology, MedTech West, Gothenburg, Sweden; [7]AstraZeneca R&D, Alderley Park, United Kingdom; [8]Department of Medical Physics, Lund University, Lund, Sweden

16:30 **0978.** **Quantitative Evaluation of Emphysema in COPD Patients Via CT and UTE MR Image Analysis**
David J. Roach[1, 2], Yannick Crémillieux[3], Suraj Serai[4], Robert Thomen[1, 5], Sadia Benzaquen[6], Jason C. Woods[1, 2]
[1]Center for Pulmonary Imaging Research, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States; [2]Pulmonary Medicine, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States; [3]Centre de Résonance Magnétique des Systèmes Biologiques, Université de Bordeaux, Bordeaux, France; [4]Radiology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States; [5]Physics, Washington University in St. Louis, St. Louis, MO, United States; [6]University of Cincinnati College of Medicine, Cincinnati, OH, United States

16:42 **Imaging of Lung Cancer: MRI vs. PET-CT**
Edwin J. van Beek

16:57 **0979.** **Diffusion-Weighted MRI (DWI) with Fast Advanced Spin-Echo Sequence: Comparison of N-Stage Assessment with DWI with Echo-Planar Imaging and FDG-PET/CT in Non-Small Cell Lung Cancer Patients**
Yoshiharu Ohno[1, 2], Shinichiro Seki[3], Hisanobu Koyama[3], Takeshi Yoshikawa[1, 2], Sumiaki Matsumoto[1, 2], Yoshiko Ueno[3], Katsusuke Kyotani[4], Yoshimori Kassai[5], Masao Yui[5], Hitoshi Yamagata[5], Kazuro Sugimura[3]
[1]Advanced Biomedical Imaging Research, Kobe University Graduate School of Medicine, Kobe, Hyogo, Japan; [2]Division of Functional and Diagnostic Imaging Research, Department of Radiology, Kobe University Graduate School of Medicine, Kobe, Hyogo, Japan; [3]Division of Radiology, Department of Radiology, Kobe University Graduate School of Medicine, Kobe, Hyogo, Japan; [4]Center for Radiology and Radiation Oncology, Kobe University Hospital, KObe, Hyogo, Japan; [5]Toshiba Medical Systems Corporation, Tochigi, Japan

17:09 **0980.** **Detection of Pulmonary Nodules by Ultra-Short TE Sequences in Oncology Patients Using a PET/MR System**
Nicholas Scott Burris[1], Peder Larson[1], Kevin M. Johnson[2], Michael D. Hope[3], Spencer Behr[3], Thomas A. Hope[3]
[1]Radiology, University of California San Francisco, San Francisco, CA, United States; [2]University of Wisconsin–Madison, WI, United States; [3]University of California San Francisco, CA, United States

17:21 **Imaging of Pulmonary Vascular Disease: MRI Vs. CT**
Jim M. Wild

17:36 **0981.** **Pulmonary Perfusion Phase Imaging Using Self-Gated Fourier Decomposition MRI**
Daniel Stäb[1, 2], Simon Veldhoen[2], Andre Fischer[2], Stefan Weick[3, 4], Andreas Max Weng[2], Clemens Wirth[2], Thorsten A. Bley[2], Herbert Köstler[2]
[1]The Centre for Advanced Imaging, The University of Queensland, Brisbane, Queensland, Australia; [2]Institute of Radiology, University of Würzburg, Würzburg, Bavaria, Germany; [3]Department of Radiation Oncology, University of Würzburg, Würzburg, Bavaria, Germany; [4]Department of Experimental Physics 5, University of Würzburg, Würzburg, Bavaria, Germany

17:48 **0982.** **MR Imaging, Targeting and Characterization of Pulmonary Fibrosis Using Intra-Tracheal Administration of Gadolinium Based Nanoparticles**
Nawal Tassali[1], Andrea Bianchi[1], François Lux[2], Gerard Raffard[1], Stephane Sanchez[1], Olivier Tillement[2], Yannick Cremillieux[1]
[1]Centre de Resonance Magnetique des Systemes Biologiques, CNRS UMR 5536, Universite de Bordeaux, Bordeaux, France; [2]Institut Lumière Matière, CNRS UMR 5306, Universite Claude Bernard, Domaine Scientifique de la Doua, Villeurbane, France

18:00 **Adjournment & Meet the Teachers**

Educational Course
MR Physics & Techniques for Clinicians

Organizers: Marcus T. Alley, Ph.D., Michael Markl, Ph.D., Brian Hargraves, Ph.D., & Nicole Seiberlich, Ph.D.

Room 801 A/B 16:00-18:00 *Moderators:* Brian A. Hargreaves, Ph.D. & Michael Markl, Ph.D.

16:00 **Artifacts to Artefacts: Causes & Cures from Clinical Perspective**
Vikas Gulani

16:40 **Contrast Agents**
Bernd Jung

17:20 **High Field Imaging**
Priti Balchandani

17:50 **Adjournment & Meet the Teachers**

Closing Party

North Building Exhibition Hall 18:15 – 22:00 *(no CME credit)*

Proton MRSI Methods

Room 701 A 08:00-10:00 *Moderators:* Vincent O. Boer, Ph.D. & Sarah J. Nelson, Ph.D.

08:00 0983. Mechanisms of SNR Enhancement and Line Shape Improvement in B_0 Correction for Overdiscrete MRSI Reconstruction
ISMRM MERIT AWARD summa cum laude
Thomas Kirchner[1], Ariane Fillmer[1], Klaas Paul Pruessmann[1], Anke Henning, [12]
[1]Institute for Biomedical Engineering, UZH and ETH Zurich, Zurich, Switzerland; [2]Max Planck Institute for Biological Cybernetics, Tuebingen, Germany

08:12 0984. Removal of Nuisance Signals from Limited and Sparse 3D ^{1}H-MRSI Data of the Brain
ISMRM MERIT AWARD summa cum laude
Bryan Clifford[1], Chao Ma[2], Fan Lam[1], Zhi-Pei Liang[1]
[1]Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]Beckman Institute, University of Illinois at Urbana-Champaign, Urbana, IL, United States

08:24 0985. Towards Robust Reproducibility Study for MRSI Via Fully Automated Reproducible Imaging Positioning
ISMRM MERIT AWARD magna cum laude
Wei Bian[1], Yan Li[1], Jason C. Crane[1], Sarah J. Nelson[1]
[1]Department of Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States

08:36 0986. Comparison of Several Coil Combination Techniques in Multi-Channel 3D MRSI for Brain Tumor Patients
ISMRM MERIT AWARD magna cum laude
Maryam Vareth[1, 2], Li Yan[2, 3], Janine Lupo[2, 3], Sarah Nelson[2, 3]
[1]UCSF/UCBerkeley Joint Graduate Group in Bioengineering, University of California Berkeley, Berkeley, CA, United States; [2]Surbeck Laboratory of Advanced Imaging, Department of Radiology and Biomedical Imaging, CA, United States; [3]Radiology and Biomedical Imaging, University of California San Francisco, CA, United States

08:48 0987. Rosette Spectroscopic Imaging with Hadamard Encoding
Claudiu Schirda[1], Tiejun Zhao[2], Julie Pan[1], Hoby Hetherington[1]
[1]Radiology, University of Pittsburgh School of Medicine, Pittsburgh, PA, United States; [2]Siemens Medical Solutions, Pittsburgh, PA, United States

09:00 0988. 3D Mapping of Glutathione in the Human Brain Via Real-Time Motion Corrected MEGA-LASER MRSI
Wolfgang Bogner[1], Bernhard Strasser[1], Michal Povazan[1], Gilbert Hangel[1], Borjan Gagoski[2], Stephan Gruber[1], Bruce Rosen[3], Siegfried Trattnig[1], Ovidiu C. Andronesi[3]
[1]MRCE, Department of Biomedical Imaging and Image-guided Therapy, Medical University Vienna, Vienna, Austria; [2]Fetal-Neonatal Neuroimaging & Developmental Science Center, Boston Children's Hospital, Harvard Medical School, Boston, MA, United States; [3]Athinoula A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA, United States

09:12 0989. Image-Guided Spatial Localization of Heterogeneous Compartments by Compressed Sensing
Li An[1], Jun Shen[1]
[1]National Institute of Mental Health, National Institutes of Health, Bethesda, MD, United States

09:24 0990. 3D MR Spectroscopic Imaging Using Adiabatic Spin Echo and Hypergeometric Dual Band Pulses for Metabolic Mapping Over the Entire Brain
ISMRM MERIT AWARD magna cum laude
Morteza Esmaeili[1, 2], Tone Frost Bathen[2], Bruce R. Rosen[1], Ovidiu Cristian Andronesi[1]
[1]Athinoula A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Harvard Medical School, Boston, MA, United States; [2]Department of Circulation and Medical Imaging, Norwegian University of Science and Technology (NTNU), Trondheim, Norway

09:36 0991. Detection of Brain Macromolecules Using Double Inversion Recovery Ultra-Short Acquisition Delay ^{1}H MRSI at 7 Tesla
ISMRM MERIT AWARD magna cum laude
Michal Považan[1], Gilbert Hangel[1], Bernhard Strasser[1], Marek Chmelik[1], Stephan Gruber[1], Siegfried Trattnig[1], Wolfgang Bogner[1]
[1]MRCE, Department of Biomedical Imaging and Image-guided therapy, Medical University Vienna, Vienna, Austria

09:48 0992. High-Resolution ^{1}H-MRSI of the Brain Using Short-TE SPICE
Chao Ma[1], Fan Lam, [12], Qiang Ning, [12], Curtis L. Johnson[1], Zhi-Pei Liang, [12]

[1]Beckman Institute, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, IL, United States

Magnetization Transfer

Room 701 B 08:00-10:00 *Moderators:* David C. Alsop, Ph.D. & T.B.A.

08:00 0993. Application of a Dipolar Model to Inhomogeneous Magnetization Transfer (IhMT)

ISMRM MERIT AWARD summa cum laude

Gopal Varma[1], Olivier M. Girard[2], Valentin Prévost[2], Aaron K. Grant[1], Guillaume Duhamel[2], David C. Alsop[1]
[1]Radiology, Division of MR Research, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, United States; [2]CRMBM UMR 7339, CNRS and Aix-Marseille Université, Marseille, France

08:12 0994. Towards a Quantitative Theory for Inhomogeneous Magnetization Transfer

Scott D. Swanson[1], Dariya I. Malyarenko[2], Mario L. Fabiilli[2]
[1]Department of Radiology, University of Michigan, Ann Arbor, MI, United States; [2]Department of Radiology, University of Michigan, MI, United States

08:24 0995. Further Evidence of an Orientation Dependence of Magnetization Transfer Parameters from Investigations in Post-Mortem Marmoset Brain

ISMRM MERIT AWARD magna cum laude

Henrik Marschner[1], Riccardo Metere[1], Stefan Geyer[1], André Pampel[1], Harald E. Möller[1]
[1]Nuclear Magnetic Resonance, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Sachsen, Germany

08:36 0996. Exploring a Flexible Pulse Design for Studying Magnetization Transfer

Peter van Gelderen[1], Xu Jiang[1], Jeff H. Duyn[1]
[1]AMRI, LFMI, NINDS, National Institutes of Health, Bethesda, MD, United States

08:48 0997. Contrast Generation with a Novel Adiabatic On-Resonance Magnetization Transfer Preparation (MT-Prep)

Wolfgang G. Rehwald[1], David C. Wendell[2], Elizabeth R. Jenista[2], Han W. Kim[2], Enn-Ling Chen[2], Igor Klem[2], Raymond J. Kim[2]
[1]Siemens Healthcare, Durham, NC, United States; [2]Cardiology, Duke University Medical School, Durham, NC, United States

09:00 0998. Study of Bound Proton T2 and Magnetization Transfer Using Pulsed MT

ISMRM MERIT AWARD summa cum laude

Xu Jiang[1, 2], Peter van Gelderen[1], Xiaozhen Li[1], Emily Leibovitch[3], Pascal Sati[4], Afonso C. Silva[5], Jeff H. Duyn[1]
[1]AMRI, LFMI, NINDS, NIH, Bethesda, MD, United States; [2]Department of Physics, University of Maryland, College Park, MD, United States; [3]Viral Immunology Section, Neuroimmunology Branch, NINDS, NIH, Bethesda, MD, United States; [4]Translational Neuroradiology Unit, NINDS, NIH, Bethesda, MD, United States; [5]CMU, LFMI, NINDS, NIH, Bethesda, MD, United States

09:12 0999. A New MT Signal at -1.6 Ppm Via NOE-Mediated Saturation Transfer

Xiao-Yong Zhang[1], Hua Li[1], Junzhong Xu[1], Jingping Xie[1], John C. Gore[1], Zhongliang Zu[1]
[1]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States

09:24 1000. Oxidative Stress Sensitive Magnetization Transfer MRI of Prostate Cancer

ISMRM MERIT AWARD magna cum laude

Rongwen Tain[1, 2], Michael Abern[3], Karen Xie[1], X. Joe Zhou[1, 2], Kejia Cai[1, 2]
[1]Radiology, College of Medicine, University of Illinois at Chicago, Chicago, IL, United States; [2]Center for MR Research, College of Medicine, University of Illinois at Chicago, Chicago, IL, United States; [3]Urology, College of Medicine, University of Illinois at Chicago, Chicago, IL, United States

09:36 1001. Assessment of Amide Proton Transfer and Nuclear Overhauser Effects Using Long RF Saturation at 3T in Clinical Brain Tumor Applications

Jochen Keupp[1], Osamu Togao[2]
[1]Philips Research, Hamburg, Germany; [2]Clinical Radiology, Graduate School of Medical Science, Kyushu University, Fukuoka, Japan

09:48 1002. Amplifying ATP Magnetization Exchange Effects by Band Inversion Transfer: A 31P NMR Study in Human Skeletal Muscle at 7T

Jimin Ren[1, 2], Baolian Yang[3], A. Dean Sherry[1, 4], Craig R. Malloy[1, 5]

[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Department of Radiology, University of Texas Southwestern Medical Center, Dallas, TX, United States; [3]Philips Healthcare, Cleveland, OH, United States; [4]Department of Chemistry, University of Texas at Dallas, Richardson, TX, United States; [5]VA North Texas Health Care System, Dallas, TX, United States

Novel Techniques for Cardiac Perfusion & Function

Room 714 A/B 08:00-10:00 *Moderators:* Vincent B. Ho, M.D., M.B.A. & T.B.A.

08:00 1003. Multi-Center Evaluation of Accelerated 3D Magnetic Resonance Perfusion Imaging for Assessing Myocardial Ischemic Burden to Detect Coronary Heart Disease

Robert Manka[1, 2], Lukas Wissmann[2], Rolf Gebker[3], Roy Jogiya[4], Manish Motwani[5], Michael Frick[6], Sebastian Reinartz[6], Bernhard Schnackenburg[3], Markus Niemann[2], Alexander Gotschy[1], Christiane Kuhl[6], Eike Nagel[4], Eckart Fleck[3], Thomas F. Luescher[1], Sven Plein[5], Sebastian Kozerke[2, 4]

[1]University Hospital Zurich, Zurich, Switzerland; [2]University and ETH Zurich, Zurich, Switzerland; [3]German Heart Institute, Berlin, Germany; [4]King's College London, United Kingdom; [5]University of Leeds, United Kingdom; [6]University Hospital Aachen, Germany

08:12 1004. Quantification of Myocardial Blood Flow Using Non-ECG-Triggered MR Imaging with 3 Slice Coverage

David Chen[1, 2], Behzad Sharif[1], Xiaoming Bi[3], Janet Wei[4], Louise E.J. Thomson[4, 5], C. Noel Bairey Merz[5], Daniel S. Berman, [14], Debiao Li[1, 6]

[1]Biomedical Imaging Research Institute, Cedars Sinai Medical Center, Los Angeles, CA, United States; [2]Biomedical Engineering, Northwestern University, Evanston, IL, United States; [3]MR R&D, Siemens Healthcare, Los Angeles, CA, United States; [4]S. Mark Taper Foundation Imaging Center, Cedars Sinai Medical Center, Los Angeles, CA, United States; [5]Barbara Streisand Women's Center, Cedars Sinai Medical Center, Los Angeles, CA, United States; [6]David Geffen School of Medicine, University of California, Los Angeles, CA, United States

08:24 1005. Reduced Field-Of-View Single-Shot Spiral Perfusion Imaging

Yang Yang[1], Li Zhao[2], Xiao Chen[1], Peter Shaw[3], Jorge Gonzalez[3], Frederick Epstein[1, 4], Craig Meyer[1, 4], Christopher Kramer, [34], Michael Salerno[3, 4]

[1]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [2]Radiology, Harvard University, Boston, MA, United States; [3]Medicine, University of Virginia, Charlottesville, VA, United States; [4]Radiology, University of Virginia, Charlottesville, VA, United States

08:36 1006. Towards a Synergistic Application of Multimodal MR/PET Myocardial Perfusion Imaging: Measuring Capillary Transit Time Heterogeneity with MRI and Blood Flow with Simultaneous N-13 Ammonia PET

Karl Philipp Kunze[1], Christoph Rischpler[1], Shelley Zhang[2], Carmel Hayes[3], Markus Schwaiger[1], Stephan Nekolla[1]

[1]Klinikum rechts der Isar der Technischen Universität München, München, Bayern, Germany; [2]Brigham and Women's Hospital, Boston, MA, United States; [3]Siemens Medical Solutions, Erlangen, Bayern, Germany

08:48 1007. Quantitative Dynamic Contrast Enhanced MRI in Acute ST-Elevated Myocardial Infarction: Blood Flow, Microvascular Permeability and Interstitial Volume in Infarct and Peri-Infarct Edema

David A. Broadbent[1, 2], Ananth Kidambi[2], Sven Plein[2], David L. Buckley[1, 2]

[1]Division of Medical Physics, University of Leeds, Leeds, West Yorkshire, United Kingdom; [2]Multidisciplinary Cardiovascular Research Centre, University of Leeds, Leeds, West Yorkshire, United Kingdom

09:00 1008. Accelerated Three-Dimensional Cine DENSE Strain Imaging in Three Minutes

Xiao Chen[1], Daniel Auger[1], Michael Salerno[2, 3], Craig H. Meyer[1], Kenneth C. Bilchick[4], Frederick H. Epstein[1]

[1]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [2]Radiology, University of Virginia, Charlottesville, VA, United States; [3]Cardiology, University of Virginia, Charlottesville, VA, United States; [4]Medicine, Cardiovascular Medicine, University of Virginia, Charlottesville, VA, United States

09:12 1009. New Possibilities for Myocardial Strain Imaging Using Acceleration and Iterative Reconstruction

Andreas Greiser[1], Christoph Forman[1], Jens Wetzel[2], Michael Zenge[3], Marie-Pierre Jolly[4], Edgar Mueller[5]

[1]Siemens AG, Healthcare, Imaging & Therapy Systems, Magnetic Resonance , Erlangen, Bavaria, Germany; [2]Department of Computer Science, Friedrich-Alexander-Universität Erlangen-Nuernberg, Pattern Recognition Lab, Erlangen, Bavaria, Germany; [3]Siemens Healthcare, NY, United States; [4]Imaging and Computer Vision, Siemens Corporate Technology, Princeton, NJ, United States; [5]Siemens AG, Healthcare, Imaging & Therapy Systems, Magnetic Resonance, Erlangen, Bavaria, Germany

09:24 1010. Feasibility Study of a Novel Acquisition Technique of Cardiac Cine Magnetic Resonance Imaging in Patients with Atrial Fibrillation

Jian Cao[1], Yining Wang[1], Lingyan Kong[1], Lu Lin[1], Yan Yi[1], Jing An[2], Tianjing Zhang[2], Michaela Schmidt[3], Michael Zenge[3], Edgar Mueller[3]

[1]Radiology, Peking Union Medical College Hospital, Beiing, Beijing, China; [2]MR Collaborations NE Asia, Siemens Healthcare, Beijing, China; [3]Siemens AG, Allee am Röthelheimpark, Erlangen, 91052, Germany

09:36 1011. Isotropic 3-D CINE Imaging with Sub-2mm Resolution in a Single Breath-Hold

ISMRM MERIT AWARD summa cum laude

Jens Wetzl[1, 2], Michaela Schmidt[3], Michael O. Zenge[3], Felix Lugauer[1], Laszlo Lazar[4], Mariappan Nadar[5], Andreas Maier[1, 2], Joachim Hornegger[1, 2], Christoph Forman[3]

[1]Pattern Recognition Lab, Department of Computer Science, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany; [2]Erlangen Graduate School in Advanced Optical Technologies (SAOT), Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany; [3]Siemens AG, Healthcare, Imaging & Therapy Systems, Magnetic Resonance, Erlangen, Germany; [4]Siemens SRL, Corporate Technology, Brasov, Romania; [5]Siemens Corporation, Corporate Technology, Princeton, NJ, United States

09:48 1012. Pericardial Fat Quantification Using Respiratory Triggered 3D-Dixon Pulse Sequence

Rami Homsi[1], Alois M. Sprinkart[1, 2], Julian Luetkens[1], Juergen Gieseke[1, 3], Hans H. Schild[1], Michael Meier-Schroers[1], Daniel Kuetting[1], Darius Dabir[1], Daniel Thomas[1]

[1]Radiology, University Hospital Bonn, Bonn, NRW, Germany; [2]Institute of Medical Engineering, Ruhr-University Bochum, Bochum, Germany; [3]Philips Healthcare, Best, Netherlands

Gradient Field Engineering & Monitoring

Room 716 A/B 08:00-10:00 *Moderators:* Klass P. Pruessmann, Ph.D. & Brian K. Rutt, Ph.D.

08:00 1013. Field Monitoring During High-Power Transmission Pulses: A Digital Noise Cancelling Approach

ISMRM MERIT AWARD summa cum laude

David O. Brunner[1], Benjamin E. Dietrich[1], Simon Gross[1], Thomas Schmid[1], Christoph Barmet[1, 2], Klaas P. Pruessmann[1]

[1]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [2]Skope Magnetic Resonance Technologies LLC, Zurich, Switzerland

08:12 1014. Spiral Imaging Trajectory Mapping Using High Density 25-Channel Field Probe Array

Ying-Hua Chu[1], Yi-Cheng Hsu[1], Fa-Hsuan Lin[1]

[1]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan

08:24 1015. Placement of Field Probes for Stabilization of Breathing-Induced B0-Fluctuations in the Brain

Mads Andersen[1, 2], Kristoffer H. Madsen[3], Lars G. Hanson, [23], Vincent Boer[4], Tijl van der Velden[4], Dennis Klomp[4], Joep Wezel[5], Matthias J. van Osch[5], Andrew G. Webb[5], Maarten J. Versluis[5, 6]

[1]Danish Research Centre for Magnetic Resonance, Copenhagen University Hospital , Hvidovre, Denmark; [2]Biomedical Engineering Group, DTU Elektro, Technical University of Denmark, Kgs. Lyngby, Denmark; [3]Danish Research Centre for Magnetic Resonance, Copenhagen University Hospital, Hvidovre, Denmark; [4]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [5]C.J. Gorter center, Department of Radiology, Leiden University Medical Center, Leiden, Netherlands; [6]Philips Healthcare, Best, Netherlands

08:36 1016. Continuous 3rd-Order Field Monitoring: Design and Application for Single-Shot Shim Characterization

ISMRM MERIT AWARD summa cum laude

Benjamin E. Dietrich[1], David O. Brunner[1], S. Johanna Vannesjo[1], Yolanda Duerst[1], Bertram J. Wilm[1], Klaas P. Pruessmann[1]

[1]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland

08:48 1017. Movement Monitoring for MRI Via Measurement of Changes in the Gradient Induced EMF in Coil Arrays

ISMRM MERIT AWARD summa cum laude

E. H. Bhuiyan[1], M. E. H. Chowdhury[1], P. M. Glover[1], R. Bowtell[1]

[1]SPMIC, School of Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom

09:00 1018. Total Current Reduced Design for Brain B_0 Shim Coil Using Singular Value Decomposition

Kohjiro Iwasawa[1], Yosuke Otake[1], Hisaaki Ochi[1]

[1]Central Research Laboratory, Hitachi Ltd., Kokubunji, Tokyo, Japan

09:12 **1019.** **Development of a Dedicated Asymmetric Head-Only Gradient Coil for High-Performance Brain Imaging with a High PNS Threshold**

Jean-Baptiste Mathieu[1], Seung-Kyun Lee[1], Dominic Graziani[1], Jian Lin[2], Eric Budesheim[1], Joseph E. Piel[1], Naveen Thiagarajan[1], Christopher J. Hardy[1], John F. Schenck[1], Ek Tsoon Tan[1], Eric Fiveland[1], Keith Park[1], Yihe Hua[2], Matt A. Bernstein[3], John Huston III[3], Yunhong Shu[3], Thomas K.-F. Foo[1]
[1]GE Global Research, Niskayuna, NY, United States; [2]GE Global Research, China Technology Center, Shanghai, China; [3]Mayo Clinic, Rochester, MN, United States

09:24 **1020.** **Lorentz Damping and the Field Dependence of Gradient Coil Vibroacoustics**

Simone Angela Winkler[1], Trevor P. Wade[2], Andrew Alejski[2], Charles McKenzie[2], Brian K. Rutt[1]
[1]Dept. of Radiology, Stanford University, Stanford, CA, United States; [2]Robarts Research Institute, The University of Western Ontario, London, Ontario, Canada

09:36 **1021.** **Thermal Characterization of an All Hollow Copper Insertable Head Gradient Coil**

Trevor Paul Wade[1, 2], Andrew Alejski[1], Janos Bartha[1], Dina Tsarapkina[2], Brian K. Rutt[3], Charles A. McKenzie[2]
[1]Robarts Research Institute, Western University, London, Ontario, Canada; [2]Medical Biophysics, Western University, London, Ontario, Canada; [3]Radiology, Stanford University, Stanford, CA, United States

09:48 **1022.** **Shielded Matrix Gradient Coil**

Sebastian Littin[1], Feng Jia[1], Stefan Kroboth[1], Kelvin Layton[1], Huijun Yu[1], Maxim Zaitsev[1]
[1]Medical Physics, University Medical Center Freiburg, Freiburg, Germany

Diffusion Weighted Image Analyses

Room 718 A 08:00-10:00 *Moderators:* Andrew L. Alexander, Ph.D. & Chantal M. W. Tax, M.Sc.

08:00 **1023.** **Noise Map Estimation in Diffusion MRI Using Random Matrix Theory**

ISMRM MERIT AWARD summa cum laude

Jelle Veraart[1], Els Fieremans[2], Dmitry S. Novikov[1]
[1]Center for Biomedical Imaging, NYU Langone Medical Center, New York, NY, United States; [2]Center for Biomedical Imaging, NYU Langone Medical Center, New York , NY, United States

08:12 **1024.** **Caveats of Non-Linear Fitting to Brain Tissue Models of Diffusion**

Ileana O. Jelescu[1], Jelle Veraart[1], Els Fieremans[1], Dmitry S. Novikov[1]
[1]Center for Biomedical Imaging, Dept. of Radiology, NYU Langone Medical Center, New York, United States

08:24 **1025.** **Joint Estimation of Microstructural and Biomechanical Features of the Brain Using a Phase Sensitive Reconstruction of DWIs**

ISMRM MERIT AWARD summa cum laude

Tim Sprenger[1, 2], Jonathan I. Sperl[2], Axel Haase[1], Brice Fernandez[3], Christopher Hardy[4], Luca Marinelli[4], Michael Czisch[5], Philipp Saemann[5], Marion I. Menzel[2]
[1]IMETUM, Technical University, Munich, Germany; [2]GE Global Research, Munich, Germany; [3]GE Healthcare, Munich, Germany; [4]GE Global Research, Niskayuna, NY, United States; [5]Max Planck Institute of Psychiatry, Munich, Select, Germany

08:36 **1026.** **A Compressed Sensing Approach to Super-Resolution Diffusion MRI from Multiple Low-Resolution Images**

Lipeng Ning[1, 2], Kawin Setsompop, [23], Cornelius Eichner[3], Oleg Michailovich[4], Carl-Fredrik Westin[1, 2], Yogesh Rathi[1, 2]
[1]Brigham and Women's Hospital, Boston, MA, United States; [2]Harvard Medical School, Boston, MA, United States; [3]Massachusetts General Hospital, MA, United States; [4]University of Waterloo, Ontario, Canada

08:48 **1027.** **Time to Move On: An FOD-Based DEC Map to Replace DTI's Trademark DEC FA**

ISMRM MERIT AWARD summa cum laude

Thijs Dhollander[1], Robert Elton Smith[1], Jacques-Donald Tournier[2, 3], Ben Jeurissen[4], Alan Connelly[1, 5]
[1]The Florey Institute of Neuroscience and Mental Health, Melbourne, Victoria, Australia; [2]Centre for the Developing Brain, King's College London, London, United Kingdom; [3]Department of Biomedical Engineering, King's College London, London, United Kingdom; [4]iMinds-Vision Lab, University of Antwerp, Antwerp, Belgium; [5]The Florey Department of Neuroscience, University of Melbourne, Melbourne, Victoria, Australia

09:00 **1028.** **Resolving Crossing Fibers and Generalizing Biomarkers Using the Diffusion Kurtosis Tensor**

Rafael Neto Henriques[1], Marta Morgado Correia[1], Rita Gouveia Nunes[2], Hugo Alexandre Ferreira[2]

[1]Cognition and Brain Science Unit, MRC, Cambridge, England, United Kingdom; [2]Instituto de Biofisica e Engenharia Biomedica, Faculdade de Ciencias da Universidade de Lisboa, Lisbon, Portugal

09:12 1029. Comparing Fourier to SHORE Basis Functions for Sparse DSI Reconstruction

ISMRM MERIT AWARD magna cum laude

Alexandra Tobisch[1, 2], Thomas Schultz[2], Rüdiger Stirnberg[1], Gabriel Varela[3], Hans Knutsson[4], Pablo Irarrázaval[3, 5], Tony Stöcker[1, 6]

[1]German Center for Neurodegenerative Diseases, Bonn, Germany; [2]Department of Computer Science, University of Bonn, Bonn, Germany; [3]Biomedical Imaging Center, Pontificia Universidad Católica de Chile, Santiago, Chile; [4]Linköping University, Linköping, Sweden; [5]Department of Electrical Engineering, Pontificia Universidad Católica de Chile, Santiago, Chile; [6]Department of Physics and Astronomy, University of Bonn, Bonn, Germany

09:24 1030. How to Avoid Biased Streamlines-Based Metrics for Streamlines with Variable Step Sizes

Jean-Christophe Houde[1], Marc-Alexandre Côté-Harnois[1], Maxime Descoteaux[1]

[1]Computer Science department, Université de Sherbrooke, Sherbrooke, Quebec, Canada

09:36 1031. Imposing Label Priors in Global Tractography Can Resolve Crossing Fibre Ambiguities

ISMRM MERIT AWARD magna cum laude

Daan Christiaens[1, 2], Frederik Maes[1, 2], Stefan Sunaert[23], Paul Suetens[1, 2]

[1]Electrical Engineering, KU Leuven, Leuven, Vlaams-Brabant, Belgium; [2]Medical Imaging Research Center, UZ Leuven, Leuven, Vlaams-Brabant, Belgium; [3]Translational MRI, KU Leuven, Leuven, Vlaams-Brabant, Belgium

09:48 1032. Connectivity Based Segmentation of the Corpus Callosum Using a Novel Data Mining Approach

Gowtham Atluri[1], An Wu[2], Essa Yacoub[2], Kamil Ugurbil[2], Vipin Kumar[1], Christophe Lenglet[2]

[1]Computer Science and Engineering, University of Minnesota, Minneapolis, MN, United States; [2]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States

Pulmonary MRI - Proton & Non-Proton Applications

Room 718 B 08:00-10:00 *Moderators:* Samuel Patz, Ph.D. & Mark L. Schiebler, M.D.

08:00 1033. Fractional Ventilation Mapping Using Inert Fluorinated Gas MRI in a Rat Model of Inflammation

ISMRM MERIT AWARD summa cum laude

Marcus J. Couch[1, 2], Matthew S. Fox[3, 4], Chris Viel[1, 2], Gowtham Gajawada[1, 2], Tao Li[2], Mitchell S. Albert[1, 2]

[1]Lakehead University, Thunder Bay, Ontario, Canada; [2]Thunder Bay Regional Research Institute, Thunder Bay, Ontario, Canada; [3]Robarts Research Institute, London, Ontario, Canada; [4]Department of Medical Biophysics, Western University, London, Ontario, Canada

08:12 1034. *In-Vivo* Imaging of the Spectral Line Broadening of the Human Lung in a Single Breath-Hold

ISMRM MERIT AWARD magna cum laude

Flavio Carinci[1, 2], Cord Meyer[2], Felix A. Breuer[1], Peter M. Jakob[1, 2]

[1]Research Center Magnetic Resonance Bavaria (MRB), Würzburg, Bayern, Germany; [2]Department of Experimental Physics 5, University of Würzburg, Würzburg, Bayern, Germany

08:24 1035. Non-Contrast Enhanced Non-Invasive Detection and Follow-Up of Lung Tumors in Mice

ISMRM MERIT AWARD magna cum laude

Andrea Bianchi[1], Sandrine Dufort[2, 3], Pierre-Yves Fortin[1, 4], François Lux[5], Gerard Raffard[1], Nawal Tassali[1], Olivier Tillement[5], Jean-Luc Coll[2], Yannick Crémillieux[1]

[1]Centre de Résonance Magnétique des Systèmes Biologiques, University of Bordeaux, Bordeaux, France; [2]IAB-INSERM U823, University Joseph Fourier, Grenoble, France; [3]Nano-H, Saint Quentin – Fallavier, France; [4]Institut de Bio-Imagerie (IBIO) CNRS/UMS 3428, University of Bordeaux, Bordeaux, France; [5]ILM UMR 5306, University Lyon 1, Lyon, France

08:36 1036. Pulmonary Thin-Section 3D MR Imaging with Ultra-Short TE: Comparison of Capability for Radiological Findings Assessment with Thin-Section CT

Yoshiharu Ohno[1, 2], Shinichiro Seki[3], Hisanobu Koyama[3], Aiming Lu[4], Masao Yui[5], Mitsue Miyazaki[4], Katsusuke Kyotani[6], Yoshiko Ueno[3], Takeshi Yoshikawa[1, 2], Sumiaki Matsumoto[1, 2], Kazuro Sugimura[3]

[1]Advanced Biomedical Imaging Research, Kobe University Graduate School of Medicine, Kobe, Hyogo, Japan; [2]Division of Functional and Diagnostic Imaging Research, Department of Radiology, Kobe University Graduate School of Medicine, Kobe, Hyogo, Japan; [3]Division of Radiology, Department of Radiology, Kobe University Graduate School of Medicine, Kobe, Hyogo, Japan; [4]Toshiba Medical Research Institute USA, IL, United States; [5]Toshiba Medical Systems Corporation, Tochigi, Japan; [6]Center for Radiology and Radiation Oncology, Kobe University Hospital, KObe, Hyogo, Japan

08:48 **1037.** **Functional 1H Lung MRI in Healthy and Emphysematous Rats Using a Self-Gated Golden Angle UTE**

ISMRM MERIT AWARD magna cum laude

Åsmund Kjørstad[1], Marta Tibiletti[2], Andrea Bianchi[3], Michael Neumaier[3], Andrea Vögtle[3], Thomas Kaulisch[3], Frank G. Zöllner[1], Lothar R. Schad[1], Volker Rasche[2], Detlef Stiller[3]
[1]Computer Assisted Clinical Medicine, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany; [2]Core Facility Small Animal MRI, Ulm University, Ulm, Germany; [3]Target Discovery Research, In-vivo imaging laboratory, Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach an der Riss, Germany

09:00 **1038.** **Simultaneous Imaging of Lung Structure and Function Using Oxygen-Enhanced MRI in a Mouse Model of Emphysema**

Magdalena Zurek[1], Louise Sladen[2], Edvin Johansson[1], Sonya Jackson[3], Gaell Mayer[3], Paul D. Hockings[2]
[1]PHB, Imaging, AstraZeneca R&D, Mölndal, Sweden; [2]Drug Safety and Metabolism, AstraZeneca R&D, Mölndal, Sweden; [3]RIA, Bioscience, AstraZeneca R&D, Mölndal, Sweden

09:12 **1039.** **^{3}He MRI and CT Parametric Response Mapping of Small Airways Disease: The Battle-Ground for Ground Truth**

ISMRM MERIT AWARD magna cum laude

Dante Capaldi[1, 2], Nanxi Zha[1], Damien Pike[1, 2], Khadija Sheikh[1, 2], David G. McCormack[3], Grace Parraga[1, 2]
[1]Imaging Research Laboratories, Robarts Research Institute, London, Ontario, Canada; [2]Department of Medical Biophysics, The University of Western Ontario, London, Ontario, Canada; [3]Division of Respirology, Department of Medicine, The University of Western Ontario, London, Ontario, Canada

09:24 **1040.** **Isotropic ^{1}H and Hyperpolarized ^{129}Xe Gas- And Dissolved-Phase MRI for Longitudinal Evaluation of Lung Cancer**

Rohan S. Virgincar[1], Scott H. Robertson[2], Simone Degan[3, 4], Matthew S. Freeman[2], Mu He[5], Bastiaan Driehuys[4]
[1]Biomedical Engineering, Duke University, Durham, NC, United States; [2]Medical Physics Graduate Program, Duke University, Durham, NC, United States; [3]Center for Molecular and Biomolecular Imaging, Duke University, Durham, NC, United States; [4]Radiology, Duke University Medical Center, Durham, NC, United States; [5]Electrical and Computer Engineering, Duke University, Durham, NC, United States

09:36 **1041.** **An Adaptive K-Means Approach for Assessment of Ventilation Defects in Asthma and Cystic Fibrosis Using Hyperpolarized Helium-3 MRI**

Wei Zha[1], Stanley J. Kruger[1], Robert V. Cadman[1], David Mummy[2], David J. Niles[1], Scott K. Nagle[1, 3], Sean B. Fain[1, 3]
[1]Department of Medical Physics, University of Wisconsin-Madison, Madison, WI, United States; [2]Department of Biomedical Engineering, University of Wisconsin-Madison, Madison, United States; [3]Department of Radiology, University of Wisconsin-Madison, Madison, WI, United States

09:48 **1042.** **Feasibility of Human Lung Ventilation MR Imaging Using Naturally-Abundant Xenon with Optimized 3D SSFP**

ISMRM MERIT AWARD magna cum laude

Neil James Stewart[1], Graham Norquay[1], Paul David Griffiths[1], Jim Michael Wild[1]
[1]Academic Unit of Radiology, University of Sheffield, Sheffield, South Yorkshire, United Kingdom

Cancer: Prostate Cancer

Room 801 A/B 08:00-10:00 *Moderators:* Elizabeth M. Hecht, M.D. & T.B.A.

08:00 **Introduction**

08:12 **1043.** **Diagnostic Potential of Simultaneous ^{18}F-FACBC PET/MRI in High Risk Prostate Cancer Patients**

ISMRM MERIT AWARD summa cum laude

Kirsten Margrete Selnæs[1, 2], Mattijs Elschot[1], Brage Krüger-Stokke[1, 3], Øystein Størkersen[4], Dag Linthoe Halvorsen[5], Elise Sandsmark[1], May-Britt Tessem[1, 2], Sverre Langørgen[3], Eirik Kjøbli[5], Anders Angelsen[1], Frode Willoch[6, 7], Helena Bertilsson[5, 8], Siver Andreas Moestue[1, 2], Tone Frost Bathen[1, 2]
[1]Department of Sirculation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway; [2]St. Olavs University Hospital, Trondheim, Norway; [3]Clinic of Radiology and Nuclear Medicine, St. Olavs University Hospital, Trondheim, Norway; [4]Clinic of Laboratory Medicine, St. Olavs University Hospital, Trondheim, Norway; [5]Clinic of Surgery, St. Olavs University Hospital, Trondheim, Norway; [6]Institute of Basic Medical Sciences, University of Oslo, Oslo, Norway; [7]Aleris Cancer Center, Oslo, Norway; [8]Department of Cancer Research and Molecular Medicine, Norwegian University of Science and Technology, Trondheim, Norway

08:24 **1044.** **Hypoxia Modification During Prostate Radiotherapy: An Evaluation of Changes in the Tumour Microenvironment Using Multi-Parametric MRI (MpMRI)**

N Jane Taylor[1], Kent Yip[2], Juliette Valentine[2], J James Stirling[1], Ian C. Simcock[1], David J. Collins[3], James A. d'Arcy[3], Uma Patel[2], Andrew Gogbashian[1], Peter Hoskin[2], Anwar R. Padhani[1], Roberto Alonzi[2]
[1]Paul Strickland Scanner Centre, Mount Vernon Hospital, London, United Kingdom; [2]Marie Curie Research Wing, Mount Vernon Cancer Centre, London, United Kingdom; [3]Cancer Research-UK-EPSRC Cancer Imaging Centre, Institute of Cancer Research and Royal Marsden NHS Foundation Trust, Sutton, Surrey, United Kingdom

08:36 1045. Gradient Echo Signal Decays in Healthy and Cancerous Prostate at 3T Require a Gaussian Augmentation of the Mono-Exponential (GAME) Model

ISMRM MERIT AWARD magna cum laude

Pelin Aksit Ciris[1,2], Robert V. Mulkern, [23], Mukund Balasubramanian, [23], Ravi T. Seethamraju[4], Janice Fairhurst[1], Junichi Tokuda[1,2], Jonathan Scalera[1,2], Tobias Penzkofer[1,2], Fiona Fennessy, [25], Ferenc A. Jolesz[1,2], Clare M. Tempany-Afdhal[1,2], Ehud Schmidt[1,2], Kemal Tuncali[1,2]
[1]Brigham and Women's Hospital, Boston, MA, United States; [2]Harvard Medical School, Boston, MA, United States; [3]Boston Children's Hospital, Boston, MA, United States; [4]Siemens Healthcare, Boston, MA, United States; [5]Dana-Farber Cancer Institute, MA, United States

08:48 1046. Utility of T2 Histogram Analysis in Active Surveillance of Prostate Cancer

Harsh K. Agarwal[1,2], Sandeep Sankineni[2], Marcelino Bernardo[2,3], Bradford Wood[2], Peter Pinto[2], Peter L. Choyke[2], Baris Turkbey[2]
[1]Philips Research NA, Briarcliff Manor, NY, United States; [2]National Institutes of Health, Bethesda, MD, United States; [3]Frederic National Laboratory for Cancer Research, Leidos Biomedical Research Inc., Frederick, MD, United States

09:00 1047. Support Vector Neural Networks Versus Logistic Regression MR Based Diagnostic Model for Classification of Transition Zone Prostate Cancer

ISMRM MERIT AWARD magna cum laude

Nikolaos Dikaios[1,2], Jokha Alkalbani[2], Alex Kirkham[3], Clare Allen[3], Hashim Ahmed[4], Mark Emberton[4], Alex Freeman[5], Steve Halligan[2], Stuart Taylor[2], David Atkinson[2], Shonit Punwani[2]
[1]Medical Physics, UCL, London, Greater London, United Kingdom; [2]Centre of Medical Imaging, UCL, Greater London, United Kingdom; [3]Radiology, UCL, Greater London, United Kingdom; [4]Urology, UCL, Greater London, United Kingdom; [5]Histopathology, UCL, Greater London, United Kingdom

09:12 1048. Unsupervised Multi-Characterstic Framework for DW-MRI Prostate Cancer Localization

Raisa Z. Freidlin[1], Harsh K. Agarwal[2], Sandeep Sankineni[3], Anna M. Brown[3], Marcelino Bernardo[3,4], Peter A. Pinto[3], Bradford J. Wood[3], Deborah E. Citrin[3], Peter L. Choyke[3], Baris Turkbey[3]
[1]NIH/CIT, Bethesda, MD, United States; [2]Philips Research, NY, United States; [3]NIH/NCI, MD, United States; [4]Leidos , MD, United States

09:24 1049. Correlation Between MRI-Derived Quantitative Biomarkers and Circulating Tumor Cells in Prostate Cancer

Radka Stoyanova[1], Sakhi Abraham[1], Adrian Breto[1], Zheng Ao[2], Anthony Williams[2], Jorge Torres-Munoz[2], Ram Datar[2], Richard Cote[2], Yosef Zeidan[1], Adrian Ishkanian[1], Matthew Abramowitz[1], Alan Pollack[1]
[1]Radiation Oncology, University of Miami, Miami, FL, United States; [2]Pathology, University of Miami, Miami, FL, United States

09:36 1050. Assessment of Prostate Cancer Aggressiveness with Hyperpolarized Dual-Agent 3D Dynamic Imaging of Metabolism and Perfusion

ISMRM MERIT AWARD magna cum laude

Hsin-Yu Chen[1,2], Peder E.Z. Larson[1,2], Robert A. Bok[2], Cornelius von Morze[2], Romelyn Delos Santos[2], Renuka Sriram[2], Justin Delos Santos[2], John Kurhanewicz[1,2], Daniel B. Vigneron[1,2]
[1]Graduate Program in Bioengineering, UCSF and UC Berkeley, San Francisco, CA, United States; [2]Department of Radiology and Biomedical Imaging, University of California, San Francisco, San Francisco, CA, United States

09:48 1051. Robust 3D 1H MRSI of the Prostate Without Endorectal Coil at 3T

Nassim Tayari[1], Isabell K. Steinseifer[1], Cai Xia Fu[2], Elisabeth Weiland[3], Jack J.A. van Asten[1], Tom W.J. Scheenen[4], Marnix C. Maas[1], Arend Heerschap[1]
[1]Department of Radiology and Nuclear Medicine, Radboud University Medical Center, Nijmegen, Netherlands; [2]Siemens Shenzhen Magnetic Resonance Ltd., China; [3]Siemens Healthcare, Erlangen, Germany; [4]Department of Radiology and Nuclear Medicine, Radboud university medical center, Nijmegen, Netherlands

Elastography

Constitution Hall 107 08:00-10:00 *Moderators:* Meng Yin, Ph.D. & T.B.A.

08:00 **1052.** **Low Dynamic Mechanical Tissue Stimulation for High Resolution Magnetic Resonance Elastography: An *In Vivo* Feasibility Study in the Liver and the Brain**

ISMRM MERIT AWARD magna cum laude

Florian Dittmann[1], Sebastian Hirsch[1], Jing Guo[1], Jürgen Braun[2], Ingolf Sack[1]
[1]Institute of Radiology, Charité, Berlin, Germany; [2]Department of Medical Informatics, Charité, Berlin, Germany

08:12 **1053.** **Magnetic Resonance Elastography of Slow and Fast Shear Waves Illuminates Differences in Shear and Tensile Moduli in Anisotropic Tissue**

John L. Schmidt[1], Dennis J. Tweten[1], Maisie M. Mahoney[2], Tally Portnoi[3], Ruth J. Okamoto[1], Joel R. Garbow[4], Philip V. Bayly[1], [2]
[1]Mechanical Engineering and Materials Science, Washington University, St. Louis, MO, United States; [2]Biomedical Engineering, Washington University, St. Louis, MO, United States; [3]Electrical Engineering, Massachusets Institute of Technology, Cambridge, MA, United States; [4]Biomedical Magnetic Resonance Laboratory, Department of Radiology, Washington University, St. Louis, MO, United States

08:24 **1054.** **SLIM-MRE Without Prolonged Echo Time for the Simultaneous Acquisition of the 3D Displacement Vector Applied to *In Vivo* Mouse Brain**

Steven P. Kearney[1], Spencer T. Brinker[1], David A. Burns[1], Thomas J. Royston[2], Dieter Klatt[2]
[1]Mechanical and Industrial Engineering, University of Illinois at Chicago, Chicago, IL, United States; [2]Bioengineering, University of Illinois at Chicago, Chicago, IL, United States

08:36 **1055.** **Optimal Motion Encoding Scheme for MR Elastography**

Temel Kaya Yasar[1], Yifei Liu[2], Dieter Klatt[3], Richard L. Magin[3], Thomas J. Royston[3]
[1]Radiology, Icahn School of Medicine at Mount Sinai, New York, New York, NY, United States; [2]Mechanical Engineering Department, University of Illinois at Chicago, Chicago, IL, United States; [3]Biomedical Engineering Department, University of Illinois at Chicago, Chicago, IL, United States

08:48 **1056.** **Motion Compensation and Super-Resolution in Magnetic Resonance Elastography**

Guy Nir[1], Ramin S. Sahebjavaher[1], Septimiu E. Salcudean[1]
[1]Electrical and Computer Engineering, University of British Columbia, Vancouver, BC, Canada

09:00 **1057.** **Stationary Super-Resolution Multi-Frequency Magnetic Resonance Elastography (SSR-MMRE) of the Human Brain**

ISMRM MERIT AWARD magna cum laude

Eric Barnhill[1], Ingolf Sack[2], Jürgen Braun[3], Jens Würfel[4], Colin Brown[5], Edwin van Beek[1], Neil Roberts[1]
[1]Clinical Research Imaging Centre, The University of Edinburgh, Edinburgh, Scotland, United Kingdom; [2]Radiological Sciences, Charité Universitätsmedizin, Berlin, Germany; [3]Informatics, Charité Universitätsmedizin, Berlin, Germany; [4]Neuroradiology, Charité Universitätsmedizin, Berlin, Germany; [5]Research and Development, The Mentholatum Company, East Kilbride, Scotland, United Kingdom

09:12 **1058.** **Property Differences in White Matter Structures Due to Distinct Wave Propagation Directions in MR Elastography**

ISMRM MERIT AWARD magna cum laude

Aaron T. Anderson[1], Curtis L. Johnson[2], Joseph L. Holtrop[2], [3], Elijah EW Van Houten[4], [5], Mathew DJ McGarry[5], Keith D. Paulsen[5], [6], Bradley P. Sutton[2], [3], John G. Georgiadis[1], [2]
[1]Mechanical Science & Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]Beckman Institute for Advanced Science, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [3]Bioengineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [4]Département de Génie Mécanique, Université de Sherbrooke, Sherbrooke, QC, Canada; [5]Thayer School of Engineering, Dartmouth College, Hanover, NH, United States; [6]Dartmouth-Hitchcock Medical Center, Lebanon, NH, United States

09:24 **1059.** **Viscoelasticity of Subcortical Gray Matter Structures**

ISMRM MERIT AWARD summa cum laude

Curtis L. Johnson[1], Hillary Schwarb[1], Matthew DJ McGarry[2], Bradley P. Sutton[1], Neal J. Cohen[1]
[1]Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]Thayer School of Engineering, Dartmouth College, Hanover, NH, United States

09:36 **1060.** **Magnetic Resonance Elastography in the Presence of Iron Overload**

Najat Salameh[1], [2], Mathieu Sarracanie[1], [2], Christian Farrar[1], David E J Waddington[1], [3], Bo Zhu[1], [4], Arnaud Comment[5], Matthew S. Rosen[1], [2]

[1]MGH/A.A. Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [2]Department of Physics, Harvard University, Cambridge, MA, United States; [3]ARC Centre of Excellence for Engineered Quantum Systems, University of Sydney, Sydney, NSW, Australia; [4]Harvard-MIT, Division of Health Sciences and Technology, Cambridge, MA, United States; [5]Institute of Physics of Biological Systems, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland

09:48 1061. Simultaneous MR Elastography and Fat+Water Imaging
Joshua Trzasko[1], Jennifer Kugel[1], Roger Grimm[1], Kevin Glaser[1], Armando Manduca[1], Philip Araoz[1], Richard Ehman[1]
[1]Mayo Clinic, Rochester, MN, United States

Multimodality Approach for Traumatic Brain Injury

Plenary Hall FG 08:00-10:00 *Moderators:* Roman Fleysher, Ph.D. & Toshiaki Taoka, M.D., Ph.D.

08:00 1062. Magnetization Transfer Ratio Detects Myelin Loss in Thalamocortical Pathways More Consistently Than DTI After a Traumatic Brain Injury in Rat
ISMRM MERIT AWARD summa cum laude
Lauri Juhani Lehto[1], Alejandra Sierra[1], Asla Pitkänen[1, 2], Olli Gröhn[1]
[1]Neurobiology, University of Eastern Finland, Kuopio, Eastern Finland, Finland; [2]Neurology, Kuopio University Hospital, Kuopio, Eastern Finland, Finland

08:12 1063. Voxelwise DTI Group Analysis in Professional Fighter Population
Wanyong Shin[1], Blessy Mathew[1], Banks Sarah[2], Mark J. Lowe[1], Michael Phillips[1], Modic T. Michael[3], Charles Bernick[2]
[1]Imaging Institute, Cleveland Clinic Foundatoin, Cleveland, OH, United States; [2]Lou Ruvo Center for Brain Health, Cleveland Clinic Foundation, Las Vegas, Nervada, United States; [3]Neurological Institute, Cleveland Clinic Founcatoin, Cleveland, OH, United States

08:24 1064. Widespread Hemodynamic Disturbance Following Experimental TBI
ISMRM MERIT AWARD summa cum laude
Justin Alexander Long[1], Lora Talley Watts[1, 2], Wei Li[1], Qiang Shen[1], Shiliang Huang[1], Timothy Q. Duong[1, 3]
[1]Research Imaging Institute, UTHSCSA, San Antonio, TX, United States; [2]Department of Cellular and Structural Biology, UTHSCSA, San Antonio, TX, United States; [3]Department of Ophthamology and Radiology, UTHSCSA, San Antonio, TX, United States

08:36 1065. Neuroprotective Effects of Delayed Methylene Blue in Mild Traumatic Brain Injury
Lora Talley Watts[1], Justin Alexander Long[1], Qiang Shen[1], Timothy Q. Duong[1]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

08:48 1066. Using Functional and Molecular MRI Techniques to Detect Neuroprotection by Pinocembrin in Rats Subjected to Traumatic Brain Injury
ISMRM MERIT AWARD summa cum laude
Wenzhu Wang[1], Dong-Hoon Lee[2], Hong Zhang[2], Jinyuan Zhou[2], Jian Wang[1]
[1]Department of Anesthesiology and Critical Care Medicine, Johns Hopkins University, Baltimore, MD, United States; [2]Department of Radiology, Johns Hopkins University, Baltimore, MD, United States

09:00 1067. Mapping of Glucose Concentration in Mild Traumatic Brain Injury Via GlucoCEST
ISMRM MERIT AWARD magna cum laude
Tsang-Wei Tu[1], Rashida Williams[2], Neekita Jikaria, L. Christine Turtzo, Joseph Frank[2]
[1]Radiology and Imaging Sciences, National Institutes of Health, Bethesda, MD - Maryland, United States; [2]Radiology and Imaging Sciences, National Institutes of Health, MD, United States

09:12 1068. Evidence of Altered Brain Chemistry After Repetitive Subconcussive Head Impacts
Alexander Peter Lin[1, 2], Marc Muehlmann[2, 3], Sai Merugumala[1], Huijun Vicky Liao[1], Tyler Starr[1], David Kaufmann[3], Michael Mayinger[2, 3], Denise Steffinger[3], Barbara Fisch[3], Susanne Karch[3], Florian Heinen[3], Birgit Ertl-Wagner[3], Maximilian Reiser[3], Robert A. Stern[4], Ross Zafonte[5], Martha Shenton[2, 6], Inga K. Koerte[2, 3]
[1]Center for Clinical Spectroscopy, Brigham and Women's Hospital, Boston, MA, United States; [2]Psychiatry Neuroimaging Laboratory, Brigham and Women's Hospital, Boston, MA, United States; [3]Ludwig-Maximilian-University, Munich, Germany; [4]Boston University Alzheimer's Disease Center, Boston University School of Medicine, Boston, MA, United States; [5]Spaulding Rehabilitation Hospital, Massachusetts General Hospital, Boston, MA, United States; [6]VA Boston Healthcare System, Boston, MA, United States

09:24 **1069.** **3D Echo-Planar Spectroscopic Imaging Based Metabolic Imaging and Assessment of Whole Brain Temperature in Brain Injuries**

Bhanu Prakash KN[1], Sanjay Kumar Verma[1], Yevgen Marchenko[1], Suresh Anand Sadananthan[2], Yang Ming[3], Sein Lwin[3], Charmaine Childs[4], Yeo Tseng Tsai[3], Lu Jia[5], Andrew Maudsley[6], Sendhil Velan S[1, 2]

[1]Laboratory of Molecular Imaging, Singapore Bioimaging Consortium, A*STAR, Singapore; [2]Singapore Institute for Clinical Sciences, , A*STAR, Singapore; [3]Division of Neurosurgery, National University Health Sciences, Singapore; [4]Centre for Health and Social Care Research, Faculty of Health and Wellbeing,, Sheffield Hallam University, United Kingdom; [5]Combat Protection and Performance Lab, Defence Medical and Environmental Research Institute, DSO National Laboratories, Singapore; [6]Miller School of Medicine,, University of Miami,, Miami, FL, United States

09:36 **1070.** **Leveraging Abnormal Structural Integrity to Enhance Detection of Disease-Specific Alterations in Functional Connectivity.**

Roman Fleysher[1], Susan Sotardi[1], Michael Stockman[1], Namhee Kim[1], David Gutman[1], Jeremy Smith[1], Craig A. Branch[1], Michael L. Lipton[1]

[1]Gruss Magnetic Resonance Research Center, Department of Radiology, Albert Einstein College of Medicine, Bronx, NY, United States

09:48 **1071.** **Mapping of Cerebral Oxidative Metabolism in Concussion Patients**

Xiang He[1], Serter Gumus[2], Hoi-Chung Leung[3], Parsey Ramin[4], Mark Schweitzer[1], Marion Hughes[2], Lea Alhilali[2], Saeed Fakhran[2]

[1]Department of Radiology, Stony Brook University, Stony Brook, NY, United States; [2]Department of Radiology, University of Pittsburgh Medical Center, PA, United States; [3]Department of Psychology, Stony Brook University, NY, United States; [4]Department of Psychiatry, Stony Brook University, NY, United States

Plenary Session
Traumatic Brain Injury

Organizers: Robert E. Lenkinski, Ph.D.

Plenary Hall FG 10:30-11:30 *Moderators:* Robert E. Lenkinski, Ph.D. & Pratik Mukherjee, M.D., Ph.D.

10:30 **1072.** **Traumatic Brain Injury in War**
Geoffrey Ling

10:50 **1073.** **Biomechanics & Pathophysiology of Traumatic Brain Injury**
Ann C. McKee

11:10 **1074.** **Neuroimaging of Traumatic Brain Injury, Including Magnetoencephalography.**
Roland R. Lee

11:30 **Adjournment**

Power Pitch
Microstructure in CNS

Power Pitch Theatre, Exhibition Hall Monday 10:45-11:45

Moderators: Shannon Kolind, Ph.D. & Robert V. Mulkern, Jr., Ph.D.

Plasma 1 **0004. Whole-Brain *In-Vivo* Measurements of the Axonal G-Ratio in a Group of 19 Healthy Volunteers**

ISMRM MERIT AWARD summa cum laude

Siawoosh Mohammadi[1], Daniel Carey[2], Fred Dick[2], Joern Diedrichsen[3], Martina F. Callaghan[4], Marty Sereno[2], Marco Reisert[5], Nikolaus Weiskopf[4]no file deleteno file deleteno file deleteno file deleteno file deleteno file deleteno file deleteno file deleteno file deleteno file deleteno file deleteno file deleteno file deleteno file delete

[1]Department of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Birkbeck/UCL Centre for NeuroImaging, London, United Kingdom; [3]UCL Institute of Cognitive Neurology, London, United Kingdom; [4]Wellcome Trust Centre for Neuroimaging, UCL Institute of Neurology, London, United Kingdom; [5]University of Freiburg Medical Center, Freiburg, Germany

Plasma 2 **0005. *In Vivo* Mapping of Myelin G-Ratio in the Human Spinal Cord**

ISMRM MERIT AWARD summa cum laude

T. Duval[1], S. Lévy[1], N. Stikov[1, 2], A. Mezer[3], T. Witzel[4], B. Keil[4], V. Smith[4], L. L. Wald[4], E. Klawiter[4], J. Cohen-Adad[1, 5]

[1]Institute of Biomedical Engineering, Polytechnique Montréal, Montréal, Québec, Canada; [2]Montreal Neuronal Institute, McGill University, Montréal, Québec, Canada; [3]Edmond and Lily Safra Center for Brain Sciences (ELSC), The Hebrew University, Jerusalem, Israel; [4]A.A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA, United States; [5]Functional Neuroimaging Unit, CRIUGM, Université de Montréal, Montréal, Québec, Canada

Plasma 3 **0006. Physiological Noise Compensation in Gradient Echo Based Myelin Water Imaging**

ISMRM MERIT AWARD summa cum laude

Yoonho Nam[1], Jongho Lee[1]

[1]Department of Electrical and Computer Engineering, Seoul National University, Seoul, Korea

Plasma 4 **0007. Comparison of ViSTa Myelin Water Imaging with DTI and MT**

Han Jang[1], Yoonho Nam[1], Yangsoo Ryu[1], Jongho Lee[1]

[1]Department of Electrical and Computer Engineering, Seoul National University, Seoul, Korea

Plasma 5 **0008. The Role of Myelin Geometry on Magnetic Susceptibility-Driven Frequency Shifts: Toward Realistic Geometries**

Tianyou Xu[1], Sean Foxley[1], Michiel Kleinnijenhuis, Karla Miller

[1] Oxford Centre for Functional Magnetic Resonance Imaging of the Brain, University of Oxford, Oxford, Oxfordshire, United Kingdom

Plasma 6 **0009. Understanding Signal Sources of MT Asymmetry and Inhomogeneous MT for Imaging Myelination**

Jae-Woong Kim[1], Seung Hong Choi[2], Sung-Hong Park[1]

[1]Korea Advanced Institute of Science and Technology, Daejeon, Korea; [2]Seoul National University, Seoul, Korea

Plasma 7 **0010. Fast Absolute Myelin Water Mapping Without an External Water Standard**

Thanh D. Nguyen[1], Sneha Pandya[1], Pascal Spincemaille[1], Susan A. Gauthier[1], Yi Wang[1]

[1]Weill Cornell Medical College, New York, NY, United States

Plasma 8 **0011. Frequency Difference Mapping for Measurement of White Matter Microstructure**

ISMRM MERIT AWARD summa cum laude

Benjamin Tendler[1], Samuel Wharton[1], Richard Bowtell[1]

[1]Sir Peter Mansfield Imaging Centre, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

Plasma 9 **0012. Modelling the Effect of White Matter Microstructure on Gradient Echo Signal Evolution**

Benjamin Tendler[1], Samuel Wharton[1], Richard Bowtell[1]

[1]Sir Peter Mansfield Imaging Centre, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

Plasma 10 **0013. Possible Contribution of the Extracellular Matrix to the MRI Contrast in the Brain**

Riccardo Metere[1], Markus Morawski[2], Henrik Marschner[1], Carsten Jäger[2], Tobias Streubel[1], Stefan Geyer[1], Katja Reimann[1], Andreas Schäfer[1], Harald E. Möller[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; [2]Paul-Flechsig-Institute for Brain Research, University of Leipzig, Leipzig, Germany

Plasma 11 **0014. Signatures of Microstructure in Conventional Gradient and Spin Echo Signals**

Pippa Storey[1], Sohae Chung[1], Noam Ben-Eliezer[1], Gregory Lemberskiy[1], Yvonne W. Lui[1], Dmitry S. Novikov[1]
[1]Radiology Department, New York University School of Medicine, New York, NY, United States

Plasma 12 **0015. Dependance of the Apparent T_1 on Magetization Transfer**

Peter van Gelderen[1], Xu Jiang[1], Jeff H. Duyn[1]
[1]AMRI, LFMI, NINDS, National Institutes of Health, Bethesda, MD, United States

Plasma 13 **0016. Towards an Optimized and Standardized Amide Proton Transfer (APT) MRI Sequence and Protocol for Clinical Applications**

Hye-Young Heo[1], Yi Zhang[1], Jochen Keupp[2], Yansong Zhao[3], Michael Schar[1], Dong-Hoon Lee[1], Peter C.M van Zijl[1, 4], Jinyuan Zhou[1, 4]
[1]Russell H Morgan Department of Radiology and Radiological Science, Johns Hopkins University, Baltimore, MD, United States; [2]Philips Research, Hamburg, Germany; [3]Philips Healthcare, Cleveland, OH, United States; [4]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute , Baltimore, MD, United States

Plasma 14 **0017. Can Nuclear Overhauser Enhancement Mediated Chemical Exchange Saturation Transfer (NOE-CEST) Offer a New Insight in Acute Stroke Diagnosis?**

Yee Kai Tee[1], George WJ Harston[2], Nicholas Blockley[3], Robert Frost[3], Thomas W. Okell[3], Sivarajan Thandeswaran[2], Fintan Sheerin[4], Peter Jezzard[3], James Kennedy[2], Stephen Payne[5], Michael Chappell[5]
[1]Department of Mechatronics and BioMedical Engineering, Universiti Tunku Abdul Rahman, KL, Malaysia; [2]Acute Stroke Programme, Radcliffe Department of Medicine, Oxford University, Oxfordshire, United Kingdom; [3]Oxford Centre of Functional MRI of the Brain, Nuffield Department of Clinical Neurosciences, Oxford University, Oxfordshire, United Kingdom; [4]Department of Neuroradiology, Oxford University Hospitals NHS Trust, Oxfordshire, United Kingdom; [5]Department of Engineering Science, Institute of Biomedical Engineering, Oxford University, Oxfordshire, United Kingdom

Plasma 15 **0018. GluCEST Imaging in a Primate Model of Alzheimer's Disease**

Julien Flament[1, 2], Charlotte Gary[2, 3], James Koch[2, 4], Fabien Pifferi[5], Emmanuel Comoy[6], Jean-Luc Picq[7], Julien Valette[2, 3], Marc Dhenain[2, 3]
[1]INSERM US27, CRC-MIRCen, Fontenay-aux-Roses, France; [2]CEA/DSV/I2BM/MIRCen, Fontenay-aux-Roses, France; [3]CNRS URA 2210, Fontenay-aux-Roses, France; [4]Department of Psychology, University of Wisconsin, Oshkosh, WI, United States; [5]CNRS-MNHN UMR 7179, Brunoy, France; [6]CEA/DSV/iMETI/SEPIA, Fontenay-aux-Roses, France; [7]EA 2027, Université Paris 8, Saint-Denis, France

Power Pitch
Powerful Acquisition

Power Pitch Theatre, Exhibition Hall Monday 14:15-15:15

Moderators: Michael S. Hansen, Ph.D. & Nicole E. Seiberlich, Ph.D.

Plasma 1 **0096. Field-Map-Free First-Order Dynamic Shimming**

ISMRM MERIT AWARD summa cum laude

Yuhang Shi[1], Johanna Vannesjo[1], Karla Miller[1], Stuart Clare[1]
[1]Oxford Centre for Functional Magnetic Resonance Imaging of the Brain, Oxford, United Kingdom

Plasma 2 **0097. Spatial Motion Model Driven by the Noise Covariance Matrix of a Receive Array.**

Anna Andreychenko[1], Baudouin Denis de Senneville[1, 2], Robin J.M. Navest[1], Jan J.W. Lagendijk[1], Cornelis A.T. van den Berg[1]
[1]Imaging Division, UMC Utrecht, Utrecht, Netherlands; [2]IMB, UMR 5251 CNRS/University of Bordeaux, Bordeaux, France

Plasma 3 **0098. Improved Reconstruction of Nonlinear Spatial Encoding Techniques with Explicit Intra-Voxel Dephasing**

ISMRM MERIT AWARD summa cum laude

Kelvin Layton[1], Stefan Kroboth[1], Feng Jia[1], Sebastian Littin[1], Huijun Yu[1], Maxim Zaitsev[1]
[1]Medical Physics, University Medical Center Freiburg, Freiburg, Baden-Württemberg, Germany

Plasma 4 **0099. Magnification Imaging by Radiofrequency-Induced Nonlinear Phase Encoding**
Jun Shen[1]
[1]NIMH, Bethesda, MD, United States

Plasma 5 **0100. Reliable Phase Gradient Mapping and Phase Unwrapping for Low-SNR Images: A Novel Procedure Based on K-Space Energy Peak Quantification**
Pei-Hsin Wu[1], *Hsiao-Wen Chung*[1], *Nan-Kuei Chen*[2]
[1]Institute of Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan; [2]Brain Imaging and Analysis Center, Duke University Medical Center, Durham, NC, United States

Plasma 6 ISMRM MERIT AWARD magna cum laude **0101. Orthogonally Combined Motion- And Diffusion-Sensitized Driven Equilibrium (OC-MDSDE) Preparation for Improved Vessel Signal Suppression in 3D TSE Imaging of Peripheral Nerves**
Barbara Cervantes[1], *Jinnan Wang*[2], *Jan S. Bauer*[3], *Hendrik Kooijman*[4], *Peter Börnert*[5], *Axel Haase*[6], *Ernst J. Rummeny*[1], *Klaus Wörtler*[1], *Dimitrios C. Karampinos*[1]
[1]Diagnostic and Interventional Radiology, Technische Universität München, Munich, Germany; [2]Philips Research North America, Seattle, WA, United States; [3]Neuroradiology, Technische Universität München, Munich, Germany; [4]Philips Healthcare, Hamburg, Germany; [5]Philips Research Laboratory, Hamburg, Germany; [6]Zentralinstitut für Medizintechnik, Technische Universität München, Garching, Germany

Plasma 7 ISMRM MERIT AWARD magna cum laude **0102. Off-Resonance Positive Contrast Flow Imaging Using Extraneous Paramagnetic Biomarker-Induced Spin Labeling**
Jessica A.M. Bastiaansen[1, 2], *Helene Feliciano*[1, 2], *Andrew Coristine*[1, 2], *Matthias Stuber*[1, 2]
[1]Department of Radiology, University Hospital (CHUV) and University of Lausanne (UNIL), Lausanne, Switzerland; [2]Center for Biomedical Imaging (CIBM), Lausanne, Switzerland

Plasma 8 **0103. Hierarchically Semiseparable Generalized Encoding Matrix Compression for Fast Distortion Corrected Inverse Imaging**
Stephen F. Cauley[1, 2], *Kawin Setsompop*[1, 2], *Dan Ma*[3], *Yun Jiang*[3], *Elfar Adalsteinsson*[4], *Lawrence Wald*[1, 2], *Mark Griswold*[3, 5]
[1]Athinoula A. Martinos Center for Biomedical Imaging, MGH/HST, Charlestown, MA, United States; [2]Dept. of Radiology, Harvard Medical School, Boston, MA, United States; [3]Dept. of Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [4]Harvard-MIT Div. of Health Sci. and Tech., Dept. of Electrical Engineering and Computer Science, Cambridge, MA, United States; [5]Dept. of Radiology, , Case Western Reserve University and University Hospitals of Cleveland, Cleveland, OH, United States

Plasma 9 ISMRM MERIT AWARD magna cum laude **0104. Accelerated Multiparameter Mapping Using Low-Rank Tensors**
Anthony G. Christodoulou[1], *Zhi-Pei Liang*[1]
[1]Beckman Institute and Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States

Plasma 10 ISMRM MERIT AWARD magna cum laude **0105. Use of Pattern Recognition for Unaliasing Simultaneously Acquired Slices in Simultaneous MultiSlice Magnetic Resonance Fingerprinting**
Yun Jiang[1], *Dan Ma*[1], *Himanshu Bhat*[2], *Huihui Ye*[3, 4], *Stephen F. Cauley*[3], *Lawrence L. Wald*[3, 5], *Kawin Setsompop*[3], *Mark A. Griswold*[1, 6]
[1]Department of Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Siemens Medical Solutions USA Inc., Charlestown, MA, United States; [3]Department of Radiology, Massachusetts General Hospital, Athinoula A. Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [4]Department of Biomedical Engineering, Zhejiang University, Hangzhou, Zhejiang, China; [5]Department of Electrical Engineering and Computer Science; Harvard-MIT Division of Health Sciences a, MIT, Cambridge, MA, United States; [6]Department of Radiology, Case Western Reserve University, Cleveland, OH, United States

Plasma 11 **0106. Non-CPMG Multi-Spectral PROPELLER for Diffusion-Weighted Imaging Near Metal Implants**
Kevin M. Koch[1], *Ajeet Gaddipati*[2], *Ali Ersoz*[3], *Robert Peters*[2], *Valentina Taviani*[4], *Brian A. Hargreaves*[4], *L. Tugan Muftuler*[5]
[1]Biophysics and Radiology, Medical College of Wisconsin, Milwaukee, WI, United States; [2]GE Healthcare, Milwaukee, WI, United States; [3]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [4]Radiology, Stanford University, Stanford, CA, United States; [5]Neurosurgery and Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States

Plasma 12 **0107. Two-Dimensional Multiband Diffusion Weighted Imaging**

ISMRM MERIT AWARD summa cum laude

Valentina Taviani[1], Suchandrima Banerjee[2], Bruce L. Daniel[1], Shreyas S. Vasanawala[1], Brian A. Hargreaves[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States

Plasma 13 **0108. *In Vivo* Simultaneous Acquisition of Diffusion Tensor Imaging (DTI) and MR Elastography (MRE) in Mouse Brain**

ISMRM MERIT AWARD summa cum laude

Ziying Yin[1], Steven Kearney[2], Richard L. Magin[1], Dieter Klatt[1]
[1]1Richard and Loan Hill Department of Bioengineering, University of Illinois at Chicago, Chicago, IL, United States; [2]2Department of Mechanical and Industrial Engineering, University of Illinois at Chicago, Chicago, IL, United States

Plasma 14 **0109. Rapid and Accurate PTX B1 Mapping Using 3DREAM with Dual Interferometry**

ISMRM MERIT AWARD summa cum laude

Daniel Brenner[1], Desmond H. Y. Tse[2,3], Patrick J. Ledden[4], Claudine Neumann[1], Tony Stöcker[1,5]
[1]German Center for Neurodegenerative Diseases (DZNE), Bonn, Germany; [2]Faculty of Psychology, Maastricht University, Maastricht, Netherlands; [3]Department of Radiology, Maastricht University Medical Centre, Maastricht, Netherlands; [4]Nova Medical, Inc., Wilmington, MA, United States; [5]Department of Physics and Astronomy, University of Bonn, Bonn, Germany

Plasma 15 **0110. Accelerating Bloch-Siegert B1+ Mapping Using Modified Iterative SENSE and ESPIRiT (iSENSE)**

Mohammad Mehdi Khalighi[1], Peng Lai[1]
[1]Applied Science Lab, GE Healthcare, Menlo Park, CA, United States

Power Pitch
The Cardiovascular Power Hour

Power Pitch Theatre, Exhibition Hall Monday 16:30-17:30

Moderators: Daniel B. Ennis, Ph.D. & Reza Nezafat, Ph.D.

Plasma 1 **0174. Gradient-Induced Voltages on 12-Lead ECGs During High-Duty-Cycle MRI Sequences and a Theoretically Based Method to Remove Them**

HuaLei Zhang[1], Zion Tsz ho Tse[2], Charles L. Dumoulin[3], Ronald Watkins[4], Wei Wang[1], Jay Ward[5], Raymond Kwong[1], William Stevenson[1], Ehud J. Schmidt[1]
[1]Brigham and Women's Hospital, Boston, MA, United States; [2]University of Georgia, GA, United States; [3]Cincinnati Children's Hospital Medical Center, Cincinnati, United States; [4]Stanford University, CA, United States; [5]E-TROLZ, Inc, Andover, MA, United States

Plasma 2 **0175. Automatic Detection of Inflammatory 'hotspots' in Abdominal Aortic Aneurysms to Identify Patients at Risk of Aneurysm Expansion and Rupture**

ISMRM MERIT AWARD magna cum laude

Yolanda Georgia Koutraki[1,2], Chengjia Wang[1,3], Jennifer Robson[2], Olivia Mcbride[2], Rachael O. Forsythe[2], Tom J. MacGillivray[1], Calum D. Gray[1], Keith Goatman[3], J. Camilleri-Brennan[2], David E. Newby[1,2], Scott I. Semple[1,2]
[1]Clinical Research Imaging Centre, University of Edinburgh, Edinburgh, United Kingdom; [2]Centre for Cardiovascular Science, University of Edinburgh, Edinburgh, United Kingdom; [3]Toshiba Medical Visualization System - Europe, Edinburgh, United Kingdom

Plasma 3 **0176. *In-Vivo* Lipid Quantification in Carotid Plaques Using Multi-Slice T2 Mapping: Histological Validation**

Luca Biasiolli[1,2], Joshua T. Chai[1], Linqing Li[3], Ashok Handa[4], Peter Jezzard[3], Robin P. Choudhury[1], Matthew D. Robson[2]
[1]AVIC, Radcliffe Department of Medicine, University of Oxford, Oxford, United Kingdom; [2]OCMR, Radcliffe Department of Medicine, University of Oxford, Oxford, United Kingdom; [3]FMRIB, Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, United Kingdom; [4]Nuffield Department of Surgical Sciences, University of Oxford, Oxford, United Kingdom

Plasma 4 **0177. Coronary Endothelial Function Assessment Using Self-Gated Cardiac Cine MRI with Golden Angle Acquisition and K-T Sparse SENSE**

Jerome Yerly[1,2], Giulia Ginami[1,2], Giovanna Nordio[1,2], Matthias Stuber[1,2]
[1]Department of Radiology, University Hospital (CHUV) and University of Lausanne (UNIL), Lausanne, Switzerland; [2]Center for Biomedical Imaging (CIBM), Lausanne, Switzerland

Plasma 5 **0178. Inter-Study Repeatability of Self-Gated Quantitative Myocardial Perfusion MRI**

ISMRM MERIT AWARD
summa cum laude

Devavrat Likhite[1], Promporn Suksaranjit[2], Chris McGann[2], Brent Wilson[2], Imran Haider[2], Ganesh Adluru[1], Edward DiBella[1]
[1]UCAIR, University of Utah, Salt Lake City, UT, United States; [2]Division of Cardiovascular Medicine, Department of Medicine, University of Utah, Salt Lake City, UT, United States

Plasma 6 **0179. Initial Experience in Patients for Highly Accelerated Free-Breathing Whole-Heart Coronary MRA**

Christoph Forman[1], Christoph Tillmanns[2], Michael O. Zenge[1], Michaela Schmidt[1]
[1]Siemens AG, Healthcare, Imaging and Therapy Systems, Magnetic Resonance, Erlangen, Germany; [2]Diagnostikum Berlin, Berlin, Germany

Plasma 7 **0180. Accelerated Four-Dimensional, Multiphase, Steady-State Imaging with Contrast Enhancement (MUSIC) Using Parallel Imaging and Compressed Sensing**

Ziwu Zhou[1], Fei Han[1], Stanislas Rapacchi[1], Ihab Ayad[2], Isidro Salusky[3], Adam Plotnik[1], Paul Finn[1], Peng Hu[1]
[1]Radiology, UCLA, Los Angeles, CA, United States; [2]Anesthesiology, UCLA, Los Angeles, CA, United States; [3]Pediatrics, UCLA, Los Angeles, CA, United States

Plasma 8 **0181. Dual Agent Relaxivity Cancellation (DARC) Imaging, a Novel Imaging Method for Dark Blood Post-Contrast Imaging: Application to MR Lymphangiography**

ISMRM MERIT AWARD
magna cum laude

Jeffrey H. Maki[1], Noah Briller[1], Peter C. Neligan[2], Gregory J. Wilson[1]
[1]Radiology, University of Washington, Seattle, WA, United States; [2]Plastic Surgery, University of Washington, Seattle, WA, United States

Plasma 9 **0182. CMR-Footprinting: Quantifying Tissue Parameters with Clinical Pulse Sequence Simulations Improves Measurement Accuracy - An Example with MOLLI T1 Mapping**

Christos G. Xanthis[1, 2], Sebastian L. Bidhult[1], Georgios Kantasis[1, 2], Mikael Kanski[1], Einar Heiberg[1, 3], Håkan Arheden[1], Anthony H. Aletras[1, 2]
[1]Cardiac MR group Lund, Dept. of Clinical Physiology, Lund University, Lund, Skåne, Sweden; [2]Department of Computer Science and Biomedical Informatics, University of Thessaly, Lamia, Greece; [3]Department of Biomedical Engineering, Faculty of Engineering, Lund University, Lund, Skåne, Sweden

Plasma 10 **0183. Modified Wideband 3D Late Gadolinium Enhancement (LGE) MRI for Patients with Implantable Cardiac Devices**

ISMRM MERIT AWARD
summa cum laude

Shams Rashid[1], Stanislas Rapacchi[1], Kalyanam Shivkumar, [12], Adam Plotnik[1], J. Paul Finn[1, 3], Peng Hu[1, 3]
[1]Radiological Sciences, University of California, Los Angeles, Los Angeles, CA, United States; [2]UCLA Cardiac Arrhythmia Center, University of California, Los Angeles, Los Angeles, CA, United States; [3]Biomedical Physics Inter-Departmental Graduate Program, University of California, Los Angeles, Los Angeles, CA, United States

Plasma 11 **0184. Black Blood Late Gadolinium Enhancement (BB-LGE) Using a Joint T_2 Magnetization Preparation and Inversion Preparation**

ISMRM MERIT AWARD
magna cum laude

Tamer Basha[1], Sébastien Roujol[1], Kraig V. Kissinger[1], Beth Goddu[1], Warren J. Manning[1, 2], Reza Nezafat[1]
[1]Department of Medicine, Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA, United States; [2]Radiology, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, United States

Plasma 12 **0185. "Squashing the Peanut": What It Means for *In-Vivo* Cardiac DTI**

ISMRM MERIT AWARD
summa cum laude

Andrew D. Scott[1, 2], Sonia Nielles-Vallespin, [13], Pedro Ferreira[1, 2], Laura-Ann McGill, [12], Dudley Pennell[1, 2], David Firmin, [12]
[1]NIHR Cardiovascular Biomedical Research Unit, The Royal Brompton Hospital, London, United Kingdom; [2]National Heart and Lung Institute, Imperial College London, London, United Kingdom; [3]National Heart, Lung and Blood Institute, National Institutes of Health, Bethesda, MD, United States

Plasma 13 **0186. Diffusion-Tensor Imaging Study of Myocardial Architecture of Situs Inversus and Situs Solitus Mutant Mouse Hearts**

Yijen Lin Wu[1, 2], Yu Chen[1], XiaoQin Liu[1], Fang-Cheng Yeh[3], T. Kevin Hitchens[4], George C. Gabriel[1], Cecilia Wen Ya Lo[1]

[1]Developmental Biology, University of Pittsburgh, Pittsburgh, PA, United States; [2]Rangos Research Center Imaging Core, Children's Hospital of Pittsburgh of UPMC, Pittsburgh, PA, United States; [3]Psychology, Carnegie Mellon University, Pittsburgh, PA, United States; [4]Pittsburgh NMR Center for Biomedical Research, Carnegie Mellon University, Pittsburgh, PA, United States

Plasma 14 **0187. Mechanical Activation Time Mapping in Heart Failure Patients with and Without Myocardial Scar Using Cine DENSE MRI**

ISMRM MERIT AWARD summa cum laude

Daniel A. Auger[1], Sophia X. Cui[1], Xiao Chen[1], Jeffrey W. Holmes[1], Kenneth C. Bilchick[2], Frederick H. Epstein[1, 3]
[1]Department of Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [2]Department of Medicine, Cardiovascular Medicine, University of Virginia, Charlottesville, VA, United States; [3]Department of Radiology and Medical Imaging, University of Virginia, Charlottesville, VA, United States

Plasma 15 **0188. A Bayesian Approach for Accelerated Phase Contrast MRI**

Adam Rich[1], Lee C. Potter[1], Ning Jin[2], Joshua Ash[1], Orlando Simonetti[3], Rizwan Ahmad[3]
[1]Electrical and Computer Engineering, The Ohio State University, Columbus, OH, United States; [2]Siemens Medical Solution, Columbus, OH, United States; [3]Davis Heart and Lung Research Institute, The Ohio State University, Columbus, OH, United States

Plasma 16 **0189. Validation of Radially Undersampled 4D-Flow-MRI in an Animal Model of Portal Hypertension**

Alex Frydrychowicz[1], Alejandro Roldan-Alzate[2], Emily Winslow[2], Dan Consigny[2], Camilo Campo[2], Utaroh Motosugi[2], Kevin M. Johnson[2], Christopher J. François[2], Oliver Wieben[2], Scott B. Reeder[2]
[1]Clinic for Radiology and Nuclear Medicine, University Hospital Schleswig-Hosltein, Campus Lübeck, Lübeck, Schleswig-Holstein, Germany; [2]University of Wisconsin - Madison, WI, United States

Power Pitch
ASL Methods: Neuro

Power Pitch Theatre, Exhibition Hall Tuesday 10:00-11:00

Moderators: Susan T. Francis, Ph.D. & Jun Hua, Ph.D.

Plasma 1 **0264. Time- And Vessel Encoded PCASL: A Free Lunch with All the Trimmings**

ISMRM MERIT AWARD summa cum laude

Thomas W. Okell[1], Wouter Teeuwisse*[2, 3], Michael A. Chappell[1, 4], Matthias J.P. van Osch[2, 3]*
[1]FMRIB Centre, Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]dept. of Radiology, C.J. Gorter Center for High Field MRI, Leiden University Medical Center, Leiden, Netherlands; [3]Leiden Institute for Brain and Cognition, Leiden, Netherlands; [4]IBME, Department of Engineering Sciences, University of Oxford, Oxford, United Kingdom

Plasma 2 **0265. A Novel Multiphase Scheme for Simultaneous ASL and BOLD Acquisition**

ISMRM MERIT AWARD summa cum laude

Paula Croal[1], Emma Hall[1], Penny Gowland[1], Susan Francis[1]
[1]Sir Peter Mansfield Imaging Centre, Department of Physics & Astronomy, The University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

Plasma 3 **0266. Wedge-Shaped Slice-Selective Adiabatic Inversion Pulse for Bolus Temporal Width Control in Pulsed Arterial Spin Labeling**

Jia Guo[1], Richard B. Buxton[1], Eric C. Wong[1, 2]
[1]Radiology, UC San Diego, La Jolla, CA, United States; [2]Psychiatry, UC San Diego, La Jolla, CA, United States

Plasma 4 **0267. Multiband Background Suppressed Turbo-FLASH Imaging with CAIPIRINHA for Whole-Brain Distortion-Free PCASL Imaging at 3 and 7T**

ISMRM MERIT AWARD summa cum laude

Yi Wang[1], Steen Moeller[2], Xiufeng Li[2], An T. Vu[2], Kate Krasileva[1], Kamil Ugurbil[2], Essa Yacoub[2], Danny JJ Wang[1]
[1]Neurology, UCLA, Los Angeles, CA, United States; [2]Center of Magnetic Resonance Research, University of Minnesota, MN, United States

Plasma 5 **0268. Single-Shot 3D-EPI PCASL with Background Suppression**

ISMRM MERIT AWARD magna cum laude

Markus Boland[1], Rüdiger Stirnberg[1], Daniel Brenner[1], Tony Stöcker[1, 2]
[1]German Center for Neurodegenerative Diseases (DZNE), Bonn, Germany; [2]Department of Physics and Astronomy, University of Bonn , Germany

Plasma 6 **0269. Single-Shot Whole-Brain Background-Suppressed PCASL MRI with 1D Accelerated 3D RARE Stack-Of-Spirals Readout**

ISMRM MERIT AWARD magna cum laude

Marta Vidorreta[1], Ze Wang[2, 3], Yulin V. Chang[1, 4], María A. Fernández-Seara[5], John A. Detre[1]
[1]Department of Neurology, University of Pennsylvania, Philadelphia, PA, United States; [2]Center for Cognition and Brain Disorders, Hangzhou Normal University, Hangzhou, Zhejiang Province, China; [3]Departments of Radiology and Psychiatry, University of Pennsylvania, Philadelphia, PA, United States; [4]Department of Radiology, University of Pennsylvania, PA, United States; [5]Functional Neuroimaging Laboratory, CIMA, University of Navarra, Navarra, Spain

Plasma 7 **0270. Improving Motion Robustness of Pseudo-Continuous Arterial Spin Labeling by Using Real-Time Motion Correction**

ISMRM MERIT AWARD magna cum laude

Michael Helle[1], Peter Koken[1], Julien Sénégas[1]
[1]Philips Research, Hamburg, Germany

Plasma 8 **0271. Prospective Motion Correction for Artefact Reduction in Pseudo-Continuous Arterial Spin Labelling with a 3D GRASE Readout.**

Benjamin Knowles[1], Federico von Samson-Himmelstjerna[2, 3], Matthias Guenther[2, 4], Maxim Zaitsev[1]
[1]Medical Physics, University Medical Centre, Freiburg, Germany; [2]Fraunhofer Mevis, Bremen, Germany; [3]Charité Medical University, Center for Stroke Research, Berlin, Germany; [4]University of Bremen, Germany

Plasma 9 **0272. An Off-Resonance Correction Method for Vessel-Encoded Pseudo-Continuous Arterial Spin Labeling Using the Optimized Encoding Scheme**

ISMRM MERIT AWARD magna cum laude

Eleanor S K Berry[1], Peter Jezzard[1], Thomas W. Okell[1]
[1]FMRIB centre, Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, United Kingdom

Plasma 10 **0273. 3D Weighted Least Squares Algorithm for Partial Volume Effect Correction in ASL Images**

ISMRM MERIT AWARD magna cum laude

Pablo García-Polo[1, 2], Adrian Martín[3, 4], Virginia Mato[5], Alicia Quirós[6], Fernando Zelaya[7], Juan Antonio Hernandez-Tamames[5]
[1]A. A. Martinos Center for Biomedical Imaging, Mass. General Hospital, M+Visión Advanced Fellowship, Charlestown, MA, United States; [2]Centre for Biomedical Technology - Universidad Politécnica de Madrid, Pozuelo de Alarcón, Madrid, Spain; [3]Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA, United States; [4]3Applied Mathematics, Universidad Rey Juan Carlos, Móstoles, Madrid, Spain; [5]Department of Electrical Technology, Universidad Rey Juan Carlos, Móstoles, Madrid, Spain; [6]Cardiology, Hospital Clínico San Carlos, Madrid, Spain; [7]Department of Neuroimaging, King's College London, London, United Kingdom

Plasma 11 **0274. Dynamic 3D ASL in 20 Seconds Per Frame with Model-Based Image Reconstruction**

ISMRM MERIT AWARD summa cum laude

Li Zhao[1], Samuel W. Fielden[2], Xue Feng[2], Max Wintermark[3], John P. Mugler III[4], Josef Pfeuffer[5], Craig H. Meyer[2, 4]
[1]Radiology, Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA, United States; [2]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [3]Radiology, Stanford University, Stanford, CA, United States; [4]Radiology, University of Virginia, Charlottesville, VA, United States; [5]Application Development, Siemens Healthcare, Erlangen, Germany

Plasma 12 **0275. Subtraction Free Arterial Spin Labeling: A New Bayesian-Inference Based Approach for Gaining Perfusion Data from Time Encoded Data**

ISMRM MERIT AWARD summa cum laude

Federico C A von Samson-Himmelstjerna[1, 2], Michael A. Chappell[3], Jan Sobesky[2], Matthias Günther[1]
[1]Fraunhofer MEVIS, Bremen, Germany; [2]Center for Stroke Research (CSB), Charité University Medicine Berlin, Berlin, Germany; [3]Institute of Biomedical Engineering & FMRIB Centre, University of Oxford, Oxforshire, United Kingdom

Plasma 13 **0276. Arterial Spin Labeling Without Control/label Pairing and Post-Labeling Delay: An MR Fingerprinting Implementation**

Pan Su[1], Deng Mao[1], Peiying Liu[1], Yang Li[1], Babu G. Welch[2], Hanzhang Lu[1]
[1]Advanced Imaging Research Center, The University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Department of Neurological Surgery, The University of Texas Southwestern Medical Center, Dallas, TX, United States

Plasma 14 **0277. Diffusion Sensitivity of 3D-GRASE in ASL Perfusion**

Xiang He[1], Thang Le[2], Hoi-Chung Leung[2], Parsey Ramin[3], Mark Schweitzer[1]
[1]Department of Radiology, Stony Brook University, Stony Brook, NY, United States; [2]Department of Psychology, Stony Brook University, NY, United States; [3]Department of Psychiatry, Stony Brook University, NY, United States

Plasma 15 **0278. Comparison of Cerebral Blood Flow and Arterial Transit Time Mapping Methods: Look-Locker ASL, Hadamard Encoded ASL, and Multi-TI ASL with Variable Bolus and TR**
Megan Johnston[1], Youngkyoo Jung[1, 2]
[1]Biomedical Engineering, Wake Forest School of Medicine, Winston-Salem, NC, United States; [2]Radiology, Wake Forest School of Medicine, Winston-Salem, NC, United States

Power Pitch
The Cutting Edge of Diffusion MRI

Power Pitch Theatre, Exhibition Hall Tuesday 13:30-14:30

Moderators: Helen Zhou, Ph.D. & David Raffelt, Ph.D.

Plasma 1 **0339. SLIce Dithered Enhanced Resolution Simultaneous MultiSlice (SLIDER-SMS) for High Resolution (700 Um) Diffusion Imaging of the Human Brain**
Kawin Setsompop[1], Berkin Bilgic[1], Aapo Nummenmaa[1], Qiuyun Fan[1], Stephen F. Cauley[1], Susie Huang[1], Itthi Chatnuntawech[2], Yogesh Rathi[3], Thomas Witzel[1], Lawrence L. Wald[1]
[1]Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [2]Massachusetts Institute of Technology, Cambridge, MA, United States; [3]Brigham and Women's Hospital, Boston, MA, United States

Plasma 2 **0340. Higher-Order Spin-Echo Selection for Reduced FOV Diffusion Imaging of the Brainstem at 7T**
Bertram Jakob Wilm[1], Signe Johanna Vannesjo[1], Klaas Paul Pruessmann[1]
[1]University and ETH Zurich, Zurich, Switzerland

Plasma 3 **0341. Navigated PSF Mapping for Distortion-Free High-Resolution *In-Vivo* Diffusion Imaging at 7T**
Myung-Ho In[1], Posnansky Oleg[1], Oliver Speck[1]
[1]Biomedical Magnetic Resonance, Otto-von-Guericke University, Magdeburg, Germany

Plasma 4 **0342. Compressed-Sensing-Accelerated Spherical Deconvolution**
Jonathan I. Sperl[1], Tim Sprenger, [12], Ek T. Tan[3], Marion I. Menzel[1], Christopher J. Hardy[3], Luca Marinelli[3]
[1]GE Global Research, Munich, BY, Germany; [2]IMETUM, Technical University Munich, Munich, BY, Germany; [3]GE Global Research, Niskayuna, NY, United States

Plasma 5 **0343. 3D Myofiber Reconstruction from *In Vivo* Cardiac DTI Data Through Extraction of Low Rank Modes**
Martin Genet[1], Constantin von Deuster[1, 2], Christian T. Stoeck[1, 2], Sebastian Kozerke[1, 2]
[1]Institut for Biomedical Engineering, ETHZ, Zurich, Switzerland; [2]Imaging Sciences and Biomedical Engineering, KCL, London, United Kingdom

Plasma 6 **0344. *In Vivo* and *Ex Vivo* Characterization of Extracellular Space (ECS) in Mouse GBM Using PGSE and OGSE**
ISMRM MERIT AWARD magna cum laude
Olivier Reynaud[1, 2], Kerryanne V. Winters[1, 2], Dung Minh Hoang[1, 2], Youssef Zaim Wadghiri[1, 2], Dmitry S. Novikov[1, 2], Sungheon Gene Kim[1, 2]
[1]Center for Advanced Imaging Innovation and Research (CAI2R), Department of Radiology, New York University School of Medicine, New York, NY, United States; [2]Bernard and Irene Schwartz Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States

Plasma 7 **0345. Detection of Curvature and Microscopic Anisotropy of Neurites at Short Length Scales**
Jonathan Scharff Nielsen[1], Tim B. Dyrby[1], Henrik Lundell[1]
[1]Danish Research Centre for Magnetic Resonance, Copenhagen University Hospital Hvidovre, Hvidovre, Denmark

Plasma 8 **0346. Assessing Diffusion Time Effects on Microstructural Comparment Estimates in Human White Matter Using 7T DwSTEAM**
ISMRM MERIT AWARD summa cum laude
Silvia De Santis[1, 2], Derek K. Jones[1], Alard Roebroeck[2]
[1]CUBRIC Cardiff University, Cardiff, United Kingdom; [2]Maastricht University, Maastricht, Netherlands

Plasma 9 **0347. Why Should Axon Diameter Mapping Use Low Frequency OGSE? Insight from Simulation**
Ivana Drobnjak[1], Hui Zhang[1], Andrada Ianus[1], Enrico Kaden[1], Daniel C. Alexander[1]
[1]Centre for Medical Image Computing, Department of Computer Science, University College London, London, United Kingdom

Plasma 10 **0348. Evaluating a Semi-Continuous Multi-Compartmental Intra-Voxel Incoherent Motion (IVIM) Model in the Brain: How Does the Method Influence the Results in IVIM?**

Vera Catharina Keil[1], Burkhard Maedler[2], Hans Heinz Schild[1], Dariusch Reza Hadizadeh[1]
[1]Radiology, UK Bonn, Bonn, NRW, Germany; [2]Radiology MRI Unit, PHILIPS Healthcare, Hamburg, Germany

Plasma 11 **0349. Tissue-Type Segmentation Using Non-Negative Matrix Factorization of Multi-Shell Diffusion-Weighted MRI Images**

ISMRM MERIT AWARD summa cum laude

Ben Jeurissen[1], Jacques-Donald Tournier[2, 3], Jan Sijbers[1]
[1]iMinds-Vision Lab, Dept. of Physics, University of Antwerp, Antwerp, Belgium; [2]Centre for the Developing Brain, King's College London, London, United Kingdom; [3]Dept. of Biomedical Engineering, King's College London, London, United Kingdom

Plasma 12 **0350. On Evaluating the Accuracy and Biological Plausibility of Diffusion MRI Tractograms**

ISMRM MERIT AWARD summa cum laude

David Romascano[1], Alessandro Dal Palú[2], Jean-Philippe Thiran[1, 3], Alessandro Daducci[1, 4]
[1]Signal Processing Laboratory (LTS5), École Polytechnique Fédérale de Lausanne, Lausanne, Vaud, Switzerland; [2]Department of Mathematics and Computer Science, University of Parma, Parma, Italy; [3]Department of Radiology, University Hospital Center and University of Lausanne, Lausanne, Vaud, Switzerland; [4]Center for Biomedical Imaging, Signal Processing Core,, Lausanne, Vaud, Switzerland

Plasma 13 **0351. A Generative Model of White Matter Axonal Orientations Near the Cortex**

Michiel Cottaar[1], Saad Jbabdi[1], Matthew F. Glasser[2], Krikor Dikranian[2], David C. van Essen[2], Timothy E. Behrens[1], Stamatios N. Sotiropoulos[1]
[1]FMRIB Centre, University of Oxford, Oxford, United Kingdom; [2]Washington University School of Medicine, Saint Louis, MO, United States

Plasma 14 **0352. Dynamic' Seeding: Informed Placement of Streamline Seeds in Whole-Brain Fibre-Tracking**

ISMRM MERIT AWARD magna cum laude

Robert Elton Smith[1], J-Donald Tournier[2, 3], Fernando Calamante[1, 4], Alan Connelly[1, 4]
[1]Imaging division, The Florey Institute of Neuroscience and Mental Health, Heidelberg, Victoria, Australia; [2]Centre for the Developing Brain, King's College London, London, United Kingdom; [3]Department of Biomedical Engineering, King's College London, London, United Kingdom; [4]Department of Medicine, The University of Melbourne, Heidelberg, Victoria, Australia

Plasma 15 **0353. A Machine Learning Based Approach to Fiber Tractography**

ISMRM MERIT AWARD magna cum laude

Peter F. Neher[1], Michael Götz[1], Tobias Norajitra[1], Christian Weber[1], Klaus H. Maier-Hein[1]
[1]Medical Image Computing Group, German Cancer Research Center (DKFZ), Heidelberg, Germany

Power Pitch
Molecular Imaging & Spectroscopy

Power Pitch Theatre, Exhibition Hall Tuesday 16:00-17:00

Moderators: Peter van Zijl, Ph.D. & Carolyn E. Mountford, D.Phil.

Plasma 1 **0414. Citicoline as a Theranostic Agent Detected by CEST MRI**

Hanwei Chen[1, 2], Yuguo Li[3, 4], Anna Jablonska[1], Shuixing Zhang[5], Jeff W. Bulte[1, 3], Peter C.M. Van Zijl, [46], Mirek Janowski[1, 7], Piotr Walczak[1], Guanshu Liu, [13]
[1]Department of Radiology, Johns Hopkins University, Baltimore, MD, United States; [2]Radiology, Guangzhou Panyu Central Hospital, Guangzhou, Guangdong, China; [3]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States; [4]Department of Radiology, Johns Hopkins University, Baltimore, MD , United States; [5]Department of Radiology, Guangdong General Hospital, Guangzhou, Guangdong, China; [6]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD , United States; [7]NeuroRepair Department, MMRC PAS, Warsaw, Poland

Plasma 2 **0415. MEMRI of Organotypic Rat Hippocampal Slice Cultures**

ISMRM MERIT AWARD magna cum laude

Alexia Daoust[1], Stephen Dodd[1], Alan Koretsky[1]
[1]NINDS, LFMI, NIH, Bethesda, MD, United States

Plasma 3 **0416. Radical-Free Mixture of Co-Polarized 13C-Metabolites for Probing Separate Biochemical Pathways Simultaneously *In Vivo* by Hyperpolarized 13C MR**

ISMRM MERIT AWARD summa cum laude

Jessica AM Bastiaansen[1, 2], Hikari AI Yoshihara[3, 4], Andrea Capozzi[3], Juerg Schwitter[4], Matthew E. Merritt[5], Arnaud Comment[3]
[1]Department of Radiology, University Hospital (CHUV) and University of Lausanne (UNIL), Lausanne, Switzerland; [2]Center for Biomedical Imaging (CIBM), Lausanne, Switzerland; [3]Institute of Physics of Biological Systems, EPFL, Lausanne, Switzerland; [4]Division of Cardiology and Cardiac MR Center, University Hospital Lausanne (CHUV), Lausanne, Switzerland; [5]Advanced Imaging Research Center,Department of Radiology,Molecular Biophysics,Biomedical Engineering, University of Texas Southwestern Medical Center, Dallas, TX, United States

Plasma 4 **0417. *In Vivo* PH Imaging of Mouse Kidneys Using a Frequency-Dependent ParaCEST Agent**

Yunkou Wu[1], Shanrong Zhang[1], Todd C. Soesbe[1], A. Dean Sherry[1, 2]
[1]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States; [2]Department of Chemistry, The University of Texas at Dallas, Richardson, TX, United States

Plasma 5 **0418. Image-Guided Delivery of Liposomal Nano-Constructs Targeting Tumor Vasculature**

ISMRM MERIT AWARD magna cum laude

Sudath Hapuarachchige[1], Yoshinori Kato[1, 2], Wenlian Zhu[1], Joseph M. Backer[3], Marina V. Backer[3], Susanta K. Sarkar[4], Dmitri Artemov[1, 5]
[1]Department of Radiology & Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Life Science Tokyo Advanced Research Center, Hoshi University, Japan; [3]SibTec, Inc.,, Brookfield, CT, United States; [4]Sanofi Oncology, Cambridge, MA, United States; [5]Department of Oncology, Johns Hopkins University School of Medicine, Baltimore, MD, United States

Plasma 6 **0419. Micro-MRI and Fluorescence Imaging of Myeloperoxidase Activity in Human Brain Vascular Pathology**

Dung Minh Hoang[1], Matthew J. Gounis[2], Youssef Zaim Wadghiri[1], Peter Caravan[3], Alexei A. Bogdanov Jr.[2]
[1]Radiology, Bernard and Irene Schwartz Center for Biomedical Imaging, New York University, New York, NY, United States; [2]Radiology, University of Massachusetts Medical School, Worcester, MA, United States; [3]Radiology, A.Martinos' Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States

Plasma 7 **0420. Molecular Imaging Studies of a Robust Gd-Sucrose Scaffold Applied to MR-Colonography**

Gary V. Martinez[1], Parastou Foroutan[2], Valerie E. Moberg[1], Suryakiran Navath[3], Roha Afzal[1], Robert J. Gillies[1], Eugene A. Mash[3], David L. Morse[1]
[1]Department of Cancer Imaging and Metabolism, H. Lee Moffitt Cancer Center & Research Institute, Tampa, FL, United States; [2]Bruker Biospin, Billerica, MA, United States; [3]Department of Chemistry and Biochemistry, University of Arizona, Tucson, AZ, United States

Plasma 8 **0421. Two-Dimensional Shaped Voxel MRS in the Human Brain at 3 T**

ISMRM MERIT AWARD summa cum laude

Patrick Waxmann[1], Ralf Mekle[1], Florian Schubert[1], Andre Kuehne[2], Tomasz Dawid Lindel[1], Frank Seifert[1], Oliver Speck[3], Bernd Ittermann[1]
[1]Physikalisch-Technische Bundesanstalt (PTB), Braunschweig und Berlin, Berlin, Germany; [2]Medical University of Vienna, Vienna, Austria; [3]Otto-von-Guericke-University, Magdeburg, Germany

Plasma 9 **0422. *In Vivo* Quantification of ATP Synthesis Rates in Rat Skeletal Muscle by ^{31}P Spectroscopic Magnetic Resonance Fingerprinting**

ISMRM MERIT AWARD summa cum laude

Charlie Yi Wang[1], Yuchi Liu[1], Mark Alan Griswold, [12], Xin Yu, [12]
[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Radiology, Case Western Reserve University, Cleveland, OH, United States

Plasma 10 **0423. ^{13}C MRS of the Brain Without Decoupling**

ISMRM MERIT AWARD summa cum laude

Keshav Datta[1], Arif Wibowo[2], Stephen R. Lynch[2], Daniel Spielman[3]
[1]Dept. of Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Dept. of Chemistry, Stanford University, CA, United States; [3]Dept. of Radiology, Stanford University, Stanford, CA, United States

Plasma 11 **0424. In Vivo Assessment of Intracellular NAD^+/NADH Redox State in Human Brain at 4 Tesla**

Ming Lu[1], Wei Chen[1], Xiao-Hong Zhu[1]
[1]Center for Magnetic Resonance Research, University of Minnesota Medical School, Minneapolis, MN, United States

Plasma 12 **0425. Diffusion-Weighted MR Spectroscopy Feasibility in Clinical Studies at 3 T : The Effect of Reducing the Acquisition Time Investigated by Bootstrapping**
ISMRM MERIT AWARD magna cum laude

Francesca Branzoli[1, 2], Daniel Garcia-Lorenzo[1, 2], Romain Valabrègue[1, 2], Stephane Lehéricy[1, 2]
[1]Institut du Cerveau et de la Moelle épinière – ICM, Centre de Neuroimagerie de Recherche – CENIR, Paris, France; [2]Sorbonnes Université, Université Pierre et Marie Curie and Inserm UMR-S1127; CNRS, UMR 7225, Paris, France

Plasma 13 **0426. Metabolome Profiling by HRMAS NMR Spectroscopy of Hyperfunctioning Parathyroid Glands**
ISMRM MERIT AWARD magna cum laude

Stéphanie Battini[1], Alessio Imperiale[1, 2], David Taieb[3], Karim Elbayed[1], Frédéric Sebag[4], Laurent Brunaud[5], Izzie-Jacques Namer[1, 6]
[1]ICube laboratory UMR 7357, University of Strasbourg/CNRS and FMTS, Strasbourg, France; [2]University Hospitals of Strasbourg, Department of Biophysics and Nuclear Medicine, Hautepierre , Strasbourg, France; [3]La Timone University Hospital, European Center for Research in Medical Imaging, Aix-Marseille University, Marseille, France; [4]Department of Endocrine Surgery, La Timone University Hospital, Aix-Marseille University, Marseille, France; [5]Department of Digestive, Hepato-Biliary and Endocrine Surgery, Brabois University Hospital, Nancy, France; [6]University Hospitals of Strasbourg, Department of Biophysics and Nuclear Medicine, Hautepierre Hospital, Strasbourg, France

Plasma 14 **0427. Metabolomic Assessment of Succinate Dehydrogenase Dysfunction in Pheochromocytomas and Paragangliomas by 1H-HRMAS NMR Spectroscopy: Clinical and Pathophysiological Implications**
ISMRM MERIT AWARD magna cum laude

Alessio Imperiale[1, 2], Stéphanie Battini[1], Philippe Roche[3], François-Marie Moussallieh[1], Ercument A Cicek[4], Frédéric Sebag[5], Laurent Brunaud[6], Anne Barlier[7], Karim Elbayed[1], Anderson Loundou[8], Philippe Bachellier[9], Bernard Goichot[10], Constantine A Stratakis[11, 12], Karel Pacak[13], David Taieb[14], Izzie-Jacques Namer[1, 2]
[1]ICube laboratory UMR 7357, University of Strasbourg/CNRS and FMTS, Strasbourg, France; [2]University Hospitals of Strasbourg, Department of Biophysics and Nuclear Medicine, Hautepierre Hospital, Strasbourg, France; [3]Integrative Structural & Chemical Biology (iSCB) & INT-3D Molecular Modeling Platform, Cancer Resear, CNRS UMR7258; INSERM U1068; Institut Paoli Calmettes; Aix-Marseille University UM105, Marseille, France; [4]Lane Center for Computational Biology, School of Computer Science, , Carnegie Mellon University, 5000 Forbes Ave, Pittsburgh, PA 15222 , United States; [5]Department of Endocrine Surgery, La Timone University Hospital, Aix-Marseille University, Marseille, France; [6]Department of Digestive, Hepato-Biliary and Endocrine Surgery, Brabois University Hospital, Nancy, France; [7]Laboratory of Biochemistry and Molecular Biology, Conception Hospital, Aix-Marseille, University, Marseille, France; [8]Department of Public Health, Aix-Marseille University, Marseille, France; [9]Department of Visceral Surgery and Transplantation, Hautepierre Hospital, University Hospitals of Strasbourg, Strasbourg, France; [10]Department of Internal Medicine, Diabetes and Metabolic Disorders, Hautepierre Hospital, University Hospitals of Strasbourg, Strasbourg, France; [11]Section on Genetics and Endocrinology (SEGEN), Program on Developmental Endocrinology and Genetics (PDEGEN), Bethesda, United States; [12]Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, United States; [13]Program in Reproductive and Adult Endocrinology, Eunice Kennedy Shriver National Institute of Child Health and Human Development, Bethesda, United States; [14]La Timone University Hospital, European Center for Research in Medical Imaging, Marseille, France

Plasma 15 **0428. Adapting Volumetric 1H Echo-Planar Spectroscopic Imaging of the Human Brain from 3 to 7 Tesla**

Karim Snoussi[1, 2], Joseph S. Gillen[1, 2], Michael Schär[1, 2], Richard A.E. Edden[1, 2], Andrew A. Maudsley[3], Peter B. Barker[1, 2]
[1]Russel H. Morgan Department of Radiology and Radiological Science, Johns Hopkins University School of Medidine, Baltimore, MD, United States; [2]Kennedy Krieger Institute, Johns Hopkins University, Baltimore, MD, United States; [3]Miller School of Medicine, University of Miami, Miami, FL, United States

Power Pitch
Neuro Power Posters

Power Pitch Theatre, Exhibition Hall Wednesday 10:00-11:00

Moderators: Bruce R. Rosen, M.D., Ph.D. & Samantha J. Holdsworth, Ph.D.

Plasma 1 **0507. MR Imaging of Crocodilians Can Help for Brain Volume Estimation of Some Extinct Vertebrates**

Daniel Jirak[1], Jiri Janacek[2], Martin Kundrat, [23]
[1]IKEM, Prague, Czech Republic; [2]Institute of Physiology, Academy of Sciences of the Czech Republic, Prague, Czech Republic; [3]Evolutionary Biology Centre, Uppsala University, Uppsala, Sweden

Plasma 2 **0508. Improved FDG Kinetic Analysis in Brain Tumors Through Simultaneous MR/PET Acquisition**

Anne-Kristin Vahle[1, 2], Harikrishna Rallapalli[1, 2], Artem Mikheev[1, 2], Thomas Koesters[1, 2], Kai Tobias Block[1, 2], Jean Logan[1, 2], Timothy Shepherd[1, 2], Girish Fatterpekar[1, 2], David Faul[3], Fernando Emilio Boada[1, 2]
[1]Center for Advanced Imaging Innovation and Research, Dept. of Radiology, New York University School of Medicine, New York, NY, United States; [2]Center for Biomedical Imaging, Dept. of Radiology, New York University School of Medicine, New York, NY, United States; [3]Siemens Healthcare, New York, NY, United States

Plasma 3 **0509. White Matter Tract Integrity, Amyloid Burden and Structural Atrophy in Normal Aging and Mild Cognitive Impairment: A PET-MRI Study.**
Ileana O. Jelescu[1], Timothy M. Shepherd[1], Dmitry S. Novikov[1], Yu-Shin Ding[1], Thomas Koesters[1], Kent P. Friedman[1], Jacqueline Smith[1], James E. Galvin[2], Els Fieremans[1]
[1]Center for Biomedical Imaging, Dept. of Radiology, NYU Langone Medical Center, New York, United States; [2]Alzheimer Disease Center, Depts. of Neurology, Psychiatry and Population Health, NYU Langone Medical Center, New York, United States

Plasma 4 **0510. Magnetization Prepared ZTE to Address Multiple Diagnostic Contrasts**
Peter Börnert[1, 2], Jan Groen[3], Jouke Smink[3], Kay Nehrke[1]
[1]Philips Research, Hamburg, Germany; [2]Radiology, LUMC, Leiden, Netherlands; [3]Philips Healthcare, Best, Netherlands

Plasma 5 **0511. Ultrashort Echo Time (UTE) Imaging of Myelin: T2* Analysis**
ISMRM MERIT AWARD summa cum laude
Vipul R. Sheth[1], Hongda Shao[1], Jun Chen[1], Jody Corey-Bloom[2], Graeme M. Bydder[1], Jiang Du[1]
[1]Radiology, University of California, San Diego, CA, United States; [2]Neurosciences, University of California, San Diego, CA, United States

Plasma 6 **0512. Effects of Real-Time fMRI Neurofeedback of the Amygdala Specific to Major Depressive Disorder**
Vadim Zotev[1], Kymberly D. Young[1], Raquel Phillips[1], Masaya Misaki[1], Jerzy Bodurka[1, 2]
[1]Laureate Institute for Brain Research, Tulsa, OK, United States; [2]College of Engineering, University of Oklahoma, Tulsa, OK, United States

Plasma 7 **0513. Reduced Connectivity in 7-Year-Old Preterm Brain Networks Relates to Adverse Perinatal Events, Cognitive and Motor Impairment**
Deanne Thompson[1, 2], Jian Chen[1], Richard Beare[1], Christopher Adamson[1], Zohra Ahmadzai[1], Claire Kelly[1], Terrie Inder[3], Lex Doyle[1, 4], Marc Seal[1], Peter Anderson[1, 5]
[1]Murdoch Childrens Research Institute, Parkville, Victoria, Australia; [2]Florey Institute of Neuroscience and Mental Health, Parkville, Victoria, Australia; [3]Brigham and Women's Hospital, Massachusettes, United States; [4]Royal Women's Hospital, Parkville, Victoria, Australia; [5]Paediatrics, University of Melbourne, Parkville, Victoria, Australia

Plasma 8 **0514. Effect of Repetitive Transcranial Magnetic Stimulation on fMRI Resting-State Connectivity in Multiple System Atrophy**
Ying-hui Chou[1], Hui You[2], Han Wang[2], Yan-Ping Zhao[2], Bo Hou[2], Nan-kuei Chen[1], Feng Feng[2]
[1]Duke Brain Imaging and Analysis Center, Durham, NC, United States; [2]Peking Union Medical College Hospital, Beijing, China

Plasma 9 **0515. *In-Vivo* Evidence of Transcranial Direct Current Stimulation (TDCS) Induced Magnetic-Field Changes in Human Brain Revealed by MRI**
ISMRM MERIT AWARD summa cum laude
Mayank V. Jog[1], Robert Smith[2], Kay Jann[2], Walter Dunn[3], Allan Wu[2], Danny JJ Wang[2]
[1]Biomedical Engineering, University of California Los Angeles, Los Angeles, CA, United States; [2]Neurology, University of California Los Angeles, Los Angeles, CA, United States; [3]Psychiatry, University of California Los Angeles, Los Angeles, CA, United States

Plasma 10 **0516. Functional Consequences of Neurite Orientation Dispersion and Density in Humans Across the Adult Lifespan**
Arash Nazeri[1, 2], M. Mallar Chakravarty[3, 4], David J. Rotenberg[1], Tarek K. Rajji[1], Yogesh Rathi[5], Oleg V. Michailovich[6], Aristotle N. Voineskos[1]
[1]Centre for Addiction and Mental Health, Toronto, ON, Canada; [2]Department of Psychiatry, University of Toronto, Toronto, ON, Canada; [3]Department of Psychiatry, McGill University, Montreal, QC, Canada; [4]Cerebral Imaging Centre, Douglas Institute , Verdun, QC, Canada; [5]Laboratory of Mathematics in Imaging, Harvard Medical School, Boston, MA, United States; [6]Department of Electrical and Computer Engineering, University of Waterloo, Waterloo, ON, Canada

Plasma 11 **0517. Aneurysm Wall Permeability as a Measure of Rupture Risk and Bleb Formation**
ISMRM MERIT AWARD summa cum laude
Charles G. Cantrell[1], Parmede Vakil[1], Sameer A. Ansari[2], Timothy J. Carroll[1]
[1]Biomedical Engineering, Northwestern University, Chicago, IL, United States; [2]Radiology, Northwestern University, Chicago, IL, United States

Plasma 12 **0518. Intracranial Atherosclerotic Lesion Characteristics Correlate with Cerebrovascular Lesion Load After TIA or Ischemic Stroke: A 7.0 Tesla MRI Study**

Nikki Dieleman[1], Anja G. van der Kolk[1], Jaco J.M. Zwanenburg[1, 2], Manon Brundel[3], Anita A. Harteveld[1], Geert Jan Biessels[3], Fredy Visser[1, 4], Peter R. Luijten[1], Jeroen Hendrikse[1]
[1]Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]Image Science Institute, University Medical Center Utrecht, Utrecht, Netherlands; [3]Neurology, University Medical Center Utrecht, Utrecht, Netherlands; [4]Philips, Best, Netherlands

Plasma 13 **0519. Characterization of Rat Spinal Cord Vasoreactivity Using Arterial Spins Labelling at 9.4 T**

ISMRM MERIT AWARD summa cum laude

Mohamed Tachrount[1], Andrew Davies[2], Roshni Desai[2], Kenneth Smith[2], David Thomas[1], Xavier Golay[1]
[1]UCL Institute of Neurology, London, United Kingdom; [2]Department of Neuroinflammation, UCL Institute of Neurology, London, United Kingdom

Plasma 14 **0520. Diffusion Tensor Imaging and Magnitization Transfer Parameters Correlate with the White Matter Pathology in Mild Traumatic Brain Injury**

ISMRM MERIT AWARD summa cum laude

Tsang-Wei Tu[1], Rashida A. Williams[2], Jacob D. Lescher[2], L. Christine Turtzo[2], Joseph A. Frank[2]
[1]Radiology and Imaging Sciences, National Institutes of Health, Bethesda, MD - Maryland, United States; [2]Radiology and Imaging Sciences, National Institutes of Health, MD, United States

Plasma 15 **0521. *In Vivo* Evaluation of Ocular Physiology and Structural Integrity of the Optic Nerve Upon Whole Eye Transplantation Using Gadolinium-Enhanced MRI and Diffusion Tensor Imaging**

ISMRM MERIT AWARD magna cum laude

Yolandi van der Merwe[1, 2], Leon C. Ho[1, 3], Yang Li[4], Maxine R. Miller[4, 5], Chiaki Komatsu[4], Hongkun Wang[4], Michael B. Steketee[5], Seong-Gi Kim[1, 6], Joel S. Schuman, [25], Kia M. Washington[4, 5], Kevin C. Chan[1, 5], the WET Consortium[5]
[1]Neuroimaging Laboratory, University of Pittsburgh, Pittsburgh, PA, United States; [2]Department of Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States; [3]Department of Electrical and Electronic Engineering, The University of Hong Kong, Pokfulam, Hong Kong, China; [4]Department of Plastic and Reconstructive Surgery, University of Pittsburgh, PA, United States; [5]Department of Ophthalmology, University of Pittsburgh, Pittsburgh, PA, United States; [6]Center for Neuroscience Imaging Research, Institute for Basic Science, Sungkyunkwan University, Suwon, Korea

Power Pitch
Advances in fMRI

Power Pitch Theatre, Exhibition Hall Wednesday 13:30-14:30

Moderators: Karla L. Miller, Ph.D. & T.B.A.

Plasma 1 **0589. Individual-Subject Mapping of Functional Networks from Sparse Spontaneous BOLD Events**

Cesar Caballero Gaudes[1], Ziad S Saad[2], Mathijs Raemaekers[3], Nick F. Ramsey[3], Natalia Petridou[4]
[1]BCBL. Basque Center on Cognition, Brain and Language, Donostia, Guipuzcoa, Spain; [2]Statistical and Scientific Computing Core, National Institute of Mental Health, National Institutes of Health, Bethesda, MD, United States; [3]Brain Center Rudolf Magnus, Department of Neurology and Neurosurgery,, UMC Utrecht, Utrecht, Netherlands; [4]Radiology, Imaging Division, UMC Utrecht, Utrecht, Netherlands

Plasma 2 **0590. A Machine Learning Case for a Higher Order Control Plexus in the Frontal Pole Cortex**

Nishant Zachariah[1], Zhihao Li[2, 3], Jason Langley[2], Shiyang Chen[2], Mark Davenport[1], Justin Romberg[1], Xiaoping Hu[2]
[1]Department of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA, United States; [2]Department of Biomedical Engineering, Emory University and Georgia Institute of Technology, Atlanta, GA, United States; [3]Institute of Affective and Social Neuroscience, Shenzhen University, Shenzhen, Guangdong, China

Plasma 3 **0591. Calibrating BOLD Latency with High Temporal Resolution Precision Using Magnetic Resonance Inverse Imaging**

Ruo-Ning Sun[1], Ying-Hua Chu[1], Yi-Cheng Hsu[1], Wen-Jui Kuo[2], Fa-Hsuan Lin[1]
[1]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan; [2]Institute of Neuroscience, National Yang Ming University, Taipei, Taiwan

Plasma 4 **0592. Cortical Depth Dependence of Physiological Fluctuations and Whole-Brain Resting-State Functional Connectivity at 7T**

Jonathan R. Polimeni[1], Marta Bianciardi[1], Boris Keil[1], Lawrence L. Wald[1, 2]
[1]Athinoula A. Martinos Center for Biomedical Imaging, Department of Radiology, Harvard Medical School, Massachusetts General Hospital, Charlestown, MA, United States; [2]Harvard-MIT Division of Health Sciences and Technology, Massachusetts Institute of Technology, Cambridge, MA, United States

Plasma 5 **0593. 2D EPI at 9.4T with Slice-Specific Spokes Pulse RF Excitation for B1+ Homogenisation**

Benedikt A Poser[1], Desmond HY Tse[1, 2]
[1]Faculty of Psychology and Neuroscience, Maastricht University, Maastricht, Netherlands; [2]Department of Radiology, Maastricht University, Maastricht, Netherlands

Plasma 6 **0594. Relationships Between Excitation-Inhibition Balance and Whole-Brain Oxygen Extraction Fraction in Human Brain**

Swati Rane[1], Brandon Ally[2], Emily Mason[2], Subechhya Pradhan[3], Erin Hussey[2], Kevin Waddell[3], Hanzhang Lu[4, 5], Manus Donahue,[23]
[1]Radiology and Radiological Sciences, Vanderbilt University Institute of Imaging Science, Nashville, TN, United States; [2]Neurology, Vanderbilt University, Nashville, TN, United States; [3]Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [4]Radiology, UT Southwestern, Dallas, TX, United States; [5]Psychiatry, UT Southwestern, Dallas, TX, United States

Plasma 7 **0595. Dynamic Brain States Sequential Modelling Based on Spontaneous Brain Activity of Resting-State fMRI**

ISMRM MERIT AWARD magna cum laude

Shiyang Chen[1], Jason Langley[1], Xiaoping Hu[1]
[1]The Wallace H. Coulter Department of Biomedical Engineering, Georgia Institute of Technology and Emory University, Atlanta, GA, United States

Plasma 8 **0596. Failure of the "standard" fMRI Analysis in the Visual Cortex Using a Smooth Visual Stimulus**

ISMRM MERIT AWARD magna cum laude

David Provencher[1], Andreas Bartels[2], Yves Bérubé-Lauzière[3, 4], Kevin Whittingstall,[45]
[1]Department of Nuclear Medicine and Radiobiology, Université de Sherbrooke, Sherbrooke, QC, Canada; [2]Werner Reichardt Centre for Integrative Neuroscience, Tübingen, Germany; [3]Department of Electrical and Computer Engineering, Université de Sherbrooke, Sherbrooke, QC, Canada; [4]Centre d'imagerie moléculaire de Sherbrooke (CIMS), Université de Sherbrooke, Sherbrooke, QC, Canada; [5]Department of Diagnostic Radiology, Université de Sherbrooke, Sherbrooke, QC, Canada

Plasma 9 **0597. BOLD Calibration with Interleaved Susceptometry-Based Oximetry**

Zachary B. Rodgers[1], Erin K. Englund[2], Maria A. Fernandez-Seara[3], Felix W. Wehrli[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Department of Bioengineering, University of Pennsylvania , Philadelphia, PA, United States; [3]Neuroimaging Laboratory, Center for Applied Medical Research, University of Navarra, Pamplona, Navarra, Spain

Plasma 10 **0598. Multimodal Validation of Physiological MRI: Triple Oxygen PET and NIRS**

Daniel Bulte[1], Hannah Hare[1], Nazneen Sudhan[2], Joanna Simpson[2], Joseph Donnelly[2], Xiuyun Liu[2], Jonathan Coles[2]
[1]FMRIB, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]WBIC, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom

Plasma 11 **0599. Measurement of μ-Opioid Receptor Driven Neurovascular Coupling Signals Using Simultaneous PET/MRI**

Hsiao-Ying Wey[1], Jacob M. Hooker[1], Michael S. Placzek[1, 2], Bruce R. Rosen[1], Joseph B. Mandeville[1]
[1]A. A. Martinos Center, Department of Radiology, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA, United States; [2]McLean Hospital, Harvard Medical School, Belmont, MA, United States

Plasma 12 **0600. Simultaneous Multi-Slice Functional CBV Measurements at 7 T**

ISMRM MERIT AWARD magna cum laude

Laurentius Huber[1], Dimo Ivanov[2], Maria Guidi[1], Robert Turner[1], Kâmil Uludağ[2], Harald E. Möller[1], Benedikt A. Poser[2]
[1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany; [2]Maastricht Brain Imaging Centre, Netherlands

Plasma 13 **0601. Distinct Neurophysiological Correlates of Global Vs. Local Resting State fMRI Networks**

ISMRM MERIT AWARD magna cum laude

Haiguang Wen[1], Zhongming Liu,[12]
[1]Electrical and Computer Engineering, Purdue University, West Lafayette, IN, United States; [2]Biomedical Engineering, Purdue University, West Lafayette, IN, United States

Plasma 14 **0602. Functional Pathways in Monkey Brain Mapped Using Resting State Correlation Tensors**

Tung-Lin Wu[1], Feng Wang[1, 2], Li Min Chen,[23], Adam W. Anderson,[23], Zhaohua Ding[1, 2], John C. Gore,[23]

[1]Vanderbilt University Institute of Imaging Science , Nashville , TN, United States; [2]Radiology and Radiological Sciences, Vanderbilt Univeristy, Nashville, TN, United States; [3]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States

Plasma 15 **0603. Subcortical Grey Matter Susceptibility Mapping from Standard fMRI Studies**

Hongfu Sun[1], Peter Seres[1], Alan H. Wilman[1]
[1]Biomedical Engineering, University of Alberta, Edmonton, Alberta, Canada

Power Pitch
Cancer

Power Pitch Theatre, Exhibition Hall Wednesday 16:00-17:00

Moderators: Bachir Taouli, M.D. & T.B.A.

Plasma 1 **0666. Comparing Functional Tumor Volume and Pharmacokinetic Parameter in DCE-MRI Prediction of Breast Cancer Therapy Response: A Preliminary Study**

Alina Tudorica[1], David C. Newitt[2], Karen Y. Oh[1], Nicole Roy[1], Stephen Y-C Chui[1], Arpana Naik[1], Megan L. Troxell[1], Yiyi Chen[1], Aneela Afzal[1], Megan L. Holtorf[1], Nola M. Hylton[2], Wei Huang[1]
[1]Oregon Health & Science University, Portland, OR, United States; [2]University of California, San Francisco, CA, United States

Plasma 2 **0667. Can Model Weighting Improve the Accuracy of DCE-MRI Parameter Estimation?**

Xia Li[1], Lori R. Arlinghaus[1], Erin Rericha[1], Thomas Yankeelov[1]
[1]Vanderbilt University, Nashville, TN, United States

Plasma 3 **0668. Impact of Non-Rigid Motion Correction on Pharmaco-Kinetic Analysis for Breast Dynamic Contrast-Enhanced MRI**

Venkata Veerendra Nadh Chebrolu[1], Dattesh Shanbhag[1], Reem Bedair[2], Sandeep Gupta[3], Patrice Hervo[4], Scott Reid[5], Fiona Gilbert[2], Andrew Patterson[6], Martin Graves[7], Rakesh Mullick[8]
[1]Medical Image Analysis Lab, GE Global Research, Bangalore, Karnataka, India; [2]Radiology, University of Cambridge, Cambridge, United Kingdom; [3]Biomedical Image Analysis Lab, GE Global Research, NY, United States; [4]GE Healthcare, Buc, France; [5]GE Healthcare, Amersham, United Kingdom; [6]Cambridge University Hospitals Trust, Cambridge, United Kingdom; [7]Radiology, Cambridge University Hospitals Trust, Cambridge, United Kingdom; [8]Diagnostics & Biomedical Technologies, GE Global Research, Bangalore, Karnataka, India

Plasma 4 **0669. Dynamic Contrast Enhanced MRI Estimate of Tumor Interstitial Fluid Pressure in Solid Brain Tumors**

ISMRM MERIT AWARD summa cum laude

Madhava P. Aryal[1], Tavarekere N. Nagaraja[2], Rasha Elmghribi, [13], Kelly A. Keenan[2], Swayamprava Panda[1], Glauber Cabral[1], Stephen L. Brown[4], James R. Ewing, [13]
[1]Dept. of Neurology, Henry Ford Hospital, Detroit, MI, United States; [2]Dept. of Anesthesiology, Henry Ford Hospital, Detroit, MI, United States; [3]Dept. of Physics, Oakland University, Rochester, MI, United States; [4]Dept. of Radiation Oncology, Henry Ford Hospital, Detroit, MI, United States

Plasma 5 **0670. Quantitative Perfusion Measurements in Renal Masses with Arterial Spin Labeling and Dynamic Contrast Enhanced MRI at 3T Correlate with Microvessel Density at Histopathology**

Yue Zhang[1], Payal Kapur[2], [3], Qing Yuan[1], Ananth Madhuranthakam[1], [4], Ingrid Carvo[5], Sabina Signoretti[5], Ivan Dimitrov[6], Yin Xi[1], Katherine Wicks[1], Jeffrey Cadeddu[1], [3], Vitaly Margulis[3], James Brugarolas[7], [8], Ivan Pedrosa[1], [4]
[1]Radiology, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Pathology, University of Texas Southwestern Medical Center, Dallas, TX, United States; [3]Urology, University of Texas Southwestern Medical Center, Dallas, TX, United States; [4]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [5]Pathology, Brigham and Women's Hospital, Boston, MA, United States; [6]Philips Medical Systems, Cleveland, OH, United States; [7]Internal Medicine, University of Texas Southwestern Medical Center, Dallas, TX, United States; [8]Developmental Biology, University of Texas Southwestern Medical Center, Dallas, TX, United States

Plasma 6 **0671. Classification of Tumor Sub-Volumes Based on Dynamic Contrast Enhanced MRI Model Hierarchy for Locally Advanced Cervical Cancer**

ISMRM MERIT AWARD magna cum laude

Jesper Folsted Kallehauge[1], [2], Thomas Nielsen[3], Markus Alber[1], Søren Haack, [24], Erik Morre Pedersen[5], Jacob Christian Lindegaard[2], Anne Ramlov[2], Kari Tanderup[6], [7]
[1]Dept. of Medical Physics, Aarhus University Hospital, Aarhus, Denmark; [2]Dept. of Oncology, Aarhus University Hospital, Aarhus, Denmark; [3]CFIN/Mindlab, Aarhus University Hospital, Aarhus, Denmark; [4]Dept. of Clinical Engineering, Aarhus University Hospital, Aarhus, Denmark; [5]Dept. of Radiology, Aarhus University Hospital, Aarhus, Denmark; [6]Dept. of Experimental Clinical Oncology, Aarhus University Hospital, Aarhus, Denmark; [7]Dept. of Clinical Medicine, Aarhus University , Aarhus, Denmark

Plasma 7 **0672. Evaluation of Stretched-Exponential Model for Diffusion-Weighted Imaging of Breast Lesions Using High B Values: Comparison with Monoexponential Diffusion Weighted Imaging**

Chunling Liu[1], Changhong Liang[1], Yingjie Mei[2], Zaiyi Liu[1], Jine Zhang[1]
[1]Department of Radiology, Guangdong General Hospital/Guangdong Academy of Medical Sciences, Guangzhou, Guangdong, China; [2]Philips Healthcare, Guangzhou, Guangdong, China

Plasma 8 **0673. SUV-ADC Mapping of Malignant and Benign Prostate Lesions with PET-MRI**

Yachao Liu[1], Jiangping Gao[2], Jiajin Liu[1], Hui Liu[3], Yong Xu[2], Baixuan Xu[1], Jiahe Tian[1]
[1]Nuclear Medicine Department, PLA 301 General Hospital, Beijing, China; [2]Urology Department, PLA 301 General Hospital, Beijing, China; [3]NEA MR Collaboration, Siemens Ltd., China, Shanghai, China

Plasma 9 **0674. Simultaneous ^{18}F-FACBC PET/MRI for Loco-Regional Staging of Prostate Cancer: Considerations on Imaging Protocol Design**

Mattijs Elschot[1], Kirsten M. Selnæs[1, 2], Brage Krüger-Stokke[1, 3], Øystein Størkersen[4], Helena Bertilsson[5, 6], Siver A. Moestue[1, 2], Tone F. Bathen[1, 2]
[1]Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Sør-Trøndelag, Norway; [2]St Olavs Hospital, Trondheim, Sør-Trøndelag, Norway; [3]Department of Radiology, St Olavs Hospital, Trondheim, Sør-Trøndelag, Norway; [4]Department of Pathology, St Olavs Hospital, Trondheim, Sør-Trøndelag, Norway; [5]Department of Urology, St Olavs Hospital, Trondheim, Sør-Trøndelag, Norway; [6]Department of Cancer Research and Molecular Medicine, Norwegian University of Science and Technology, Trondheim, Sør-Trøndelag, Norway

Plasma 10 **0675. Multiparametric Hybrid 18FDG-PET/MRI in Patients with Multiple Myeloma: Initial Experience**

Jennifer Mosebach[1], Christos Sachpekidis[2], Martin Freitag[1], Jens Hillengass[3], Antonia Dimitrakopoulou-Strauss[2], Uwe Haberkorn[4], Heinz-Peter Schlemmer[1], Stefan Delorme[1]
[1]Department of Radiology, German Cancer Research Center, Heidelberg, Germany; [2]Clinical Cooperation Unit Nuclear Medicine, German Cancer Research Center, Heidelberg, Germany; [3]Department of Medicine V, Multiple Myeloma Section, University of Heidelberg, Heidelberg, Germany; [4]Division of Nuclear Medicine, University of Heidelberg, Heidelberg, Germany

Plasma 11 **0676. 4D Echo Planar Correlated Spectroscopic Imaging and DWI of Breast Cancer**

Rajakumar Nagarajan[1], Neil Wilson[1], Nanette DeBruhl[1], Brian Burns[1], Melissa Joines[1], Maithili Gopalakrishnan[1], Fausto Rendon[1], Lawrence W. Bassett[1], M.Albert Thomas[1]
[1]Radiological Sciences, UCLA School of Medicine, Los Angeles, CA, United States

Plasma 12 **0677. Relaxation-Weighted Sodium MRI of Breast Lesions at 7T**

ISMRM MERIT AWARD magna cum laude

Stefan Zbyn[1], Olgica Zaric[1], Vladimir Juras[1], Katja Pinker[2], Alex Farr[3], Nadia Benkhedah[4], Pascal Balzer[2], Vladimir Mlynarik[1], Armin Nagel[4], Christian Singer[3], Thomas Helbich[2], Wolfgang Bogner[1], Siegfried Trattnig[1]
[1]High Field MR Center, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria; [2]Division of Molecular and Gender Imaging, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria; [3]Department of Gynecology and Obstetrics, Medical University of Vienna, Vienna, Austria; [4]Department of Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

Plasma 13 **0678. Noninvasive Assessment of Lymphatic Impairment and Interstitial Protein Accumulation Using Chemical Exchange Saturation Transfer (CEST) MRI**

Manus Donahue[1, 2], Paula CM Donahue[3, 4], Swati Rane[1], Megan K. Strother[1], Allison O. Scott[1], Seth A. Smith[1]
[1]Radiology and Radiological Sciences, Vanderbilt University Medical Center, Nashville, TN, United States; [2]Physics and Astronomy, Vanderbilt University , Nashville, TN, United States; [3]Physical Medicine and Rehabilitation, Vanderbilt University Medical Center, Nashville, TN, United States; [4]Dayani Center for Health and Wellness, Nashville, TN, United States

Plasma 14 **0679. Combining 'omics'; Metabolic Breast Cancer Subclass Correlation with Protein and Gene Expression Subtypes**

Tonje H. Haukaas[1, 2], Leslie R. Euceda[1], Guro F. Giskeødegård[1], Marit Krohn[3, 4], Ellen Schlichting[5], Rolf Kåresen[3, 5], Sandra Nyberg[3, 4], Kristine Kleivi Sahlberg[3, 4], Anne-Lise Børresen-Dale[3, 4], Tone F. Bathen[1, 3]
[1]Department of Circulation and Medical Imaging, Faculty of Medicine, NTNU, Trondheim, Norway; [2]K.G. Jebsen Center for Breast Cancer Research, Institute of Clinical Medicine , Faculty of Medicine, University of Oslo, Oslo, Norway; [3]K.G. Jebsen Center for Breast Cancer Research, Institute of Clinical Medicine, Faculty of Medicine, University of Oslo, Oslo, Norway; [4]Department of Genetics, Institute for Cancer Research Oslo University Hospital, , The Norwegian Radium Hospital, Oslo, Norway; [5]Department of Surgery, Oslo University Hospital, Ullevål, Oslo, Norway

Plasma 15 **0680. Using Radiogenomics to Characterize MRI-Guided Prostate Cancer Biopsy Heterogeneity**
Radka Stoyanova[1], Alan Pollack[1], Nicholas Erho[2], Charles Lynne[3], Lucia Lam[2], Christine Buerki[2], Sakhi Abraham[1], Merce Jorda[4], Olexandr Kryvenko[4], Matthew Abramowitz[1], Elai Davicioni[2], Adrian Ishkanian[1]
[1]Radiation Oncology, University of Miami, Miami, FL, United States; [2]GenomeDx Biosciences, Vancouver, British Columbia, Canada; [3]Urology, University of Miami, Miami, FL, United States; [4]Pathology, University of Miami, Miami, FL, United States

Power Pitch
High Field Applications

Power Pitch Theatre, Exhibition Hall Thursday 10:30-11:30

Moderators: Gregory J. Metzger, Ph.D. & T.B.A.

Plasma 1 **0754. Whole Brain Pulsed Arterial Spin Labelling at Ultra High Field with a $B1^+$-Optimised Adiabatic Labelling Pulse**
Kieran O'Brien†[1, 2], Fabian Zimmer†[2], Steffen Bollmann[2], Josef Pfeuffer[3], Keith Heberlein[4], Markus Barth[2]
[1]Healthcare Sector, Siemens Ltd, Brisbane, Australia; [2]The Centre for Advanced Imaging, The University of Queensland, Brisbane, Australia; [3]Siemens Healthcare, Erlangen, Germany; [4]Siemens Healthcare, Boston, MA, United States

Plasma 2 **0755. 7T Imaging of Patients with Focal Epilepsy Who Appear Non-Lesional in Diagnostic 1.5T and 3T MRI Scans: First Results**
Rebecca Emily Feldman[1], Hadrien Dyvorne[1], Bradley Neil Delman[1], Madeline Cara Fields[2], Lara Vanessa Marcuse[2], Priti Balchandani[1]
[1]Radiology, Icahn School of Medicine at Mount Sinai, New York, United States; [2]Department of Neurology, Mount Sinai Hospital, New York, United States

Plasma 3 **0756. *In Vivo* ^{37}Cl MRI of Human Calf Muscle at 7T**
ISMRM MERIT AWARD magna cum laude
Judith Schork[1], Anna Kollefrath[1], Manuela B. Rösler[1], Reiner Umathum[1], Armin M. Nagel[1]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

Plasma 4 **0757. T1rho and T2 Relaxation Times in Patients with Knee Osteoarthritis at 3 Tesla and 7 Tesla**
Cory Wyatt[1], Aditi Guha[1], Anand Venkatachari[1], Xiaojuan Li[1], Roland Krug[1], Douglas A.C. Kelley[2], Thomas M. Link[1], Sharmila Majumdar[1]
[1]Radiology, University of California San Francisco, San Francisco, CA, United States; [2]GE Healthcare Technologies, San Francisco, CA, United States

Plasma 5 **0758. Saturation Recovery Single-Shot Acquisition (SASHA) for T_1 Mapping in the Human Heart at 7T**
Christopher T. Rodgers[1], Yuehui Tao[1], Stefan Piechnik[1], Alexander Liu[1], Jane Francis[1], Stefan Neubauer[1], Matthew D. Robson[1]
[1]University of Oxford, Oxford, Oxon, United Kingdom

Plasma 6 **0759. Theoretical and Experimental Comparisons of Single Breath-Hold Renal Perfusion Imaging Between 3T and 7T**
Xiufeng Li[1], Edward J. Auerbach[1], Pierre-Francois Van de Moortele[1], Kamil Ugurbil[1], Gregory J. Metzger[1]
[1]Radiology-CMRR, University of Minnesota, Minneapolis, MN, United States

Plasma 7 **0760. Ultra-Short T_E STEAM Improves Hepatic Lipid Quantification and Profiling at 7T**
Martin Gajdošík[1], Grzegorz Chadzynski[2, 3], Vladimír Mlynárik[1], Marek Chmelík[1], Wolfgang Bogner[1], Ladislav Valkovic[1, 4], Ivica Just Kukurová[1], Siegfried Trattnig[1], Martin Krššák[1, 5]
[1]MRCE, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria; [2]Department of Biomedical Magnetic Resonance, University of Tübingen, Tübingen, Germany; [3]Department of High-Field Magnetic Resonance, Max Planck Institute for Biological Cybernetics, Tübingen, Germany; [4]Institute of Measurement Science, Slovak Academy of Sciences, Bratislava, Slovakia; [5]Department of Internal Medicine III, Medical University of Vienna, Vienna, Austria

Plasma 8 **0761. Ultra-High Field *In Vivo* Localized Two Dimensional Correlated MR Spectroscopy to Probe Membrane Degradation During Progression of Alzheimer's Disease**
A Alia[1, 2], Niels Braakman[1]
[1]Leiden Institute of Chemistry, Leiden University, Leiden, South Holland, Netherlands; [2]Institute of Medical Physics and Biophysics, Leipzig University, Leipzig, Germany

Plasma 9 **0762. *In Vivo* MR Microscopy of the Nervus Opticus at 3.0 T and 7.0 T: Anatomical and Diffusion Weighted Imaging in Healthy Subjects and Patients with Optic Nerve Glioma**

Katharina Paul[1], Andreas Graessl[1], Jan Rieger[1], Darius Lysiak[1], Till Huelnhagen[1], Lukas Winter[1], Antje Els[1], Beate Endemann[1], Tobias Lindner[2], Stefan Hadlich[3], Paul-Christian Krueger[3], Oliver Stachs[2, 4], Soenke Langner[3], Thoralf Niendorf[1, 5]
[1]Max-Delbrueck Centre for Molecular Medicine, Berlin Ultrahigh Field Facility (B.U.F.F.), Berlin, Germany; [2]University Medicine Rostock, Pre-clinical Imaging Research Group, Rostock, Germany; [3]University of Greifswald, Institute for Diagnotic Radiology and Neuroradiology, Greifswald, Germany; [4]University Medicine Rostock, Department of Ophthalmology, Rostock, Germany; [5]Experimental and Clinical Research Center, a joint cooperation between the Charite Medical Faculty and the Max-Delbrueck Center, Berlin, Germany

Plasma 10 **0763. *In-Vivo* Proton MR Spectroscopic Imaging of the Human Brain Gliomas at 9.4 Tesla: Evaluation of Metabolite Coordinates**

Grzegorz L. Chadzynski[1, 2], Gisela Hagberg[1, 2], Jonas Bause[2], G. Shajan[2], Sotirios Bisdas[3], Rolf Pohmann[2], Klaus Scheffler[1, 2]
[1]Dept. Biomedical Magnetic Resonance, University of Tuebingen, Tuebingen, Germany; [2]Dept. High-field Magnetic Resonance, Max Planck Institute for Biological Cybernetics, Tuebingen, Germany; [3]Dept. Diagnostic and Interventional Neuroradiology, University of Tuebingen, Tuebingen, Germany

Plasma 11 **0764. An Investigation of Lateral Geniculate Nucleus (LGN) Volume in Patients with Glaucoma Using 7T MRI.**

Hye Jin Jeong[1], Jong Yeon Lee[2], Jong Hwan Lee[2], Yu Jeong Kim[2], Eung Yeop Kim[3], Yong Yeon Kim[4], Zang-Hee Cho[1], Young-Bo Kim[1]
[1]Neuroscience Research Institute, Gachon University, Incheon, Korea; [2]Department of Ophthalmology, Gachon University, Gil Hospital, Incheon, Korea; [3]Department of Radiology, Gachon University, Incheon, Korea; [4]Department of Ophthalmology, Korea University College of Medicine, Seoul, Korea

Plasma 12 **0765. Giant Intracranial Aneurysms at 7 Tesla MRI: A New Diagnostic Approach to Understand This Rare Intracranial Vascular Pathology**

Bixia Chen[1, 2], Toshinori Matsushige[2, 3], Stefan Maderwald[1], Sören Johst[1], Harald H. Quick[1, 4], Mark Edward Ladd[1, 5], Ulrich Sure[2], Karsten Henning Wrede[1, 2]
[1]Erwin L. Hahn Institute for Magnetic Resonance Imaging, University Duisburg-Essen, Essen, NRW, Germany; [2]Department of Neurosurgery, University Hospital Essen, University Duisburg-Essen, Essen, NRW, Germany; [3]Department of Neurosurgery, Hiroshima University Hospital, Hiroshima University, Hiroshima, Hiroshima Prefecture, Japan; [4]High Field and Hybrid MR Imaging, University Hospital Essen, University Duisburg-Essen, Essen, NRW, Germany; [5]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, BW, Germany

Plasma 13 **0766. High Resolution Spectroscopic Imaging with Ultra Short TE in Patients with Multiple Sclerosis and Brain Tumors at 7T**

Gilbert Hangel[1], Bernhard Strasser[2], Michal Považan[2], Stephan Gruber[2], Marek Chmelik[2], Georg Widhalm[3], Engelbert Knosp[3], Assunta Dal-Bianco[4], Fritz Leutmezer[4], Siegfried Trattnig[2], Wolfgang Bogner[2]
[1]MCRE, Department of Biomedical Imaging and Image-guided Therapy , Medical University of Vienna, Wien, Vienna, Austria; [2]MCRE, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Wien, Vienna, Austria; [3]Department of Neurosurgery, Medical University of Vienna, Wien, Vienna, Austria; [4]Department of Neurology, Medical University of Vienna, Wien, Vienna, Austria

Plasma 14 **0767. Examples of Clinical Imaging at 7T: Successes and Challenges**

Stephen E. Jones[1], Se-Hong Oh[1], Erik Beall[1], Michael Phillips[1], Ken Sakaie[1], Irene Wang[2], Mark Lowe[1]
[1]Imaging Institute, Cleveland Clinic, Cleveland, OH, United States; [2]Neurologic Institute, Cleveland Clinic, Cleveland, OH, United States

Plasma 15 **0768. Towards Clinical Cardiac MR at 7.0 T: Early Experience with Black Blood RARE Imaging in Patients with Hypertrophic Cardiomyopathy**

Till Huelnhagen[1], Katharina Paul[1], Andreas Pohlmann[1], Andreas Graessl[1], Jan Rieger[2], Darius Lysiak[2], Christof Thalhammer[1], Marcel Prothmann[3], Jeanette Schulz-Menger[3, 4], Thoralf Niendorf[1, 4]
[1]Berlin Ultrahigh Field Facility (B.U.F.F.), Max-Delbrueck Center for Molecular Medicine (MDC), Berlin, Germany; [2]MRI.TOOLS GmbH, Berlin, Germany; [3]Dept. of Cardiology and Nephrology, HELIOS Klinikum Berlin-Buch, Berlin, Germany; [4]Experimental and Clinical Research Center, a joint cooperation between the Charite Medical Faculty and the Max-Delbrueck Center, Berlin, Germany

Power Pitch
Body

Power Pitch Theatre, Exhibition Hall Thursday 13:30-14:30

Moderators: Elizabeth M. Hecht, M.D. & Valentina Taviani, Ph.D.

Plasma 1 **0838. Does Using a 16-Element Receive-Array Improve Whole-Liver ^{31}P Metabolite Ratio Quantification at 7T?**

Lucian A. B. Purvis[1], William T. Clarke[1], Michael Pavlides[1], Stefan Neubauer[1], Matthew D. Robson[1], Christopher T. Rodgers[1]

[1]Department of Cardiovascular Medicine, University of Oxford, Oxford, Oxfordshire, United Kingdom

Plasma 2 **0839. Combined Gadoxetic Acid and Gadofosveset Enhanced Liver MRI: Detection and Characterization of Focal Liver Lesions**

Peter Bannas[1, 2], Candice A. Bookwalter[1], Tim Ziemlewicz[1], Utaroh Motosugi[1], Richard Bruce[1], Theodora A. Potretzke[1], Scott B. Reeder[1, 3]

[1]Radiology, University of Wisconsin-Madison, Madison, WI, United States; [2]Radiology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [3]Medical Physics, University of Wisconsin-Madison, WI, United States

Plasma 3 **0840. Adipose Tissue Hydration as a Potential Non-Invasive Marker for Adipose Tissue Hypertrophy**

ISMRM MERIT AWARD magna cum laude

Navin Michael[1], Suresh Anand Sadananthan[1], Jadegoud Yaligar[2], Swee Shean Lee[2], Melvin Khee-Shing Leow[1, 3], Chin Meng Khoo[4], Eric Yin Hao Khoo[4], Kavita Venkataraman[5], Yung Seng Lee[1, 6], Yap Seng Chong[1, 7], Peter D. Gluckman[1], E. Shyong Tai[4], S. Sendhil Velan[2, 8]

[1]Singapore Institute for Clinical Sciences, A*STAR, Singapore; [2]Singapore BioImaging Consortium, A*STAR, Singapore; [3]Department of Endocrinology, Tan Tock Seng Hospital, Singapore; [4]Department of Medicine, Yong Loo Lin School of Medicine , National University of Singapore, Singapore; [5]Saw Swee Hock School of Public Health, National University of Singapore, Singapore; [6]Department of Paediatrics , Yong Loo Lin School of Medicine, Singapore; [7]Department of Obstetrics & Gynaecology, Yong Loo Lin School of Medicine, Singapore; [8]Clinical Imaging Research Centre, A*STAR, Singapore

Plasma 4 **0841. Modelling Skull Dynamics During Brain Magnetic Resonance Elastography to Evaluate Wave Delivery Strategies**

Deirdre M. McGrath[1, 2], Alejandro F. Frangi[1], Iain D. Wilkinson[2], Zeike A. Taylor[1]

[1]CISTIB, Center for Computational Imaging & Simulation Technologies in Biomedicine, University of Sheffield, Sheffield, South Yorkshire, United Kingdom; [2]Academic Radiology, University of Sheffield, Sheffield, South Yorkshire, United Kingdom

Plasma 5 **0842. Isocaloric Fructose Restriction for 10 Days Reduces MR-Measured Liver, Pancreatic and Visceral Fat in High Sugar-Consuming, Obese Children**

Susan M. Noworolski[1], Kathleen Mulligan[2], Natalie Korn[1], Molly Gibson[1], Viva W. Tai[2, 3], Michael Wen[2], Ayca Erkin-Cakmak[4], Alejandro Gugliucci[5], Robert H. Lustig[4], Jean-Marc Schwarz[6]

[1]Radiology & Biomedical Imaging, University of California, San Francisco, CA, United States; [2]Medicine, University of California, San Francisco, CA, United States; [3]CTSI-CRS, University of California, San Francisco, CA, United States; [4]Pediatrics, University of California, San Francisco, CA, United States; [5]Research, Touro University College of Osteopathic Medicine, Vallejo, CA, United States; [6]Basic Science, Touro University College of Osteopathic Medicine, Vallejo, CA, United States

Plasma 6 **0843. The Effect of Parallel Radiofrequency Transmission on Arterial Input Function Selection in 3T DCE-MRI of Prostate Cancer**

Hatim Chafi[1], Saba N. Elias[2], Huyen T. Nguyen[2], Harry T. Friel[3], Michael V. Knopp[2], BeiBei Guo[4], Steven B. Heymsfield[5], Guang Jia[1]

[1]Department of Physics and Astronomy, Louisiana State University, Baton Rouge, LA, United States; [2]Department of Radiology, The Ohio State University, Columbus, OH, United States; [3]Clinical Science Operations, Philips Healthcare, Highland Heights, OH, United States; [4]Department of Experimental Statistics, Louisiana State University, Baton Rouge, LA, United States; [5]Metabolism - Body Composition, Pennington Biomedical Research Center, Baton Rouge, LA, United States

Plasma 7 **0844. Automatic Combined Whole-Body Muscle and Fat Volume Quantification Using Water-Fat Separated MRI in Postmenopausal Women**

Janne West[1, 2], Thobias Romu, [23], Anna-Clara Spetz Holm[4], Hanna Lindblom[1], Lotta Lindh-Åstrand[4], Magnus Borga, [23], Mats Hammar[4], Olof Dahlqvist Leinhard[1, 2]

[1]Department of Medical and Health Sciences, Linköping University, Linköping, Sweden; [2]Center for Medical Imaging Science and Visualization, Linköping, Sweden; [3]Department of Biomedical Engineering, Linköping University, Linköping, Sweden; [4]Department of Clinical and Experimental Medicine, Linköping University, Linköping, Sweden

Plasma 8 **0845. Stimulated Echo Diffusion Weighted Imaging of the Liver at 3T**

Hui Zhang[1], Aiqi Sun[1], Xiaodong Ma[1], Zhe Zhang[1], Ed X. Wu[2, 3], Hua Guo[1]
[1]Center for Biomedical Imaging Research, Department of Biomedical Engineering, School of Medicine, Tsinghua University, Beijing, China; [2]Laboratory of Biomedical Imaging and Signal Processing, The University of Hong Kong,, Hong Kong SAR, China; [3]Department of Electrical and Electronic Engineering, The University of Hong Kong,, Hong Kong SAR, China

Plasma 9 **0846. Characterizing Water Diffusion and Perfusion Features of the Healthy and Malignant Pancreas Using Diffusion-Tensor and Diffusion Weighted MRI**

Noam Nissan[1], Talia Golan[2], Edna Furman-Haran[1], Sara Apter[2], Yael Inbar[2], Arie Ariche[2], Barak Bar Zakay[2], Yuri Goldes[2], Michael Schvimer[2], Dov Grobgeld[1], Hadassa Degani[1]
[1]Weizmann Institute of Science, Rehovot, Israel; [2]Sheba Medical Center, Israel

Plasma 10 **0847. Utility of Combined Ga-68 DOTA-TOC PET and Eovist MRI Utilizing PET/MRI**

Thomas A. Hope[1], Carina Mari Aparici[1], Eric Nakakura[2], Henry VanBrocklin[1], Miguel Hernandez Pampaloni[1], James Slater[1], Salma Jivan[1], Judy Yee[1], Emily Bergsland[3]
[1]Radiology and Biomedical Imaging, UCSF, San Francisco, CA, United States; [2]Department of Surgery, UCSF, San Francisco, CA, United States; [3]Department of Medicine, UCSF, San Francisco, CA, United States

Plasma 11 **0848. Imaging of Dissolved-Phase Hyperpolarized Xenon-129 in Human Kidneys**

John P. Mugler, III[1], G. Wilson Miller[1], Craig H. Meyer[2], Kun Qing[1], Jaime F. Mata[1], Steven Guan[2], Kai Ruppert[1, 3], Iulian C. Ruset[4, 5], F. William Hersman[4, 5], Talissa A. Altes[1]
[1]Radiology & Medical Imaging, University of Virginia, Charlottesville, VA, United States; [2]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [3]Cincinnati Children's Hospital, Cincinnati, OH, United States; [4]Xemed, LLC, Durham, NH, United States; [5]Physics, University of New Hampshire, Durham, NH, United States

Plasma 12 **0849. Renal Blood Oxygenation Level-Dependent Imaging in Longitudinal Follow-Up of the Donated and the Remaining Kidney in Renal Transplantation**

ISMRM MERIT AWARD magna cum laude

Maryam Seif[1], Ute Eisenberger[2], Tobias Binser[1], Harriet C. Thoeny[3], Fabienne Krauer[1], Chris Boesch[1], Bruno Vogt[4], Peter Vermathen[1]
[1]Depts. Radiology and Clinical Research, University Bern, Bern, Switzerland; [2]Dept. Nephrology, University Hospital Essen-Duisburg , Essen, Germany; [3]Dept. Radiology, Neuroradiology and Nuclear Medicine, University Hospital of Bern,, Bern, Switzerland; [4]Dept. Nephrology, Hypertension and Clinical Pharmacology, University Hospital of Bern, Bern, Switzerland

Plasma 13 **0850. Redistribution of Fractional Ventilation After Circumscribed Primary Lung Injury and Atelectasis**

Yi Xin[1], Maurizio Cereda[2], Hooman Hamedani[1], Harrilla Profka[1], Justin Clapp[1], Stephen Kadlecek[1], Brian P. Kavanagh[3], Rahim R. Rizi[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Anesthesiology and Critical Care, University of Pennsylvania, Philadelphia, PA, United States; [3]Hospital for Sick Children, Toronto, Ontario, Canada

Plasma 14 **0851. Three-Dimensional Pulmonary ^{1}H MRI Multi-Region Segmentation Using Convex Optimization**

ISMRM MERIT AWARD magna cum laude

Fumin Guo[1, 2], Sarah Svenningsen[1, 3], Aaron Fenster[1, 2], Grace Parraga[1, 2]
[1]Imaging Research Laboratories, Robarts Research Institute, London, Ontario, Canada; [2]Graduate Program in Biomedical Engineering, The University of Western Ontario, London, Ontario, Canada; [3]Department of Medical Biophysics, The University of Western Ontario, London, Ontario, Canada

Plasma 15 **0852. Ventilation Heterogeneity in Obstructive Airways Disease – Comparing Multi-Breath Washout-Imaging with Global Lung Measurements**

ISMRM MERIT AWARD summa cum laude

Felix C. Horn[1], Helen Marshall[1], Salman Siddiqui[2], Alexander Horsley[3], Laurie Smith[1], Ina Aldag[4], Richard Kay[5], Christopher J. Taylor[4], Juan Parra-Robles[1], Jim M. Wild[1]
[1]Sheffield University, Sheffield, United Kingdom; [2]University of Leicester, United Kingdom; [3]University of Manchester, United Kingdom; [4]Sheffield Children's NHS Foundation Trust, NHS, United Kingdom; [5]Novartis, Switzerland

Traditional Poster
Cancer: Other, Original Research

Exhibition Hall Monday 10:45-12:45

1075. 3D Textural Features of Conventional MRI Predict Survival in Childhood Medulloblastoma

Ahmed E. Fetit[1, 2], Jan Novak[2, 3], Simrandip K. Gill[2, 3], Martin Wilson[2, 3], Andrew C. Peet[2, 3], Theodoros N. Arvanitis[1, 2]

[1]Institute of Digital Healthcare, WMG, University of Warwick, Coventry, West Midlands, United Kingdom; [2]Birmingham Children's Hospital NHS Foundation Trust, Birmingham, West Midlands, United Kingdom; [3]University of Birmingham, Birmingham, West Midlands, United Kingdom

1076. Hyperpolarized 13C Diffusion MRS of Copolarized Pyruvate and Fumarate Detects Evidence for Increased Lactate Export in 8932 Pancreas Carcinoma Cells Compared to MCF-7 Cells

Benedikt Feuerecker[1], Markus Durst[2], Dieter Saur[3], Marion I. Menzel[4], Markus Schwaiger[1], Franz Schilling[1]

[1]Nuclear Medicine, Technische Universität München, Munich, Bavaria, Germany; [2]GE Global Research, Munich, Germany; [3]Internal Medicine, Technische Universität München, Munich, Bavaria, Germany; [4]GE Global Research, Garching, Bavaria, Germany

Traditional Poster
Breast Cancer Technical

Exhibition Hall Monday 10:45-12:45

1077. High Spatial Resolution DWI for Evaluation of Breast Tumor Early Treatment Response: Association of ADC Changes with PCR

Lisa J. Wilmes[1], Wei-Ching Lo[1], Wen Li[1], David C. Newitt[1], Suchandrima Banerjee[2], Evelyn Proctor[1], Emine U. Saritas[3], Ajit Shankaranarayanan[2], Nola M. Hylton[1]

[1]University of California San Francisco, San Francisco, CA, United States; [2]GE Healthcare, Menlo Park, CA, United States; [3]Bilkent University, Ankara, Turkey

1078. Non-Cartesian Compressed Sensing with Fat/Water Decomposition: Feasibility Study for High Performance Breast DCE-MRI

Jorge E. Jimenez[1], Leah C. Henze Bancroft[1], Roberta M. Strigel, [12], Kevin M. Johnson[1], Scott B. Reeder[2, 3], Walter F. Block[1, 3]

[1]Department of Medical Physics, University of Wisconsin-Madison, Madison, WI, United States; [2]Department of Radiology, University of Wisconsin School of Medicine and Public health, Madison, WI, United States; [3]Department of Biomedical Engineering, University of Wisconsin-Madison, Madison, WI, United States

1079. Breast DCE with Fat Suppression: Enabling Quantitative Measurements

Maria A. Schmidt[1], Eva Kousi[1], Araminta Ledger[1], Erica Scurr[2], Cheryl Richardson[2], Georgina Hopkinson[2], Elizabeth O'FLynn[1], Steven Allen[2], Romney Pope[2], Robin Wilson[2], M Leach[1]

[1]CR-UK and EPSRC Cancer Imaging Centre, Royal Marsden NHS Foundation Trust and Institute of Cancer Research, Sutton, Surrey, United Kingdom; [2]Department of Radiology, Royal Marsden NHS Foundation Trust, Chelsea, London, United Kingdom

1080. A Quadrant-Based Quantitative Analysis of Background Parenchymal Enhancement in Breast MRI

Ella F. Jones[1], Natalie Hartman[1], Helen Park[1], Ania Azziz[1], David C. Newitt[1], John Kornak[2], Catherine Kilfa[1], Bonnie N. Joe[1], Nola M. Hylton[1]

[1]Radiology and Biomedical Imaging, University of California, San Francisco, San Francisco, CA, United States; [2]Epidemiology and Biostatistics, University of California, San Francisco, San Francisco, CA, United States

1081. High-Resolution Proton Density Weighted Dixon Sequences Maximize Precision of Breast Density Measurements

Araminta EW Ledger[1], Maria A. Schmidt[1], Marco Borri[1], Erica D. Scurr[2], Julie Hughes[2], Alison Macdonald[2], Toni Wallace[2], Robin Wilson[2], Martin O. Leach[1]

[1]CR-UK Cancer Imaging Centre, The Institute of Cancer Research and Royal Marsden NHS Foundation Trust, Sutton, Surrey, United Kingdom; [2]Radiology, The Royal Marsden NHS Foundation Trust, Sutton, Surrey, United Kingdom

1082. Modelling Vasculature and Cellular Restriction in Breast Tumours Using Diffusion MRI
Colleen Bailey[1], Sarah Vinnicombe[2], Eleftheria Panagiotaki[1], Shelley A. Waugh[2], John H. Hipwell[1], Patsy Whelehan[2], Sarah E. Pinder[3], Andrew Evans[2], Daniel C. Alexander[1], David J. Hawkes[1]
[1]Centre for Medical Image Computing, University College London, London, United Kingdom; [2]Dundee Cancer Centre, Ninewells Hospital and Medical School, Dundee, United Kingdom; [3]Breast Research Pathology, Research Oncology, King's College London and Guy's Hospital, London, United Kingdom

1083. Clinical Experience of Acquiring Both High Spatial and High Temporal Resolution Breast Dynamic Datasets Utilising a Differential Subsampling with Cartesian Ordering K-Space Acquisition Scheme
Martin D. Pickles[1], Dan W. Rettmann[2], Kang Wang[3], Lindsay W. Turnbull[1]
[1]Centre for Magnetic Resonance Investigations, Hull York Medical School at University of Hull, Hull, East Yorkshire, United Kingdom; [2]Global MR Applications and Workflow, GE Healthcare, Rochester, MN, United States; [3]Global MR Applications and Workflow, GE Healthcare, Madison, WI, United States

1084. Modulated Flip Angle Single Shot Fast Spin Echo: A Potential Means for Rapid T2W Breast Imaging
Martin D. Pickles[1], Daniel Litwiller[2], Ersin Bayram[3], Lloyd Estkowski[4], Lindsay W. Turnbull[1]
[1]Centre for Magnetic Resonance Investigations, Hull York Medical School at University of Hull, Hull, East Yorkshire, United Kingdom; [2]Global MR Applications and Workflow, GE Healthcare, Rochester, MN, United States; [3]Global MR Applications and Workflow, GE Healthcare, Waukesha, WI, United States; [4]Global MR Applications and Workflow, GE Healthcare, Menlo Park, CA, United States

1085. T_1 Mapping of Human Breast Tissue Using T_1, T_2 and PD Weighted MRI Images at 3T
Anup Singh[1], Prativa Sahoo[2], Vedant Kabra[3], Indrajit Saha[2], Meenakshi Singhal[3], Rakesh Kumar Gupta[3]
[1]Center for Biomedical Engineering, Indian Institute of Technology Delhi, New Delhi, Delhi, India; [2]Philips India Limited, Gurgaon, Haryana, India; [3]Fortis Memorial Research Institute, Gurgaon, Haryana, India

1086. Automatic Segmentation of Breast Images Using Clustering and Dynamic Programming
José Angel Rosado-Toro[1], Tomoe Barr[2], Marilyn T. Marron[3], Jean-Phillipe Galons[4], Patricia Thompson[3], Alison Stopeck[3], Jeffrey Joel Rodríguez[5], María I. Altbach[4]
[1]Electrical and Computer Engineering, University of Arizona, Tucson, AZ, United States; [2]Biomedical Engineering, University of Arizona, Tucson, AZ, United States; [3]Arizona Cancer Center, University of Arizona, Tucson, AZ, United States; [4]Medical Imaging, University of Arizona, Tucson, AZ, United States; [5]Electrical and Computer Engineering, University of Arizona, Tucson, Arizon, United States

1087. Correlation of 3D MR-Based Percent Breast Density with Apparent Diffusion Coefficient of the Breast Fibroglandular Tissue
Jeon-Hor Chen[1, 2], Hon J. Yu[1], Yifan Li[1], Yoon Jung Choi[3], Po Yun Huang[4], Min-Ying Su[1]
[1]Center for Functional Onco-Imaging, University of California, Irvine, CA, United States; [2]Department of Radiology, Eda Hospital and I-Shou University, Kaohsiung, Taiwan; [3]Department of Radiology, Kangbuk Samsung Hospital, Seoul, Korea; [4]Department of Medical Imaging, China Medical University, Taichung, Taiwan

1088. A Comparison of Breast Tissue T1 Mapping Using Conventional Multi-Flip Angle and 2-Point Dixon Techniques
Reem Bedair[1], Mary McLean[2], Andrew Patterson[3], Roie Manavaki[1], John Griffiths[2], Fiona Gilbert[1], Martin Graves[3]
[1]University of Cambridge, Department of Radiology, Cambridge, Cambridgeshire, United Kingdom; [2]Cancer Research UK Cambridge Research Institute, Cambridge, Cambridgeshire, United Kingdom; [3]Department of Radiology, Cambridge University Hospitals NHS Foundation Trust, Cambridge, Cambridgeshire, United Kingdom

1089. Optimisation of B-Value Distribution for Intravoxel Incoherent Motion (IVIM) Imaging of Breast Cancer with Clinical Results
Nina L. Purvis[1], Peter Gibbs[2], Martin D. Pickles[2], Lindsay W. Turnbull[2]
[1]Centre for MR Investigations, Hull York Medical School, Hull, East Yorkshire, United Kingdom; [2]Centre for MR Investigations, University of Hull at HYMS, Hull, East Yorkshire, United Kingdom

1090. Highly Accelerated DCE-MRI Pharmacokinetic Map Estimation Through Frequency Domain Based Tofts Model (HAET)
Nithin N. Vajuvalli[1], C K Dharmendra Kumar[1], Manoj G. Bhosale[1, 2], Sairam Geethanath[1]
[1]Medical Imaging Research Centre, Dayananda Sagar College of Engineering, Bangalore, Karnataka, India; [2]Government College of Engineering (COEP), Pune, Maharastra, India

1091. Design of a Spatially Varying Saturation Pulse Through Least-Squares
Tse Chiang Chen[1], Philip Beatty[1]
[1]Medical Biophysics, University of Toronto, Toronto, ON, Canada

Traditional Poster
Cancer: Preclinical Studies of Animal Models
Power Pitch Theatre, Exhibition Hall Monday 10:45-12:45

1092. Monitoring Cancer Treatment: Quantitative MRI of Tumor Micro-Structure and Metabolism with Chemical Exchange Saturation Transfer and Diffusion Weighted MRI
Rozhin Yousefi[1], Xiaoyong Huang[2], Stanley K. Liu[2], Greg J. Stanisz[1, 3]
[1]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [2]Sunnybrook Research Institute, Toronto, Ontario, Canada; [3]Sunnybrook Research Institute , Toronto, Ontario, Canada

1093. Determination of Tumor Response to Hypoxia-Activated Prodrug TH-302 in Rat Glioma Models
Ashley M. Stokes[1], Charles P. Hart[2], C. Chad Quarles[1]
[1]Institute of Imaging Science, Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [2]Threshold Pharmaceuticals, CA, United States

1094. Multimodal Imaging of a Mouse Model of Colorectal Carcinoma Metastasis in the Liver
Rajiv Ramasawmy[1, 2], Sean Peter Johnson[1, 2], Thomas Anthony Roberts[1], Daniel J. Stuckey[1], Anna L. David[3], Rosamund Barbara Pedley[2], Mark Francis Lythgoe†[1], Bernard Siow†[1], Simon Walker-Samuel†[1]
[1]Centre for Advanced Biomedical Imaging, University College London, London, Greater London, United Kingdom; [2]Cancer Institute, University College London, London, Greater London, United Kingdom; [3]Institute for Women's Health, University College London, London, Greater London, United Kingdom

1095. *In Vivo* Magnetic Resonance Elastography in Pediatric Brain Tumor Models
Jessica K.R. Boult[1], Jin Li[1], Yann Jamin[1], Maria Vinci[2, 3], Sergey Popov[2, 3], Karen Barker[4], Zai Ahmad[4], Craig Cummings[1], Suzanne A. Eccles[3], Jeffrey C. Bamber[1], Ralph Sinkus[5], Louis Chesler[4], Chris Jones[2, 3], Simon P. Robinson[1]
[1]Division of Radiotherapy and Imaging, The Institute of Cancer Research, London, United Kingdom; [2]Division of Molecular Pathology, The Institute of Cancer Research, London, United Kingdom; [3]CR-UK Division of Cancer Therapeutics, The Institute of Cancer Research, London, United Kingdom; [4]Division of Clinical Studies, The Institute of Cancer Research, London, United Kingdom; [5]Division of Imaging Sciences & Biomedical Engineering, Kings College London, London, United Kingdom

1096. High-Resolution MRI Analysis of Breast Cancer Xenografts on the CAM @ 11.7T
Zhi Zuo[1, 2], Tatiana Syrovets[3], Felicitas Genze[3], Alireza Abaei[2], Genshan Ma[4], Thomas Simmet[3], Volker Rasche[1, 2]
[1]Internal Medicine II, University Hospital Ulm, Ulm, Baden-Wurttemberg, Germany; [2]Core Facility Small Animal MRI, Medical Faculty, Ulm University, Ulm, Baden-Wurttemberg, Germany; [3]Institute of Pharmacology of Natural Products and Clinical Pharmacology, Ulm University, Ulm, Baden-W¨1rttemberg, Germany; [4]Department of Cardiology, Zhongda Hospital, Medical School of Southeast University, Nanjing, Jiangsu, China

1097. OKN-007 Decreases Tumor Necrosis and Tumor Cell Proliferation and Increases Apoptosis in a Pre-Clinical F98 Rat Glioma Model
Rheal A. Towner[1], Patricia Coutinho De Souza[1], Krithika Balasubramanian[2], Charity Njoku[1], Nataliya Smith[1], David L. Gillespie[3], Andrea Schwager[4], Osama Abdullah[5], Kar-Ming Fung[6], Debra Saunders[1], Randy L. Jensen[3]

[1]Advanced Magnetic Resonance Center, Oklahoma Medical Research Foundation, Oklahoma City, OK, United States; [2]Radiology & Biomedical Imaging, University of California San Francisco, CA, United States; [3]Huntsman Cancer Insitute, University of Utah Health Sciences Center, UT, United States; [4]Neurobiology & Anatomy, University of Utah Health Sciences Center, UT, United States; [5]Small Animal Core Facility, University of Utah, UT, United States; [6]Pathology, University of Oklahoma Health Sciences Center, OK, United States

1098. Oxidative Ketone Body Metabolism in Rat Brain Tumors and the Effect of the Ketogenic Diet: Evidence from *In Vivo* ^{1}H-[^{13}C] MRS

Henk M. De Feyter[1], Kevin L. Behar[2], Kevan L. Ip[1], Fahmeed Hyder[1], Lester L. Drewes[3], Robin A. de Graaf[1], Douglas L. Rothman[1]
[1]Department of Diagnostic Radiology, Yale University, New Haven, CT, United States; [2]Department of Psychiatry, Yale University, CT, United States; [3]Department of Biomedical Sciences, University of Minnesota, MN, United States

1099. MnMRI of Pancreatic Cancer

Lara Leoni[1], Martin Andrews[2], Chin-Tu Chen[3], Barry Lai[4], Brian B. Roman[5]
[1]University of Chicago, Chicago, Il, United States; [2]University of Chicago, IL, United States; [3]Radiology, University of Chicago, IL, United States; [4]Argonne National Laboratory, IL, United States; [5]radiology, university of chicago, Chicago, IL, United States

1100. Intravoxel Incoherent Motion Diffusion Weighted Imaging(IVIM-DWI) on a Mouse Xenografts Model of Human Nasopharyngeal Carcinoma CNE-2 Cell Line: A Preliminary Study on 3.0T MRI

Youping Xiao[1], Yunbin Chen[1], Jianji Pan[2], Ying Chen[1], Yiqi Yao[1], Xiang Zheng[1], Xiangyi Liu[1], Dechun Zheng[1], Weibo Chen[3]
[1]Radiology, Fujian Provincial Cancer Hospital, Fuzhou, Fujian, China; [2]Radiation Oncology, Fujian Provincial Cancer Hospital, Fuzhou, Fujian, China; [3]Philips Healthcare, Shanghai, China

1101. Mechanical Characterization of a Mouse GL261 Glioma Model Using MR Elastography

Jing Guo[1], Simon Bayerl[2], Jürgen Braun[3], Peter Vajkoczy[2], Ingolf Sack[1]
[1]Radiology, Charité - Universitätsmedizin Berlin, Berlin, Germany; [2]Department of Neurosurgery, Charité - Universitätsmedizin Berlin, Berlin, Germany; [3]Department of Medical Informatics, Charité - Universitätsmedizin Berlin, Berlin, Germany

1102. MR Characterization of a Syngeneic Orthotopic Ovarian Tumor Model

Marie-France Penet[1], Balaji Krishnamachary[1], Flonné Wildes[1], Yelena Mironchik[1], Chien-Fu Hung[2], TC Wu[2], Zaver M. Bhujwalla[1]
[1]JHU ICMIC Program, Division of Cancer Imaging Research, The Russell H Morgan Department of Radiology, The Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Department of Pathology, The Johns Hopkins University School of Medicine, Baltimore, MD, United States

1103. MRI Accurately Identifies Early Murine Mammary Cancers and Reliably Differentiates Between *in Situ* and Invasive Cancer: Correlation of MRI with Histology

Devkumar Mustafi[1], Erica Markiewicz[1], Marta Zamora[1], Xiaobing Fan[1], Jeffrey Mueller[2], Suzanne D. Conzen[3], Gregory S. Karczmar[1]
[1]Radiology, The University of Chicago, Chicago, IL, United States; [2]Pathology, The University of Chicago, Chicago, IL, United States; [3]Medicine, Section of Hematology and Oncology, The University of Chicago, Chicago, IL, United States

1104. Validation of Anti-VEGF Therapy in a Radiation Necrosis Mouse Model

Carlos J. Perez-Torres[1], Liya Yuan[2], Robert E. Schmidt[3], Keith M. Rich[2], Robert E. Drzymala[4], Joseph JH Ackerman[1, 5], Joel R. Garbow[1]
[1]Radiology, Washington University, Saint Louis, MO, United States; [2]Neurosurgey, Washington University, Saint Louis, MO, United States; [3]Neuropathology, Washington University, Saint Louis, MO, United States; [4]Radiation Oncology, Washington University, Saint Louis, MO, United States; [5]Chemistry, Washington University, Saint Louis, MO, United States

1105. Correlation of Quantitative MRI-Derived Tumor Characteristics with Histology in Breast Cancer Murine Models

Anna G. Sorace[1, 2], Stephanie L. Barnes[1, 2], Jennifer G. Whisenant[1, 2], Mary E. Loveless[1], Thomas E. Yankeelov[1, 2]
[1]Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [2]Vanderbilt University Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States

1106. Importance of Characterizing Water Content in Quantifying Metabolites in Pancreatic Cancer and Normal Pancreas

Marie-France Penet[1], Balaji Krishnamachary[1], Tariq Shah[1], Yelena Mironchik[1], Anirban Maitra[2], Zaver M. Bhujwalla[1]
[1]JHU ICMIC Program, Division of Cancer Imaging Research, The Russell H Morgan Department of Radiology, The Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]MD Anderson Cancer Center, The University of Texas, TX, United States

1107. Evaluation of Nanoparticle Accumulation and Treatment Efficacy for a Combined Heavy-Ion-Beam Irradiation and Drug-Delivery Tumor Therapy

Daisuke Kokuryo[1], Eiji Yuba[2], Kenji Kono[2], Tsuneo Saga[1], Ichio Aoki[1]
[1]Molecular Imaging Center, National Institute of Radiological Sciences, Chiba, Japan; [2]Graduate School of Engineering, Osaka Prefecture University, Sakai, Osaka, Japan

1108. NMR Based Pharmacometabolomics for Evaluating the Drug Response of Polyherbal Formulations

Gaurav Sharma[1], Somenath Ghatak[1], Arun Kumar Verma[2], Thirumurthy Velpandian[3], Rama Jayasundar[1]
[1]NMR, All India Institute of Medical Sciences, New Delhi, Delhi, India; [2]Biotechnology, All India Institute of Medical Sciences, New Delhi, Delhi, India; [3]Pharmacology, All India Institute of Medical Sciences, New Delhi, Delhi, India

Traditional Poster
Cancer: Clinical & Preclinical Studies on New Contrast Mechanisms

Exhibition Hall Monday 10:45-12:45

ISMRM MERIT AWARD magna cum laude

1109. Relaxation Along Fictitious Field, Diffusion Weighted Imaging, and T_2 Mapping of Prostate Cancer: Correlation of Quantitative Values with Gleason Score

Ivan Jambor[1], Marko Pesola[1], Harri Merisaari[2], Pekka Taimen[3], Peter J. Boström[4], Timo Liimatainen[5], Hannu J. Aronen[1]
[1]Department of Diagnostic Radiology, University of Turku, Turku, Finland; [2]Turku PET Centre, University of Turku, Turku, Finland; [3]Department of Pathology, Turku University Hospital, Turku, Finland; [4]Department of Urology, Turku University Hospital, Turku, Finland; [5]Department of Biotechnology and Molecular Medicine, A.I. Virtanen Institute for Molecular Sciences, University of Eastern Finland, Kuopio, Finland

1110. Repairing the Brain with Physical Exercise: Insights from Cortical Thickness Analysis of an Exercise Trial in Pediatric Brain Tumor Survivors

Kamila U. Szulc[1], Ade Oyefiade[2], Lily Riggs[1, 2], Eric Bouffet[3, 4], Suzanne Laughlin[5], Brian W. Timmons[6], Jason P. Lerch[7], Cynthia B. de Medeiros[2], Jovanka Skocic[1], Donald J. Mabbott[1, 2]
[1]Neurosciences and Mental Health, Hospital for Sick Children, Toronto, Ontario, Canada; [2]Department of Psychology, Hospital for Sick Children, Toronto, Ontario, Canada; [3]Division of Haematology/Oncology, Hospital for Sick Children, Toronto, Ontario, Canada; [4]Department of Pediatrics, Hospital for Sick Children, Toronto, Ontario, Canada; [5]Diagnostic Imaging, Hospital for Sick Children, Toronto, Ontario, Canada; [6]Department of Pediatrics, McMaster University, Hamilton, Ontario, Canada; [7]Mouse Imaging Centre, Hospital for Sick Children, Toronto, Ontario, Canada

1111. Manganese-Enhanced MRI of Minimally Gadolinium-Enhancing Breast Tumors

Hai-Ling Margaret Cheng[1, 2], Tameshwar Ganesh[2], Reza Bayat Mokhtari[3], Mosa Alhamami[2], Herman Yeger[3]
[1]Institute of Biomaterials & Biomedical Engineering, University of Toronto, Toronto, Ontario, Canada; [2]Physiology & Experimental Medicine, Hospital for Sick Children, Toronto, Ontario, Canada; [3]Developmental & Stem Cell Biology, Hospital for Sick Children, Toronto, Ontario, Canada

Traditional Poster
Tumor Therapy Response: Preclinical & Clinical (except Brain Tumor)
Exhibition Hall Monday 10:45-12:45

1112. Investigating PH and Other Effects of a Proton Pump Inhibitor (PPI) in Cancer Models with ^{31}P Magnetic Resonance
Gopal Varma[1], Xiaoen Wang[1], Han Xie[2], Gerburg Wulf[3], Pankaj Seth[2], David C. Alsop[1], Aaron K. Grant[1], Vikas P. Sukhatme[2]
[1]Radiology, Division of MR Research, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, United States; [2]Department of Medicine, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, United States; [3]Division of Hematology and Oncology, Department of Medicine, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, United States

1113. 19F MRSI of Capecitabine in the Liver Using Broadband TxRx Antennas and Dual-Frequency Excitation Pulses at 7T
Jetse van Gorp[1], Peter Seevinck[1], Anna Andreychenko[2], Alexander Raaijmakers[2], Peter Luijten[3], Miriam Koopman[4], Vincent Boer[3], Dennis Klomp[3]
[1]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands; [2]Department of Radiotherapy, University Medical Center Utrecht, Utrecht, Netherlands; [3]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [4]Department of Medical Oncology, University Medical Center Utrecht, Utrecht, Netherlands

1114. Mean-Shift Clustering for Assessing Response Heterogeneity in Bone Metastases
Sarah Ann Mason[1], Nina Tunariu[1], Dow-Mu Koh[1], David J. Collins[1], Martin O. Leach[1], Matthew D. Blackledge[1]
[1]Institute of Cancer Research and Royal Marsden Hospital, Sutton, Surrey, United Kingdom

1115. cPLA2 Inhibition Affects the Relationship Between Vascular Function and Structure in a Patient-Derived Breast Cancer Model: A Correlation Study of DCE-MRI Vs. Micro-CT
Eugene Kim[1], Astrid Jullumstrø Feuerherm[2, 3], Berit Johansen[2, 3], Olav Engebraaten[4], Gunhild Mari Mælandsmo[4], Tone Frost Bathen[1], Siver Andreas Moestue[1]
[1]MR Cancer Group, Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway; [2]Department of Biology, Norwegian University of Science and Technology, Trondheim, Norway; [3]Avexxin AS, Trondheim, Norway; [4]Department of Tumor Biology, Institute for Cancer Research, Oslo University Hospital, Oslo, Norway

1116. Assessing the Utility of Oxygen-Enhanced Magnetic Resonance Imaging (OE-MRI) to Predict Radiation Response of Rat Prostate Tumors
Derek A. White[1, 2], Zhang Zhang[3], Heling Zhou[1], Debu Saha[3], Peter Peschke[4], Zhongwei Zhang[1], Ralph P. Mason[5]
[1]Radiology, University of Texas Southwestern, Dallas, TX, United States; [2]Bioengineering, University of Texas at Arlington, TX, United States; [3]Radiation Oncology, University of Texas Southwestern, Dallas, TX, United States; [4]Clinical Cooperation Unit Molecular Radiooncology, German Cancer Center, Heidelberg, Germany; [5]Radiology, University of Texas Southwestern , Dallas, TX, United States

1117. Quantitative Analysis of Multi-Parametric FLT-PET/MRI in Evaluating Early Treatment Response in Renal Cell Carcinoma
Jacob Antunes[1], Satish Viswanath[1], Mirabela Rusu[1], Laia Valls[2], Norbert Avril[2], Christopher Hoimes[2], Anant Madabhushi[1]
[1]Center for Computational Imaging and Personalized Diagnostics, Case Western Reserve University, Cleveland, OH, United States; [2]University Hospitals Case Medical Center, Cleveland, OH, United States

1118. Early Detection of Treatment-Induced Apoptosis in Tumors Using Temporal Diffusion Spectroscopy MRI
Xiaoyu Jiang[1], Hua Li[1], Ping Zhao[1], H. Charles Manning[1], Junzhong Xu[1], John C. Gore[1]
[1]Institute of Imaging Science, vanderbilt university, nashville, TN, United States

Traditional Poster
Tumor Perfusion & Permeability Applications
Exhibition Hall Monday 10:45-12:45

1119. Highly Accelerated DCE-MRI Using Region of Interest Compressed Sensing
Amaresha Shridhar Konar[1], Nithin N. Vajuvalli[1], Rashmi R. Rao[1], Divya Jain[1], Dharmendra CK Kumar[1], Sairam Geethanath[1]
[1]Medical Imaging Research Center, Dayananda Sagar College of Engineering, Bangalore, Karnataka, India

1120. Perfusion Correlated Heterogeneity in NSCLC Patient Tumor Glucose Metabolism
Christopher Hensley[1], Eunsook Jin[2, 3], Naama Lev-Cohain[4], Qing Yuan[4], Kemp Kernstine[5], Craig Malloy[6, 7], Robert Lenkinski, [67], Ralph Deberardinis[8, 9]
[1]Children's Research Institute, University of Texas Southwetern Medical Center, Dallas, TX, United States; [2]Advanced Imaging Research Center, University of Texas Southwetern Medical Center , TX, United States; [3]Internal Medicine, University of Texas Southwetern Medical Center, TX, United States; [4]Radiology, University of Texas Southwetern Medical Center, TX, United States; [5]Cardiovascular and Thoracic Surgery, University of Texas Southwetern Medical Center, TX, United States; [6]Advanced Imaging Research Center, University of Texas Southwetern Medical Center at Dallas, TX, United States; [7]Radiology, University of Texas Southwetern Medical Center at Dallas, TX, United States; [8]Children's Research Institute, University of Texas Southwetern Medical Center at Dallas, TX, United States; [9]Pediatrics, University of Texas Southwetern Medical Center at Dallas, TX, United States

1121. Monitoring Quantitative Tumor Blood Volume in Mouse Brain Under Bevacizumab by the RSST1-MRI Method.
Michel Sarraf[1, 2], Flavien Caraguel[1], François Berger[1], Boudewijn Van Der Sanden[1], Hana Lahrech[1]
[1]CEA-CLINATEC, Grenoble, Isère, Rhône-Alpes, France; [2]Saint Joseph University, Beyrouth, Lebanon

Traditional Poster
Cancer: Cells, Biopsy, Body Fluids
Exhibition Hall Monday 10:45-12:45

1122. 13C NMR Studies of Lymphoma and Melanoma Cells in the Perfusion Bioreactor and *In Vivo* Xenografts for Flux Calculation
Seung-Cheol Lee[1], Jeffrey Roman[1], Kavindra Nath[1], David Nelson[1], Kevin Muriuki[1], Alexander Shestov[1], Jerry Glickson[1]
[1]Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States

1123. 13C MRS/Bioreactor Technique to Study Melanoma: Quantifying Glutaminolysis and De Novo Lipogenesis
Alexander A. Shestov[1], Anthony Mancuso[2], Pierre Gilles Henry[3], Dennis B. Leeper[4], Jerry David Glickson[5]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Radiology, University of Pennsylvania, PA, United States; [3]University of Minnesota, MN, United States; [4]Radiation Oncology, Thomas Jefferson University, PA, United States; [5]Radiology, Univesity of Pennsylvania, PA, United States

1124. Noninvasive Image-Based Quantification of 18F-Fluoromisonidazole (FMISO) Uptake Using PET/MRI
Dragana Savic[1], Youngho Seo[1], Randall Hawkins[1], Soonmee Cha[1], Miguel Pampaloni[1], Sharmila Majumdar[1], Ramon Barajas[1]
[1]Radiology and Biomedical Imaging, University of California, San Francisco (UCSF), San Francisco, CA, United States

1125. Investigation of Prostate Cancer Metabolomics with Prostate Biopsy Cores
Emily Decelle[1], Taylor Fuss[1], Shulin Wu[1], Adam Feldman[2], Douglas Dahl[2], Aria Olumi[2], W Scott McDougal[2], Chin-Lee Wu[1], Leo L. Cheng[3]
[1]Pathology, Massachusetts General Hospital, Boston, MA, United States; [2]Urology, Massachusetts General Hospital, Boston, MA, United States; [3]Pathology and Radiology, Massachusetts General Hospital, Boston, MA, United States

1126. Differences in Phospholipid and Lipid Metabolism Between Cancer Cells in Culture and in Solid Tumors
Noriko Mori[1], Flonné Wildes[1], Tomoyo Takagi[1], Kristine Glunde[1, 2], Zaver M. Bhujwalla[1, 2]
[1]The Russell H. Morgan Department of Radiology and Radiological Science, The Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]The Sidney Kimmel Comprehensive Cancer Center, The Johns Hopkins University School of Medicine, MD, United States

1127. Glutamate Dehydrogenase Inhibition Reduces Glutamine Conversion Into 2HG in IDH1-Mutated Cancer Cells as Detected by ^{13}C MRS
Tom Peeters[1], Vincent Breukels[1], Corina van den Heuvel[2], Anna Navis[2], Sanne van Lith[2], Jack van Asten[1], Remco Molenaar[3], William Leenders[2], Arend Heerschap[1]
[1]Department of Radiology and Nuclear Medicine, Radboudumc, Nijmegen, Netherlands; [2]Department of Pathology, Radboudumc, Nijmegen, Netherlands; [3]Department of Cell Biology and Histology, Academic Medical Center, Amsterdam, Netherlands

ISMRM MERIT AWARD magna cum laude

1128. *In Vivo* High Resolution Multifrequency MR Elastography of Neuro Tumors Compared to Single Cell Mechanical Properties
Ingolf Sack[1], Anatol Fritsch[2], Steve Pawlizak[2], Martin Reiss-Zimmermann[3], Karl-Titus Hoffmann[3], Felix Arlt[4], Wolf Müller[5], Jing Guo[1], Jürgen Braun[6], Josef Käs[2]
[1]Radiology, Charité - Universitätsmedizin Berlin, Berlin, Germany; [2]Physics and Earth Sciences, University of Leipzig, Saxony, Germany; [3]Department of Neuroradiology, University Hospital, University of Leipzig, Saxony, Germany; [4]Department of Neurosurgery, University Hospital, University of Leipzig, Saxony, Germany; [5]Department of Neuropathology, University Hospital, University of Leipzig, Saxony, Germany; [6]Department of Medical Informatics, Charité - Universitätsmedizin Berlin, Berlin, Germany

1129. Amine as a Novel Biomarker for Differentiating Malignancy of Breast Cancer Cells
Xiao-Yong Zhang[1], Jingping Xie[1], Hua Li[1], Junzhong Xu[1], John C. Gore[1], Zhongliang Zu[1]
[1]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States

Traditional Poster
Breast Cancer Clinical

Exhibition Hall		Monday 10:45-12:45

1130. Assessment of Tumor Morphology on Diffusion-Weighted Breast MRI: Diagnostic Value of Reduced FOV High Resolution Diffusion-Weighted Imaging
Maarten W. Barentsz[1], Valentina Taviani[2], Jung M. Chang[3], Debra M. Ikeda[2], Kanae K. Myiake[4], Suchandrima Banerjee[5], Maurice A.A.J. van den Bosch[1], Brian A. Hargreaves[2], Bruce L. Daniel[2]
[1]Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]Radiology, Stanford University, Stanford, CA, United States; [3]Radiology, Seul National University Hospital, Seul, Korea; [4]Diagnostic Imaging and Nuclear Medicine, Kyoto University Hospital, Kyoto, Japan; [5]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States

1131. DW-PSIF in Breast MRI
Catherine J. Moran[1], Jung Min Chang[2], Marcus T. Alley[1], Kanae Kawai Miyake[1], Debra M. Ikeda[1], Brain A. Hargreaves[1], Kristin L. Granlund[1], Bruce L. Daniel[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Seoul National University Hospital, Seoul, Korea

1132. Breast Tumors Characterization Using Diffusion Kurtosis Imaging
Yongming Dai[1], Junxiang Zhang[2], Dongmei Wu[3]
[1]Philips Healthcare, Shanghai, China; [2]Department of Radiology, The First Affiliated Hospital of Bengbu Medical College,, Anhui, China; [3]Shanghai Key Laboratory of Magnetic Resonance, East China Normal University, Shanghai, China

1133. Novel Dynamic Contrast Enhanced Breast MRI with High Spatiotemporal Resolution and Fat Separation: Image Quality Compared to the Clinical Standard-Of-Care MRI
Roberta M. Strigel[1, 2], Courtney K. Morrison[2], Leah C. Henze Bancroft[1], James H. Holmes[3], Kang Wang[3], Wendy B. DeMartini[1], Alejandro Munoz del Rio[1, 2], Frank R. Korosec[1, 2]
[1]Radiology, University of Wisconsin, Madison, WI, United States; [2]Medical Physics, University of Wisconsin, Madison, WI, United States; [3]Global MR Applications and Workflow, GE Healthcare, Madison, WI, United States

1134. MRI Functional Parameters in Breast Cancer:T2*, ADC and Contrast Agent Uptake

Evanthia Kousi[1], Maria A. Schmidt[1], Marco Borri[1], Cheryl Richardson[2], Georgina Hopkinson[2], Elizabeth A.M. O'Flynn[1], Robin M. Wilson[2], Steven Allen[2], Romney J.E. Pope[2], Martin O. Leach[1]
[1]CR-UK and EPSRC Imaging Centre, Royal Marsden NHS Foundation Trust and Institute of Cancer Reasearch, Sutton, Surrey, United Kingdom; [2]Department of Radiology, Royal Marsden NHS Foundation Trust , Chelsea, London, United Kingdom

1135. Magnetization Transfer Ratio Variations in Malignant Breast Lesions and Parenchyma

Andrew J. Patterson[1], Mary M. McLean[2], Reem Bedair[1], Andrew N. Priest[1], John R. Griffiths[2], Martin J. Graves[1], Fiona J. Gilbert[1]
[1]Department of Radiology, Cambridge University Hospitals NHS Foundation Trust, Cambridge, England, United Kingdom; [2]Cancer Research UK Cambridge Insititute, Li Ka Shing Cambridge, Cambridge, England, United Kingdom

1136. Evaluation of Lipid Composition in Patients with Benign Tissue and Cancer Using Multiple Gradient Echo MRI

Melanie Freed[1, 2], Pippa Storey[1, 2], Alana Amarosa Lewin[1], Melanie Moccaldi[1], Linda Moy[1], Sungheon G. Kim[1, 2]
[1]Center for Biomedical Imaging, Department of Radiology, NYU School of Medicine, New York, NY, United States; [2]Center for Advanced Imaging Innovation and Research (CAI2R), Dept. Radiology, NYU School of Medicine, New York, NY, United States

1137. Quantitative DCE Analysis for Breast Imaging: The Benefit of Dixon Fat-Water Separation in an Ultrafast TWIST-VIBE Protocol

Elisabeth Weiland[1], Sandra Peter[2], Dominik Nickel[1], Rolf Janka[2], Michael Uder[2], Evelyn Wenkel[2]
[1]MR Application Developement, Siemens Healthcare, Erlangen, Germany; [2]Radiology, University of Erlangen, Germany

1138. Alterations to Breast Tissue Chemistry in Women at Risk of Cancer: 2D MR Spectroscopy *In Vivo* Study

Jessica Buck[1], Saadallah Ramadan[1], Leah Best[2], Judith Silcock[3], Jameen Arm[2], Scott Quadrelli[1], Gorane Santamaria[1], Kin Men Leong[2], Peter Lau[2], Peter Malycha[1], David Clark[1, 3], Carolyn Mountford[1, 4]
[1]Centre for MR in Health, University of Newcastle, Newcastle, NSW, Australia; [2]Calvary Mater Hospital, Newcastle, NSW, Australia; [3]The Breast and Endocrine Centre, Gateshead, NSW, Australia; [4]Centre for Clinical Spectroscopy, Department of Radiology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, United States

1139. Assessment of Background Parenchymal Enhancement in Breast MRI of BRCA 1/2 Mutation Carriers Compared to Matched Controls

Alana Amarosa Lewin[1], Sungheon Kim[1], James S. Babb[1], Amy N. Melsaether[1], Jason McKellop[1], Melanie Moccaldi[2], Ana Paula Klautau Leite[3], Linda Moy[1]
[1]Radiology, New York University School of Medicine, New York, United States; [2]Radiology, New York University Cancer Institute, New York, United States; [3]Radiology, Hospital das Clínicas, School of Medicine, University of São Paulo, Brazil

1140. A Practical Approach to Pharmacokinetic Modelling in Monitoring Neoadjuvant Chemotherapy in Breast Cancer

Reem Bedair[1], Andrew Patterson[2], Mary McLean[3], Roie Manavaki[1], Scott Reid[4], John Griffiths[3], Martin Graves[2], Fiona Gilbert[1]
[1]University of Cambridge, Department of Radiology, Cambridge, Cambridgeshire, United Kingdom; [2]Department of Radiology, Cambridge University Hospitals NHS Foundation Trust, Cambridge, Cambridgeshire, United Kingdom; [3]Cancer Research UK Cambridge Research Institute, Cambridge, Cambridgeshire, United Kingdom; [4]GE Healthcare, Diagnostic Imaging, Buckingham, Buckinghamshire, United Kingdom

1141. Characterization of Invasive Breast Cancer Using Quantitative DCE-MRI at 3.0T

Reem Bedair[1], Martin Graves[2], Mary McLean[3], Scott Reid[4], Roie Manavaki[1], John Griffiths[3], Andrew Patterson[2], Fiona Gilbert[1]
[1]University of Cambridge, Department of Radiology, Cambridge, Cambridgeshire, United Kingdom; [2]Department of Radiology, Cambridge University Hospitals NHS Foundation Trust, Cambridge, Cambridgeshire, United Kingdom; [3]Cancer Research UK Cambridge Research Institute, Cambridge, Cambridgeshire, United Kingdom; [4]GE Healthcare, Diagnostic Imaging, Buckingham, Buckinghamshire, United Kingdom

1142. Influence of Breast Cancer Receptor Status on Multi-Parametric Magnetic Resonance Imaging for Predicting Treatment Response: Preliminary Results
Xia Li[1], Vandana G. Abramson[1], Lori R. Arlinghaus[1], Hakmook Kang[1], Jason M. Williams[1], Richard G. Abramson[1], A. Bapsi Chakravarthy[1], Praveen Pendyala[1], Thomas E. Yankeelov[1]
[1]Vanderbilt University, Nashville, TN, United States

1143. Does Breast Peritumoral Tissue Hold Valuable Information for Texture Analysis?
Michael Fox[1], Peter Gibbs[1], Martin Pickles[1], Lindsay W. Turnbull[1]
[1]Centre for MR Investigations, HYMS at University of Hull, Hull, East Yorkshire, United Kingdom

1144. The Association of Breast Density with Tumor Subtypes: Evaluation with 3D MRI
Jeon-Hor Chen[1, 2], Yifan Li[1], Yoon Jung Choi[3], Chen-Pin Chou[4], Tsung-Lung Yang[4], Min-Ying Su[1]
[1]Center for Functional Onco-Imaging, University of California, Irvine, CA, United States; [2]Department of Radiology, Eda Hospital and I-Shou University, Kaohsiung, Taiwan; [3]Department of Radiology, Kangbuk Samsung Hospital, Seoul, Korea; [4]Department of Radiology, Kaohsiung Veterans General Hospital, Kaohsiung, Taiwan

1145. Minkowski Functionals in MRI: A New Texture Analysis Tool in Breast MRI
Michael Fox[1], Peter Gibbs[1], Martin Pickles[1], Lindsay W. Turnbull[1]
[1]Centre for MR Investigations, HYMS at University of Hull, Hull, East Yorkshire, United Kingdom

1146. Estimation of Fat Fractions in Different Subtypes of Breast Cancer Using *In-Vivo* 1H MRS Study
Khushbu Agarwal[1], Uma Sharma[1], Smriti Hari[2], Vurthaluru Seenu[3], Rajinder Parshad[3], Naranamangalam R. Jagannathan[1]
[1]Department of NMR & MRI Facility, All India Institute of Medical Sciences, New Delhi, Delhi, India; [2]Department of Radiodiagnosis, All India Institute of Medical Sciences, New Delhi, Delhi, India; [3]Department of Surgical Disciplines, All India Institute of Medical Sciences, New Delhi, Delhi, India

Traditional Poster
Cancer: Prostate
Exhibition Hall Monday 10:45-12:45

1147. Rapid Quantitative T2-Mapping of the Prostate Using 3D Dual Echo Steady State (DESS)
Isabel Dregely[1], Daniel AJ Margolis, Kyung Sung[1], Novena Rangwala[1], Steve Raman[2], Holden H. Wu[1]
[1]Radiological Sciences, University of California Los Angeles, Los Angeles, CA, United States; [2]University of California Los Angeles, CA, United States

ISMRM MERIT AWARD magna cum laude

1148. Modelling Tissue Microstructure in Bone Metastases from Prostate Cancer Using VERDICT MRI
Colleen Bailey[1], Eleftheria Panagiotaki[1], Nina Tunariu[2], Matthew R. Orton[3], Veronica A. Morgan[3], Thorsten Feiweier[4], David J. Hawkes[1], Martin O. Leach[3], David J. Collins[3], Daniel C. Alexander[1]
[1]Centre for Medical Image Computing, University College London, London, United Kingdom; [2]Radiology, Royal Marsden NHS Foundation Trust and Institute of Cancer Research, Sutton, United Kingdom; [3]CR-UK and EPSRC Cancer Imaging Centre, Institute of Cancer Research and Royal Marsden NHS Foundation Trust, London, United Kingdom; [4]Healthcare Sector, Siemens AG, Erlangen, Germany

1149. A Novel Prostate MR Elastography Technique Based on Image Similarity
Seyed Reza Mousavi[1], Seyyed Mohammad Hesabgar[2], Timothy Scholl[2, 3], Abbas Samani[2, 3]
[1]Clinical Neurological Sciences, University of Western Ontario, London, Ontario, Canada; [2]Medical Biophysics, University of Western Ontario, London, Ontario, Canada; [3]Robarts Research Institute, London, Ontario, Canada

1150. DCE-MRI Appearance of Prostate After Androgen Deprivation Therapy – Preliminary Results

Lucy E. Kershaw[1, 2], Andrew J. McPartlin, [23], Ananya Choudhury, [23]
[1]CMPE, The Christie NHSFT, Manchester, United Kingdom; [2]Institute of Cancer Sciences, The University of Manchester, Manchester, United Kingdom; [3]Oncology, The Christie NHSFT, Manchester, United Kingdom

1151. Comparison of Prostate Tumor Volume Delineation Between Multi-Parametric MRI Sequences When Planning for Hypofractionated Radiotherapy

Hugh Harvey[1], Veronica Morgan[2], David Dearnaley[3], Sharon Giles[2], Alison Macdonald[2], Julia Murray[3], Nandita deSouza[1]
[1]CRUK Cancer Imaging Centre, The Institute of Cancer Research, Sutton, Surrey, United Kingdom; [2]The Royal Marsden NHS Foundation Trust, Surrey, United Kingdom; [3]Radiotherapy & Imaging, The Institute of Cancer Research, London, United Kingdom

1152. Sensitive Detection of Zinc(II) in the Prostate with a Gadolinium-Based MRI Contrast Agent

Veronica Clavijo Jordan[1, 2], Christian Preihs[1], Shiuhwei Chen[3], Shanrong Zhang[1], Wen-hong Li[3], Neil Rofsky[2], Dean Sherry[1, 4]
[1]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States; [2]Department of Radiology, UT Southwestern Medical Center, Dallas, TX, United States; [3]Departments of Cell Biology and of Biochemistry, UT Southwestern Medical Center, Dallas, TX, United States; [4]Department of Chemistry, UT Dallas , TX, United States

1153. Bi-Exponential Diffusion Analysis in Normal Prostate and Prostate Cancer: Transition Zone and Peripheral Zone Considerations

Thiele Kobus[1, 2], Andriy Fedorov[1], Clare Tempany[1], Robert Mulkern[3], Ruth Dunne[1], Stephan E. Maier[1]
[1]Radiology, Brigham and Women's Hospital, Boston, MA, United States; [2]Radiology, Radboud UMC, Nijmegen, Netherlands; [3]Radiology, Children's Hospital, Boston, MA, United States

1154. A Novel Computer-Assisted Approach for Prostate Cancer Diagnosis on T2w MRI

Haibo Wang[1], Satish viswanath[2], Asha Singanamalli[3], Anant Madabhushi[4]
[1]Case Western Reserve University, Cleveland Heights, OH, United States; [2]Biomedical Engineering, Case Western Reserve University, Cleveland Heights, OH, United States; [3]Case Western Reserve University, OH, United States; [4]Biomedical Engineering, Case Western Reserve University, OH, United States

1155. MRI-Guided Focal Laser Ablation of Prostate Cancer: Comparison of Targeted and Ablated Volumes

Holden H. Wu[1], Alan Priester[2, 3], Shyam Natarajan[2, 3], Kyunghyun Sung[1], Daniel Margolis[1], Warren Grundfest[2, 3], Leonard Marks, [34], Steven Raman[1]
[1]Radiological Sciences, University of California Los Angeles, Los Angeles, CA, United States; [2]Biomedical Engineering, University of California Los Angeles, CA, United States; [3]Center for Advanced Surgical and Interventional Technology (CASIT), University of California Los Angeles, CA, United States; [4]Urology, University of California Los Angeles, CA, United States

1156. Pilot: MRI Differences Associated with Dutasteride and Finasteride Treatments in Patients with Low Risk Prostate Cancer

Olga Starobinets[1, 2], John Kornak[3], John Kurhanewicz[1, 2], Susan M. Noworolski[1, 2]
[1]Radiology and Biomedical Imaging, UCSF, San Francisco, CA, United States; [2]Graduate Group in Bioengineering, UC Berkeley, Berkeley, CA, United States; [3]Epidemiology and Biostatistics, UCSF, San Francisco, CA, United States

1157. Diagnostic Performance of 68Ga-PSMA-PET/MRI Versus 68Ga-PSMA-PET/CT in the Evaluation of Lymph Node and Bone Metastases of Prostate Cancer

Martin Thomas Freitag[1], Jan Radtke[1, 2], Boris Hadaschik[2], Uwe Haberkorn[3], Heinz-Peter Schlemmer[1], Matthias Roethke[1], Ali Afshar-Oromieh[3]
[1]Department of Radiology, German Cancer Research Center, Heidelberg, Baden-Wuerttemberg, Germany; [2]Department of Urology, University hospital of Heidelberg, Heidelberg, Baden-Wuerttemberg, Germany; [3]Department of Nuclear Medicine, University hospital of Heidelberg, Heidelberg, Baden-Wuerttemberg, Germany

1158. The Influence of Polyamines on Metabolite Ratios in the Prostate at 7 Tesla

Mariska P. Luttje[1], Catalina S. Arteaga de Castro[2], Peter R. Luijten[1], Marco van Vulpen[1], Uulke A. van der Heide[3], Dennis WJ Klomp[1]
[1]Imaging Division, University Medical Center Utrecht, Utrecht, Netherlands; [2]Department of Radiotherapy, the Netherlands Cancer Institute - Antoni van Leeuwenhoek hospital, Amsterdam, Netherlands; [3]Department of Radiotherapy, , the Netherlands Cancer Institute - Antoni van Leeuwenhoek hospital, Amsterdam, Netherlands

1159. Clinical Assessment of B1+ Inhomogeneity Effects on Quantitative Prostate MRI at 3.0 T

Xinran Zhong[1, 2], Novena Rangwala[1], Steven Raman[1], Daniel Margolis[1], Holden Wu[1, 2], Kyunghyun Sung[1, 2]
[1]Radiological Sciences, University of California Los Angeles, Los Angeles, CA, United States; [2]Biomedical Physics Interdepartmental Program, University of California Los Angeles, Los Angeles, CA, United States

1160. Validation of Real Time Virtual Sonography (RVS) for Targeted MR-Ultrasound Guided Transrectal Prostate Biopsies Against Transperineal Template Saturation Biopsies for Service Development

Victoria Sherwood[1], Donald MacDonald[2], James Harding[3], Nicholas Hedley[3], Kieran Jefferson[2], Chris Koller[1], Charles Hutchinson[3]
[1]Department of Radiology Physics, University Hospitals Coventry & Warwickshire NHS Trust, Coventry, Warwickshire, United Kingdom; [2]Department of Urology, University Hospitals Coventry & Warwickshire NHS Trust, Coventry, Warwickshire, United Kingdom; [3]Department of Radiology, University Hospitals Coventry & Warwickshire NHS Trust, Coventry, Warwickshire, United Kingdom

1161. T2-Weighted 3D Variable-Flip Angle Turbo Spin Echo Compared to Standard 2D T2-Weighted Imaging at 3T for Prostate Cancer Detection in a Patient Cohort Undergoing MR/US Fusion Biopsy

Steven M. Shea[1], Joseph M. Yacoub[1], Gopal N. Gupta[2], Grace Yoon[3], Ari Goldberg[1]
[1]Radiology, Loyola University Chicago, Maywood, IL, United States; [2]Urology, Loyola University Chicago, Maywood, IL, United States; [3]Stritch School of Medicine, Loyola University Chicago, Maywood, IL, United States

1162. *In Vivo* Sodium Imaging of Human Prostate Cancer

Justin Charles Peterson[1], Adam Farag[2], Trevor Szekeres[2], Eli Gibson[2, 3], Aaron D. Ward[2, 3], Joseph Chin[4], Stephen Pautler[5], Glenn Bauman[4], Cesare Romagnoli[4], Robert Bartha[1, 2], Timothy J. Scholl[1, 2]
[1]Medical Biophysics, Western University, London, Ontario, Canada; [2]Robarts Research Institute, Ontario, Canada; [3]Biomedical Engineering, Western University, Ontario, Canada; [4]London Health Sciences Centre, Ontario, Canada; [5]St. Joseph's Health Care, Ontario, Canada

1163. Initial Evaluation of T2 Shine-Through Elimination with Relax DWI

Paul Summers[1], Daniel Chong[2], Valentina Elli[3], Daniele Giardiello[4], Mehran Vaziri[1], Giuseppe Petralia[1], Massimo Bellomi[1, 3]
[1]European Institute of Oncology, Milan, Italy; [2]Stillpig Software, Sarawak, Malaysia; [3]University of Milan, Milan, Italy; [4]University of Milan - Bicocca, Milan, Italy

1164. Using Multiparametric MRI to Differentiate Prostate Cancer in the Anterior Aspect of the Gland

Olga Starobinets[1, 2], Jeffry Simko[3, 4], Kyle Kuchinsky[3], Sonam Machingal[1], John Kurhanewicz[1, 2], Peter R. Carroll[4], Kirsten L. Greene[4], Susan M. Noworolski[1, 2]
[1]Radiology and Biomedical Imaging, UCSF, San Francisco, CA, United States; [2]Graduate Group in Bioengineering, UC Berkeley, Berkeley, CA, United States; [3]Pathology, UCSF, San Francisco, CA, United States; [4]Urology, UCSF, San Francisco, CA, United States

1165. Validation of T2 Mapping for Treatment Response Monitoring in Longitudinal Multi-Center Clinical Trials

Petra J. van Houdt[1], Harsh K. Agarwal[2, 3], Laurens B. van Buuren[1], Marko Ivancevic[4], Søren Haack[5], Jesper Folsted Kallehauge[6], Peter L. Choyke[3], Uulke A. van der Heide[1]
[1]Radiation Oncology, the Netherlands Cancer Institute, Amsterdam, Netherlands; [2]Philips Research NA, Briarcliff Manor, MD, United States; [3]National Cancer Institute, National Institutes of Health, Bethesda, NY, United States; [4]Philips Healthcare, Best, Netherlands; [5]Clinical Engineering, Aarhus University Hospital, Aarhus, Denmark; [6]Medical Physics, Aarhus University Hospital, Aarhus, Denmark

1166. A Multi-Site Study to Develop a New Pseudo-Quantitative T2w MRI Map for Prostate Cancer Characterization: Preliminary Findings
Satish Easwar Viswanath[1], Chun Yeung Yim[2], Nicolas Bloch[3], Mark Rosen[4], John Kurhanewicz[5], Anant Madabhushi[6]
[1]Case Western Reserve University, Cleveland , OH, United States; [2]Rutgers University, New Brunswick, NJ, United States; [3]Boston University, MA, United States; [4]University of Pennsylvania, PA, United States; [5]University of California San Francisco, CA, United States; [6]Case Western Reserve University, OH, United States

1167. Diagnostic Performance of the ESUR PI-RADS Scoring System for Multiparametric MRI of the Prostate: Systematic Comparison of Four Parameters Versus Three Parameters for Detection and Grading of Prostate Cancer
Stephan Polanec[1], Katja Pinker[1], Martin Suasani[1], Peter Brader[1], Dietmar Georg[1], Thomas Helbich[1], Pascal Baltzer[1]
[1]General Hospital of the Medical University of Vienna!, Vienna, Austria

1168. Radiogenomics of Prostate Cancer: Association Between Quantitative Multi-Parametric MRI Features and PTEN Expression
Aytekin Oto[1], David VanderWeele[2], Yulei Jiang[1], Stephanie Maria McCann[1], Xiaobing Fan[1], Jianing Wang[1], Tatjana Antic[3]
[1]Radiology, The University of Chicago Medicine, Chicago, IL, United States; [2]Internal Medicine, The University of Chicago Medicine, Chicago, IL, United States; [3]Pathology, The University of Chicago Medicine, Chicago, IL, United States

1169. The Application of Sparse Reconstruction to High Spatio-Temporal Resolution Dynamic Contrast Enhanced MRI of the Prostate: Initial Clinical Experience with Effect on Image and Parametric Perfusion Characteristic Quality
Adam T. Froemming[1], Eric A. Borisch[2], Joshua D. Trzasko[2], Roger C. Grimm[2], Armando Manduca[2], Phillip Young[3], Stephen J. Riederer[3], Akira Kawashima[3]
[1]Radiology, Mayo Clinic, Rochester, MN, United States; [2]Physiology and Biomedical Engineering, Mayo Clinic, MN, United States; [3]Radiology, Mayo Clinic, MN, United States

Traditional Poster
Cancer: Other Cancer
Exhibition Hall Monday 10:45-12:45

1170. Pre-Operative T Stage Evaluation of Esophageal Carcinoma: A Comparison Study Between Self-Gating Radial VIBE and Breath-Hold VIBE
Fengguang Zhang[1], Jinrong Qu[1], Hui Liu[2], Xiang Li[1], Hongkai Zhang[1], Hailiang Li[1], Grimm Robert[3], Kiefer Berthold[3], Xuejun Chen[1]
[1]Radiology, Henan Tumor Hospital, Zhengzhou, Henan, China; [2]NEA MR Collaboration, Siemens Ltd., China, Shanghai, China; [3]Healthcare, Siemens AG, Erlangen, Germany

1171. Isotropic Diffusion Spectrum Imaging Constrained by Independent Component Analysis with a Ball and Stick Model to Assess Cellularity of Brain Tumors
JEONG-WON JEONG[1, 2], Csaba Juhász[1, 3], Sandeep Mittal,[34], Edit Bosnyák[1], Diane C. Chugani[1, 2]
[1]Pediatrics and Neurology, Wayne State University, Detroit, MI, United States; [2]Children's Hospital of Michigan, Detroit, MI, United States; [3]Karmanos Cancer Institute, Detroit, MI, United States; [4]Neurosurgery and Oncology, Wayne State University, Detroit, MI, United States

1172. Comparison of Intravoxel Incoherent Motion Characteristics Between Different Tumor Stages and Grades in Rectal Cancer
Hongliang Sun[1], Yanyan Xu[1], Aiping Song[2], Wu Wang
[1]Radiology, China-Japan Friendship Hospital, Beijing, China; [2]China-Japan-Friendship Hospital, Beijing, China

1173. Whole Body Multi-Parametric MRI; a Comparison of the Diagnostic Performance of Different Sequences
Arash Latifoltojar[1], Margaret Hall-Craggs[2], Alan Bainbridge[2], Charles House[2], Kannan Rajesparan[2], Stuart Taylor[1], Kwee Yong[1], Neil Rabin[2], Shonit Punwani[1]
[1]University College London, London, United Kingdom; [2]University College London Hospital, London, United Kingdom

Traditional Poster
Musculoskeletal - General

Exhibition Hall Monday 10:45-12:45

1174. Reproducibility of Morphological Measurements and Muscle DTI Parameters in the Masticatory System of Healthy Subjects.
Jose D Sergio Almeida[1], Flora Gröning[2], Jiabao He[1]
[1]Aberdeen Biomedical Imaging Centre, University of Aberdeen, Aberdeen, Scotland, United Kingdom; [2]Anatomy and Musculoskeletal Research Programme, University of Aberdeen, Aberdeen, Scotland, United Kingdom

1175. Bone Imaging Using an Inversion Recovery Prepared UTE Sequence
Michael Carl[1], Jiang Du[2], Graeme M. Bydder[2]
[1]GE Healthcare, San Diego, CA, United States; [2]UCSD, CA, United States

1176. RF and Coil Inhomogeneity Correction in 2D Leg Images: A New Method Comparing with LEMS
Faezeh Fallah[1, 2], Christian Wuerslin[1], Fritz Schick[1], Bin Yang[2]
[1]Section on Experimental Radiology, University Clinic of Tübingen, Tübingen, Baden-Wuerttemberg, Germany; [2]Institute of Signal Processing and System Theory, University of Stuttgart, Stuttgart, Baden-Wuerttemberg, Germany

1177. Accurate Quantitative Assessment of Synovitis in Rheumatoid Arthritis Using Pixel by Pixel, Time-Intensity Curve Shape Analysis
Taro Sakashita[1], Tamotsu Kamishima[2], Hiroyuki Sugimori[3], Meiki Tou[4], Atsushi Noguchi[5], Michihito Kawano[6], Tatsuya Atsumi[5]
[1]Graduate School of Health Sciences, Hokkaido University, Sapporo, Hokkaido, Japan; [2]Faculty of Health Sciences, Hokkaido University, Hokkaido, Japan; [3]Department of Radiology, Hokkaido University Hospital, Hokkaido, Japan; [4]Graduate School of Health Sciences, Hokkaido University, Hokkaido, Japan; [5]Internal Medicine 2, Hokkaido University Hospital, Hokkaido, Japan; [6]Obihiro-Kosei General Hospital, Hokkaido, Japan

1178. Quantitative Evaluation of Synovial Membrane and Effusion in Knee Osteoarthritis:
Junghyo Kim[1], Takashi Nishii[2], Hidetoshi Hamada[1], Masaki Takao[1], Takashi Sakai[1], Tetsuya Tomita[3], Kazuma Futai[3], Hisashi Tanaka[4], Hideki Yoshikawa[1], Nobuhiko Sugano[1]
[1]Department of Orthopaedic Surgery, Osaka University Graduate School of Medicine, Suita, Osaka, Japan; [2]Department of Orthopaedic Medical Engineering, Osaka University Graduate School of Medicine, Osaka, Japan; [3]Departments of Orthopedic Biomaterial Science, Osaka University Graduate School of Medicine, Suita, Osaka, Japan; [4]Department of Radiology, Osaka University Graduate School of Medicine, Suita, Osaka, Japan

1179. Fat Suppression with Double Off-Resonance RF Pulses for Musculoskeletal Imaging at 3.0T
Yeji Han[1], Yeon Chul Ryu[2], Jun-Young Chung[1]
[1]Department of Biomedical Engineering, Gachon University, Incheon, Korea; [2]Neuroscience Research Institute, Gachon University, Incheon, Korea

1180. Assessment of Acetabular Cartilage and Labrum for Painful Hips Using Radial MRI with Biochemical and Morphological Sequences: Arthroscopic Verification
HIDETOSHI HAMADA[1], Takashi Nishii[1], Kim Junghyo[1], Hisashi Tanaka[2], Nobuhiko Sugano[1]
[1]Departments of Orthopedic Surgery, Osaka University Graduate School of Medicine, Suita, Osaka, Japan; [2]Department of Diagnostic and Interventional Radiology, Osaka University Graduate School of Medicine, Suita, Osaka, Japan

1181. **Cartilage Evaluation by GagCEST at 3 Tesla After Arthroscopic Partial Meniscectomy**
Olgica Zaric[1], Pavol Szomolanyi[1], Vladimir Mlynarik[1], Vladimir Juras[1], Siegfried Trattnig[1]
[1]High Field MR Center, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria

1182. **Knee Cartilage Evaluation Using Gag-CEST Imaging at 3T: Correlation to the Arthroscopic Grading**
Takako Aoki[1], Hiroshi Kawaguchi[2], Takahiro Watanabe, Yomei Tachibana[3], Hiroshi Imai[4], Benjamin Schmitt[5], Mamoru Niitsu[3]
[1]Radiology, Saitama medical university hospital, Moroyama-machi, Iruma-gun, Japan; [2]National Institute of Radiological Sciences, Japan; [3]Saitama medical university, Japan; [4]Siemens Japan K.K., Japan; [5]Healthcare Sector, Siemens Ltd., Australia

1183. **Detection of Patellofemoral Overload by $T_{1\rho}$ MRI**
Kevin D'Aquilla[1], Miltiadis Zgonis[2], J. Bruce Kneeland[3], Hari Hariharan[1], Ravinder Reddy[1]
[1]Center for Magnetic Resonance and Optical Imaging, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Department of Orthopedic Surgery, Hospital of the University of Pennsylvania, Philadelphia, PA, United States; [3]Department of Radiology, Hospital of the University of Pennsylvania, Philadelphia, PA, United States

1184. **Assessment of Inter-Operator Agreement in Manual Image-Segmentation of Femoral Cartilage**
Hon J. Yu[1, 2], Taiki Nozaki[1], Yasuhito Kaneko[1], Kayleigh Kaneshiro[1], Ran Schwarzkopf[3], Hiroshi Yoshioka[1]
[1]Radiological Sciences, University of California, Irvine, CA, United States; [2]Tu & Yuen Center for Functional Onco-Imaging, University of California, Irvine, CA, United States; [3]Orthopaedic Surgery, University of California, Irvine, CA, United States

1185. **Ultra Structure of Articular Cartilage**
Soorena Azam Zanganeh[1], Chantal Pauli[2], Christine B. Chung[3], Eric Chang[3], Graeme M. Bydder[3], Darryl DLima[2], Jiang Du[3]
[1]Radiology, University of California, San Diego, San Diego, CA, United States; [2]Department of Molecular and Experimental Medicine, the Scripps Research Institute, San Diego, CA, United States; [3]Radiology, University of California, San Diego, San Diego, CA, United Kingdom

1186. **Multi-Echo SWI of Knee Cartilage**
Joanna Yuen[1], Jachin Hung[2], Vanessa Wiggermann[1, 2], Robert McCormack[3], Agnes d'Entremont[4, 5], Alexander Rauscher[1, 2]
[1]UBC MRI Research Centre, Vancouver, British Columbia, Canada; [2]Department of Physics and Astronomy, The University of British Columbia, Vancouver, British Columbia, Canada; [3]Department of Orthopaedics, The University of British Columbia, Vancouver, British Columbia, Canada; [4]Department of Mechanical Engineering, The University of British Columbia, Vancouver, British Columbia, Canada; [5]Centre for Hip Health and Mobility, Vancouver, British Columbia, Canada

1187. **Sodium Inversion Recovery MRI on the Knee Joint with an Optimal Inversion Pulse**
Jae-Seung Lee[1], Ding Xia[1], Ravinder R. Regatte[1]
[1]Department of Radiology, New York University, New York, NY, United States

1188. **Patients at Risk for Tendinopathy and Chondropathy in Patients with Diabetes Mellitus Type I – Identification by Means of Quantitative Sodium MR Imaging at Ultra High Field (7 Tesla) – a Feasibility Study**
Wolfgang Marik[1], Stefan Nemec, Stefan Zbyn[2], Martin Zalaudek[2], Bernhard Ludvik[3], Manuela Karner[2], Siegfried Trattnig[2]
[1] Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria; [2]MR Centre of Excellence, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria; [3]Clinic for Internal Medicine III, Department of Endocrinology and Metabolism, Medical University of Vienna, Vienna, Austria

1189. **Topographic Modifications of T1-Gd in Early Osteoarthritic Tibial Cartilage by MRI at Microscopic Resolution**
Ji hyun Lee[1], Farid Badar[2], Yang Xia[3, 4]

[1]Oakland Univ, Rochester, MI, United States; [2]Oakland Univ, MI, United States; [3]Physics, Oakland University, Rochester, MI, United States; [4]Center for Biomedical Research, Oakland University, MI, United States

1190. Multiparametric MR Relaxometry for Articular and Epiphyseal Cartilage During Skeletal Maturation in a Goat Model
Luning Wang[1], Mikko J. Nissi[2], Ferenc Toth, Cathy Carlson, Jutta Ellermann[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Twin Cities, Minneapolis, MN, United States; [2]Medical Research Center Oulu, Oulu University Hospital and University of Oulu, Finland

1191. Validation of Adiabatic $T_1\rho$ and $T_2\rho$ Mapping of Articular Cartilage at 3T
Victor Casula[1, 2], Joonas Autio[3], Mikko J. Nissi[3, 4], Michaeli Shalom[4], Silvia Mangia[4], Edward Auerbach[4], Jutta Ellermann[4], Eveliina Lammentausta[3], Miika T. Nieminen[1, 3]
[1]Department of Radiology, University of Oulu, Oulu, Finland; [2]Medical Research Center Oulu, Oulu University Hospital and University of Oulu, Oulu, Finland; [3]Department of Diagnostic Radiology, Oulu University Hospital, Oulu, Finland; [4]Center for Magnetic Resonance Research, Department of Radiology, University of Minnesota, Minneapolis, United States

1192. Importance of Biexponential T2* and Partial Volume Effect Corrections on Quantification of Sodium Concentrations and Fixed Charge Density of Articular Cartilage with ^{23}Na-MRI at 7T
Lasse P. Räsänen[1], Stefan Zbyn[2], Miika T. Nieminen[3, 4], Eveliina Lammentausta[3], Xeli Deligianni[5, 6], Oliver Bieri[5], Siegfried Trattnig[2], Rami Korhonen[1]
[1]Department of Applied Physics, University of Eastern Finland, Kuopio, Finland; [2]MR Centre-High Field MR, Department of Biomedical Imaging and Image-Guided Therapy, Medical University of Vienna, Vienna, Austria; [3]Department of Diagnostic Radiology, Oulu University Hospital, Oulu, Finland; [4]Department of Radiology, University of Oulu, Oulu, Finland; [5]Division of Radiological Physics – Department of Radiology, University of Basel Hospital, Basel, Switzerland; [6]Merian Iselin Klinik, Basel, Switzerland

1193. Reduction of Magic Angle Effect for Quantitative MRI of Articular Cartilage *In Vivo*
Mikko Johannes Nissi[1, 2], Victor Casula[1, 2], Eveliina Lammentausta, [23], Shalom Michaeli[4], Silvia Mangia[4], Edward Auerbach[4], Jutta Ellermann[4], Miika T. Nieminen[1, 3]
[1]Department of Radiology, Institute of Diagnostics, University of Oulu, Oulu, Finland; [2]Medical Research Center Oulu, Oulu University Hospital and University of Oulu, Oulu, Finland; [3]Department of Radiology, Oulu University Hospital, Oulu, Finland; [4]CMRR, Department of Radiology, University of Minnesota, Minneapolis, MN, United States

1194. A Multi-Purpose Flexible Antenna for Musculoskeletal MR Imaging at 3T
Fan Jia[1], Rui Zhang[2], Hongyang Yuan[2], Jue Zhang[1, 2], Diange Zhou[3, 4], Xiaoying Wang, [15], Jing Fang[1, 2]
[1]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China; [2]College of Engineering, Peking University, Beijing, China; [3]Arthritis Clinic and Research Center, Peking University People' s Hospital, Beijing, China; [4] Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China; [5]Dept. of Radiology, Peking University First Hospital, Beijing, China

1195. Measuring 3D Knee Dynamics Using Center Out Radial Ultra-Short Echo Time Trajectories with a Low Cost Experimental Setup
Martin Krämer[1], Karl-Heinz Herrmann[1], Heide Boeth[2], Christoph von Tycowicz[3], Christian König[2], Stefan Zachow[3], Rainald M. Ehrig[3], Hans-Christian Hege[3], Georg N. Duda[2], Jürgen R. Reichenbach[1]
[1]Medical Physics Group, Institute of Diagnostic and Interventional Radiology, Jena University Hospital - Friedrich Schiller University Jena, Jena, Germany; [2]Julius Wolff Institute and Center for Musculoskeletal Surgery, Charité – Universitätsmedizin Berlin, Berlin, Germany; [3]Zuse Institute Berlin, Berlin, Germany

1196. Simultaneous Time-Resolved Measurement of Blood Flow, Perfusion and Oxygen Consumption in Lower Leg During Recovery from Exercise.
Adil Bashir[1], Robert Gropler[1], Jie Zheng[1]
[1]Mallinckrodt Institute of Radiology, Washington University, St. Louis, MO, United States

1197. Imaging of the Knee Using 3D Fast Spin Echo with Compressed Sensing
Scott A. Reid[1], Kevin F. King[2], David J. Lomas[3], Florine van der Wolf-de Lijster[3], Lloyd Estkowski[2], Martin J. Graves[3]
[1]GE Healthcare, Chalfont St Giles, United Kingdom; [2]GE Healthcare, Waukesha, WI, United States; [3]Radiology, Addenbrooke's Hospital & University of Cambridge, Cambridge, Cambridgeshire, United Kingdom

1198. 3D TSE Imaging Using Sparse-Sense Acceleration: Comparison with Conventional 2D TSE Imaging for Detection of Internal Derangement of the Knee
Michael Paul Recht[1], Ricardo Otazo[2], Leon Rybak[2], Soterios Gyftopoulos[2], Catherine Petchprapa[2], Christian Geppert[3], Mary Bruno[2], Esther Raithel[3]
[1]Radiology, NYU School of Medicine, New York, United States; [2]Radiology, NYU School of Medicine, NY, United States; [3]Siemens Healthcare, Germany

1199. Effect of 16-Channel Flex Array Coil on PET Standardized Uptake Values for PET/MR Imaging of the Knee
Feliks Kogan[1], Jarrett Rosenberg[1], Sloane Brazina[1], Audrey Fan[1], Dawn Holley[1], Garry Gold[1]
[1]Department of Radiology, Stanford University, Stanford, CA, United States

1200. A Primary Study of *In Vivo* Morphological Semi-Quantitative Assessment of Knee Osteoarthritis Using Dual-Echo 3D UTE Imaging: Compared with Traditional Sequences
Shihong Li[1], Guangwu Lin[1], Chuntao Ye[1], Haizhen Qian[1], Panli Zuo[2], Caixia Fu[3], Yanqing Hua[1], David M. Grodzki[4], Ming Ji[1]
[1]Radiology, Huadong Hospital, Fudan University, Shanghai, China; [2]Siemens Healthcare, MR Collaborations NE Asia, Beijing, China; [3]Application R&D Department, Siemens Shenzhen Magnetic Resonance Ltd., Shanghai, China; [4]Magnetic Resonance, Siemens Healthcare, Erlangen, Germany

1201. High Resolution T1ρ-Mapping of Articular Cartilage in the Wrist at 3T
Joep van Oorschot[1], Mark Gosselink[1], Fredy Visser[2], Alexandra de Rotte[1], Peter Luijten[1], Dennis Klomp[1]
[1]University Medical Center Utrecht, Utrecht, Netherlands; [2]Philips Healthcare, Best, Noord-Brabant, Netherlands

1202. Regional Variation in Canine Knee Cartilage T2 Relaxation Times: Assessment of Normative Values
Sarah L. Pownder[1], Kei Hayashi[2], Parina H. Shah[1], Hollis G. Potter[1], Matthew F. Koff[1]
[1]Department of Radiology and Imaging - MRI, Hospital for Special Surgery, New York, United States; [2]College of Veterinary Medicine, Cornell University, Ithaca, NY, United States

1203. T1rho Mapping of the Entire Femoral Cartilage Using Novel Depth and Angle Dependent Analysis
Taiki Nozaki[1], Yasuhito Kaneko[1], Hon J. Yu[1], Kayleigh Kaneshiro[1], Ran Schwarzkopf[2], Takeshi Hara[3], Hiroshi Yoshioka[1]
[1]Radiological Sciences, University of California, Irvine, Orange, CA, United States; [2]Orthopaedic Surgery, University of California, Irvine, Orange, CA, United States; [3]Intelligent Image Information, Gifu University Graduate School of Medicine, Gifu, Japan

1204. Positional Reproducibility of a Displacement Controlled MRI-Compatible Loading Device to Assess *In Vivo* Articular Cartilage Deformation
Hongsheng Wang[1], Parina H. Shah[2], Suzanne Maher[1], Scott Rodeo[3], Hollis G. Potter[2], Matthew F. Koff[2]
[1]Department of Biomechanics, Hospital for Special Surgery, New York, United States; [2]Department of Radiology and Imaging - MRI, Hospital for Special Surgery, New York, United States; [3]Sports Medicine and Shoulder Service, Hospital for Special Surgery, New York, United States

1205. Robust T2 Mapping of Knee Cartilage Under in Situ Mechanical Loading Using Prospective Motion Correction
Thomas Lange[1], Michael Herbst[1, 2], Benjamin R. Knowles[1], Kaywan Izadpanah[3], Maxim Zaitsev[1]
[1]Department of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]John A. Burns School of Medicine, University of Hawaii, Honolulu, HI, United States; [3]Department of Orthopedic and Trauma Surgery, University Medical Center Freiburg, Freiburg, Germany

1206. **Normal T2 Map Profile of the Entire Femoral Cartilage Using a Novel Angle/layer Dependent Approach**
Yasuhito Kaneko[1], Taiki Nozaki[1], Hon Yu[1], Kayleigh Kaneshiro[1], Ran Schwarzkopf[2], Takeshi Hara[3], Hiroshi Yoshioka[1]
[1]Radiological Sciences, University of California, Irvine, Orange, CA, United States; [2]Orthopaedic Surgery, University of California, Irvine, Orange, CA, United States; [3]Division of Regeneration and Advanced Medical Sciences, Gifu University Graduate School of Medicine, Gifu, Japan

1207. **T1ρ Measurements in the Intervertebral Discs: Analysis of Reproducibility and Diurnal Changes**
Volkan Emre Arpinar[1], Weitian Chen[2], L Tugan Muftuler[1, 3]
[1]Department of Neurosurgery, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Global Applied Science Laboratory, GE Healthcare, CA, United States; [3]Center for Imaging Research, Medical College of Wisconsin, Milwaukee, WI, United States

1208. **High Spatial Resolution MRI of Temporo-Mandibular Joint at 7.0 Tesla Using a Modestly Shaped 8 Channel Transceiver RF Coil Array**
Jan Rieger[1], Claudia Kronnerwetter[2], Andreas Graessl[3], Helmar Waiczies[1], Roman Leicht[1], Beate Endemann[3], Siegfried Trattnig[2], Thoralf Niendorf[3, 4]
[1]MRI.TOOLS GmbH, Berlin, Germany; [2]High Field MR Centre, Department of Biomedical Imaging und Image-guided Therapy, Medical University of Vienna, Vienna, Austria; [3]Berlin Ultrahigh Field Facility (B.U.F.F.), Max-Delbrueck-Center for Molecular Medicine, Berlin, Germany; [4]Experimental and Clinical Research Center, a joint cooperation between the Charité Medical Faculty a, Berlin, Germany

1209. **Regional Variation in Canine Knee Meniscus T2* Relaxation Times: Assessment of Normative Values and Histologic Correlation**
Sarah L. Pownder[1], Parina H. Shah[1], Kei Hayashi[2], Hollis G. Potter[1], Matthew F. Koff[1]
[1]Department of Radiology and Imaging - MRI, Hospital for Special Surgery, New York, United States; [2]College of Veterinary Medicine, Cornell University, Ithaca, NY, United States

1210. ***In Vitro* Demonstration of the Vasculature of Human and Bovine Meniscus of the Knee with MRI at 11.7T**
Ju Chen[1], Qun He[1], Jihye Baek[1], Daryl D'Lima[1], Jiang Du[1], Nikolaus M. Szeverenyi[1], Graeme Bydder[1]
[1]University of California, San Diego, CA, United States

1211. **Real Time Fat Suppressed MRI of the Knee Joint During Flexion/extension Allows the Study of PCL Motion**
Valentina Mazzoli[1, 2], Andre Sprengers[3], Aart J. Nederveen[2], Gustav J. Strijkers[1, 4], Klaas Nicolay[1], Nico Verdonschot[3, 5]
[1]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [2]Department of Radiology, Academic Medical Center, Amsterdam, Netherlands; [3]Orthopaedic Research Lab, Radboud University Medical Center, Nijmegen, Netherlands; [4]Biomedical Engineering and Physics, Academic Medical Center, Amsterdam, Netherlands; [5]Laboratory of Biomechanical Engineering, University of Twente, Enschede, Netherlands

1212. **Preliminary Results of Early Detection of Baseball Elbow Using Low Field Magnetic Resonance Imaging Specialized for Small Joints**
Yoshikazu Okamoto[1], Kiyoshi Maehara[1], Tetsuya Kanahori[1]
[1]University of Tsukuba, Tsukuba, Ibaraki, Japan

1213. **T2 Mapping of the Supraspinatus Tendon: A Feasibility Study**
Soterios Gyftopoulos[1], Konstantin Krepkin[2], Mary Bruno[2], Jose G. Raya[3]
[1]Radiology , NYU Langone Medical Center, New York, NY, United States; [2]Radiology, NYU Langone Medical Center, New York, NY, United States; [3]Bernard and Irene Schwartz Center for Biomedical Imaging, New York University School Of Medicine, New York, Ny, United States

1214. **Non-Gaussian Diffusion Weighted Imaging for Assessing Degenerative Changes in Intervertebral Disc Composition**
Masaki Katsura[1, 2], Yuichi Suzuki[2], Akihiro Kasahara[2], Harushi Mori[1], Akira Kunimatsu[1], Yoshitaka Masutani[3], Masaaki Hori[4], Shigeki Aoki[4], Kuni Ohtomo[1]
[1]Radiology, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan; [2]Radiology, The University of Tokyo Hospital, Tokyo, Japan; [3]Intelligent Systems, Hiroshima City University, Hiroshima, Japan; [4]Radiology, School of Medicine, Juntendo University, Tokyo, Japan

1215. **Characterization of an Animal Model of Spinal Instability Using MR Elastography and Mechanical Testing**
Ephraim I. Ben-Abraham[1], Jun Chen[2], Richard L. Ehman[2]
[1]Mayo Graduate School, Mayo Clinic, Rochester, MN, United States; [2]Radiology, Mayo Clinic, Rochester, MN, United States

1216. **Whole Spine Vertebral Bone Marrow Proton Density Fat Fraction Mapping: Anatomical Variation and Gender-Specific Reference Database**
Thomas Baum[1], Samuel P. Yap[1], Michael Dieckmeyer[1], Stefan Ruschke[1], Holger Eggers[2], Hendrik Kooijman[3], Ernst J. Rummeny[1], Jan S. Bauer[4], Dimitrios C. Karampinos[1]
[1]Department of Radiology, Klinikum rechts der Isar, Technische Universitaet Muenchen, Munich, Germany; [2]Philips Research Laboratory, Hamburg, Germany; [3]Philips Healthcare, Hamburg, Germany; [4]Section of Neuroradiology, Klinikum rechts der Isar, Technische Universitaet Muenchen, Munich, Germany

1217. **A Comparison of Three Approaches for Defining Nucleus Pulposus and Annulus Fibrosus on Sagittal MR Images.**
Yi-Xiang Wang[1], Greta SP Mok[2], Duo Zhang[3], Shu-Zhong Chen[1], Jing Yuan[4]
[1]Dept Imaging and Interventional Radiology, The Chinese University of Hong Kong, Shatin, NT, Hong Kong; [2]Department of Electrical and Computer Engineering,, University of Macau, Macau SAR, Macau; [3]Department of Electrical and Computer Engineering, University of Macau, Macau SAR, Macau; [4]Medical Physics and Research Department, Hong Kong Sanatorium & Hospital, Happy Valley, Hong Kong

1218. **Assessment of the Stiffness of Intervertebral Disk in Rat Model with Magnetic Resonance Elastography**
Yifei Liu[1], Julia Zelenakova[2], Kejia Cai[2, 3], Robert Kleps[4], Thomas J. Royston[1, 2], Richard L. Magin[2], Andrew Larson[5], Weiguo Li[4, 5]
[1]Department of Mechanical & Industrial Engineering, University of Illinois at Chicago, Chicago, IL, United States; [2]Department of Bioengineering, University of Illinois at Chicago, Chicago, IL, United States; [3]Department of Radiology, University of Illinois at Chicago, Chicago, IL, United States; [4]Research Resource Center, University of Illinois at Chicago, Chicago, IL, United States; [5]Department of Radiology, Northwestern University, Chicago, IL, United States

1219. **3D Ultra-Short TE Imaging of the Spine for Vertebral Segmentation**
Wingchi Edmund Kwok[1, 2], Terry K. Koo[3]
[1]Department of Imaging Sciences, University of Rochester, Rochester, NY, United States; [2]Rochester Center for Brain Imaging, University of Rochester, Rochester, NY, United States; [3]Department of Research, New York Chiropractic College, Seneca Falls, NY, United States

1220. **Vertebral Bone Marrow Fat Content Measured by MRI Associated with Lower Bone Mineral Density: A Human Cadaver Study**
Miyuki Takasu[1], Yuji Akiyama[1], Ryuji Akita[1], Kazushi Yokomachi[1], Yoko Kaichi[1], Shuji Date[1], Masatoshi Honda[2], Kazuo Awai[1]
[1]Diagnostic Radiology, Hiroshima University Hospital, Hiroshima, Japan; [2]Philips Electronics, Tokyo, Japan

1221. **Frequency Dependant Shear Properties of Bovine *Ex Vivo* Intervertebral Disc.**
Delphine Perie[1], Pierre-Francois Beauchemin[1], Phil Bayly[2], Joel R. Garbow[2], John Schmidt[2], Ruth Okamoto[2], Farida Cheriet[1]
[1]Mechanical Engineering, Polytechnique Montreal, Montreal, Quebec, Canada; [2]Mechanical Engineering and Materials Science, Washington University in St. Louis, Saint Louis, MO, United States

1222. **Value of 3D FSE STIR Images with Blood-Suppression Pulse Technique for the Brachial Plexus at 3T**
Tsutomu Inaoka[1], Masayuki Odashima[1], Mitsuyuki Tozawa[1], Hiroyuki Nakazawa[1], Masahiro Sogawa[1], Tomoya Nakatsuka[1], Rumiko Kasai[1], Hitoshi Terada[1]
[1]Radiology, Toho University Sakura Medical Center, Sakura, Chiba, Japan

1223. **MR Diffusion Is Sensitive to Mechanical Loading in Human Intervertebral Disks**
Ron N. Alkalay[1], Carl-Fredrik Westin[2], Dominik Meier[2], David B. Hackney[3]
[1]Orthopedics, Beth Israel Deaconess Medical Center, Boston, MA, United States; [2]Radiology, Brigham and Women's Hospital, Boston, MA, United States; [3]Radiology, Beth Israel Deaconess Medical Center, Boston, MA, United States

1224. **Water-Fat Separated MRI for Detecting Increased Fat Infiltration in the Multifidus Muscle in Patients with Severe Neck Problems Due to Chronic Whiplash Associated Disorder**
Anette Karlsson[1, 2], Anneli Peolsson[3], Janne West, [23], Ulrika Åslund[3], Thobias Romu[1, 2], Örjan Smedby, [23], Peter Zsigmond[4], Olof Dahlqvist Leinhard, [23]
[1]Department of Biomedical Engineering, Linköping University, Linköping, Sweden; [2]Center for Medcial Image Science and Visualization (CMIV), Linköping University, Linköping, Sweden; [3]Department of Medical and Health Sciences, Linköping University, Linköping, Sweden; [4]Department of Neurosurgery and Department of Clinical and Experimental Medicine, Linköping University, Linköping, Sweden

1225. **Dynamic Measurement of Muscle R2, R2' and R2* During Ischemia and Reactive Hyperemia**
Chengyan Wang[1], Rui Zhang[2], Xiaodong Zhang[3], He Wang[4], Kai Zhao[3], Jue Zhang[1, 2], Xiaoying Wang, [13], Jing Fang[1, 2]
[1]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China; [2]College of Engineering, Peking University, Beijing, China; [3]Department of Radiology, Peking University First Hospital, Beijing, China; [4]Philips Research China, Shanghai, China

1226. **Muscular Fat Fraction Determination by Quantitative T2-MRI, Reproducibility in Facioscapulohumeral Muscular Dystrophy and Healthy Volunteers**
Linda Heskamp[1], Barbara Helena Janssen[1], Arend Heerschap[1]
[1]Radiology, Radboud university medical center, Nijmegen, Netherlands

1227. **Modeling Duchenne Muscular Dystrophy Disease Progression: A Longitudinal Multicenter MRI Study**
William D. Rooney[1], Yosef Berlow[1], Sean C. Forbes[2], Rebecca J. Willcocks[2], James Pollaro[1], William T. Triplett[3], Dah-Jyuu Wang[4], Barry J. Byrne[5], Richard Finkel[6], Barry S. Russman[7], Erika L. Finanger[7], Michael J. Daniels[8], H. Lee Sweeney[9], Glenn A. Walter[3], Krista H. Vandenborne[2]
[1]Advanced Imaging Research Center, Oregon Health & Science University, Portland, OR, United States; [2]Department of Physical Therapy, University of Florida, Gainesville, FL, United States; [3]Physiology and Functional Genomics, University of Florida, Gainesville, FL, United States; [4]Department of Radiology, Children's Hospital of Philadelphia, Philadelphia, PA, United States; [5]Department of Pediatrics, University of Florida, Gainesville, FL, United States; [6]Department of Neurology, Nemours Children's Hospital , Orlando, FL, United States; [7]Shriners Hospital, Portland, OR, United States; [8]Division of Statistics & Scientific Computation, University of Texas, Austin, TX, United States; [9]Department of Pharamcology and Therapeutics, University of Florida, Gainesville, FL, United States

1228. **MRI Monitoring for Muscular Dystrophy Mice Treated with Gene Therapy**
Joshua Park[1], Jacqueline Wicki[2], Sue Knoblaugh[3], Jeffrey Chamberlain[2, 4], Donghoon Lee[1]
[1]Radiology, University of Washington, Seattle, WA, United States; [2]Neurology, University of Washington, Seattle, WA, United States; [3]Fred Hutchinson Cancer Research Center, Seattle, WA, United States; [4]Biochemistry, University of Washington, Seattle, WA, United States

1229. **Inter-Echo Time Dependence of CPMG Relaxation Rate Around Capillaries in Skeletal Muscle Tissue**
Felix T. Kurz[1], Thomas Kampf[2], Lukas R. Buschle[3], Sabine Heiland[4], Martin Bendszus[4], Christian H. Ziener, [13]
[1]Heidelberg University, Heidelberg, BW, Germany; [2]University of Wuerzburg, Bavaria, Germany; [3]German Cancer Research Center, Heidelberg, BW, Germany; [4]Heidelberg University, BW, Germany

1230. **Quantification of the Inflammatory Process in Muscles of Patients with Facioscapulohumeral Muscular Dystrophy.**
Linda Heskamp[1], Barbara H. Janssen[1], Arend Heerschap[1]
[1]Radiology, Radboud university medical center, Nijmegen, Netherlands

1231. **MRI Characterization of Individual Muscles in Patients with Sporadic Inclusion Body Myositis (SIBM) Using a Semi-Automatic Segmentation Approach**
Didier Laurent[1], Attila Nagy[2], Steve Pieper[2], Harlem Gongxeka[1], Celeste Pretorius[1], Stefan Baumann[1]
[1]Biomarker Department, Novartis, Basel, Switzerland; [2]Isomics, Inc, Cambridge, Ma, United States

1232. **Improvement of Thigh Muscle MRI Image Processing Efficiency Using a Batch-Scripted N4ITK Intensity Normalization Algorithm Implemented in 3D Slicer**
Prashant Bansal[1], David Bennett[1], Xiaodong Tao[1], Sally Warner[1]
[1]Medical Imaging, PAREXEL Informatics, Billerica, MA, United States

1233. **Quantifying Muscle Inflammation with Diffusion Basis Spectrum Imaging**
Carlos J. Perez-Torres[1], Neva B. Watson[2], Yong Wang[1, 3], Paul T. Massa[2, 4], Sheng-Kwei Song[1, 3]
[1]Radiology, Washington University, St. Louis, MO, United States; [2]Microbiology & Immunology, SUNY Upstate Medical University, Syracuse, NY, United States; [3]Hope Center for Neurological Disorders, Washington University, St. Louis, MO, United States; [4]Neurology, SUNY Upstate Medical University, Syracuse, NY, United States

1234. **Time-Dependent Diffusion as a Biomarker for Rotator Cuff Atrophy**
Gregory Lemberskiy[1, 2], Dmitry Novikov[1], Mary Bruno[1], Els Fieremans[1], Soterios Gyftopoulos[1]
[1]Bernard and Irene Schwartz Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States; [2]Sackler Institute of Graduate Biomedical Sciences, New York University School of Medicine, New York, NY, United States

1235. **Skeletal Muscle Perfusion Measured with Pseudo-Continuous Arterial Spin-Labeling MRI After Dorsiflexion Contractions**
Sean C. Forbes[1], Jingfeng Ma[1], Glenn A. Walter[1], Krista Vandenborne[1], Song Lai[1]
[1]University of Florida, Gainesville, FL, United States

1236. **Towards Clinical Ultrahigh Field Musculoskeletal MRI: Comparison of Shoulder Imaging at 1.5T, 3.0T and 7.0T**
Marko Hoehne[1, 2], Andreas Graessl[2], Jan Rieger[3], Antje Els[4], Beate Endemann[2], Thomas Herold[1], Thoralf Niendorf[2, 5]
[1]HELIOS Klinikum Berlin Buch, Berlin, Germany; [2]Berlin Ultrahigh Field Facility (B.U.F.F.), Max Delbrück Center for Molecular Medicine (MDC), Berlin, Germany; [3]MRI.TOOLS GmbH, Berlin, Germany; [4]Berlin Ultrahigh Field Facility (B.U.F.F.), Max Delbrück Center for Molecular Medicine (MDC) , Berlin, Germany; [5]Experimental and Clinical Research Center (ECRC), Charite Campus Berlin Buch, Humboldt-University, Berlin, Germany

1237. **Canine MRI for X-Linked Myotubular Myopathy**
Joshua Park[1], Martin Childers[2], Donghoon Lee[1]
[1]Radiology, University of Washington, Seattle, WA, United States; [2]Rehabilitation Medicine, University of Washington, Seattle, WA, United States

1238. **Quantitative Measurement of Blood Flow in Contracting Rat Muscle Using MR Angiography**
Anne Tonson[1, 2], Jonathan Kasper, [2], Ronald A. Meyer[3, 4], Robert W. Wiseman, [25]
[1] Physiology Department , Michigan State University, East Lansing, MI, United States; [2]Biomedical Imaging Research Center, Michigan State University, East Lansing, MI, United States; [3]Physiology and Radiology Departments, Michigan State University, East Lansing, MI, United States; [4]Biomedical Imaging Research Center, East Lansing, MI, United States; [5]Physiology and Radiology Departments , Michigan State University, East Lansing, MI, United States

1239. Depiction of Muscle Activation Induced by Electromyostimulation in the Calf Muscle by Using T2-Weighted MRI at 3.0 T
Reinhard Rzanny[1], Patrick Hiepe[1], Kevin Tschiesche[1], Alexander Gussew[1], Norman Stutzig[2]
[1]AG Medical Physics, University Hospital Jena, Jena, Thüringen, Germany; [2]Institute of Sport- and Movement science, University of Stuttgart, Stuttgart, Baden-Würtemberg, Germany

1240. Is Intramyocellular Lipid a Diffusion-Restricting Factor in Skeletal Muscle Cells?
Yoshikazu Okamoto[1], Shintaro Mori[1], Tomonori Isobe[1], Yuji Hirano[1], Hiroaki Suzuki[1], Manabu Minami[1]
[1]University of Tsukuba, Tsukuba, Ibaraki, Japan

1241. MR Characterization of Murine Model of Dystrophy on a DBA Background
Ravneet Vohra[1], Sean Forbes[2], Krista Vandenborne[3], Elizabeth Mcnally[4], Glenn Walter[5]
[1]Physiology and Functional Genomics, University of Florida, Gainesville, FL, United States; [2]Physical Therapy, University of Florida, Gainesville, FL, United States; [3]Physical Therapy, University of Florida, FL, United States; [4]Department of Medicine, University of Chicago, Chicago, IL, United States; [5]Physiology and Functional Genomics, Unversity of Florida, Gainesville, FL, United States

1242. Skeletal Muscle Motion Maps from Post-Contraction Gradient Echo Spin Saturation Effect
Andrew D. Davis[1], Michael D. Noseworthy[2, 3]
[1]Medical Physics and Applied Radiation Sciences, McMaster University, Hamilton, Ontario, Canada; [2]Electrical and Computer Engineering, McMaster University, Ontario, Canada; [3]School of Biomedical engineering, McMaster University, ON, Canada

1243. Obesity Decrease the Eigenvalues of Muscles
Yasuharu Watanabe[1], Keisaku Kimura[2], Masahiro Umeda[1], Tomokazu Murase[3], Toshihiro Higuchi[3], Chuzo Tanaka[3], Shoji Naruse[4]
[1]Medical Infomatics, Meiji University of Integrative Medicine, Kyoto, Japan; [2]Health Promoting and Preventive Medicine, Meiji University of Integrative Medicine, Kyoto, Japan; [3]Neurosurgery, Meiji University of Integrative Medicine, Kyoto, Japan; [4]Health Care and Checkup, Daini Okamoto General Hospital, Kyoto, Japan

1244. Myogenic Differentiation of Magnetically Labeled Mesenchymal Stem Cells
Natalie M. Pizzimenti[1], Christiane Mallett[2], Robert W. Wiseman[1, 2], Erik M. Shapiro[2]
[1]Physiology Department, Michigan State University, East Lansing, MI, United States; [2]Radiology Department, Michigan State University, East Lansing, MI, United States

ISMRM MERIT AWARD magna cum laude

1245. Multimodal Determination of Load Changes in the Muscle - A Combination of ^{1}H-MEGA-PRESS and Blood Sampling
Kevin Tschiesche[1], Alexander Gussew[1], Maria Glöckner[2], Steffen Derlien[2], Jürgen R. Reichenbach[1]
[1]Medical Physics Group, Institute of Diagnostic and Interventional Radiology, Jena University Hospital - Friedrich Schiller University Jena, Jena, Germany; [2]Institute for Physiotherapy, Jena University Hospital - Friedrich Schiller University Jena, Jena, Germany

1246. Acute Effects of Exercise on Quantum Filtered Sodium Spectroscopy in Human Calf Muscle
Alireza Akbari[1], Dinesh Kumbhare[2, 3], Michael Noseworthy[4, 5]
[1]School of Biomedical Engineering, McMaster University, Hamilton, Ontario, Canada; [2]Department of Medicine, University of Toronto, Ontario, Canada; [3]University Health Network, Toronto Rehabilitation Institute, Ontario, Canada; [4]Electrical and Computer Engineering, McMaster University, Ontario, Canada; [5]School of Biomedical Engineering, McMaster University, Ontario, Canada

1247. Simultaneous Multi-Slice Echo Planar Imaging with Blipped CAIPIRINHA: A Promising Technique for Accelerated Diffusion Tensor Imaging of Skeletal Muscle
Lukas Filli[1], Marco Piccirelli[1], David Kenkel[1], Roman Guggenberger[1], Gustav Andreisek[1], Val M. Runge[1], Andreas Boss[1]
[1]University Hospital Zurich, Zurich, ZH, Switzerland

1248. ***In Vivo* Imaging of the Motion of the Temporomandibular Joint Components Using a Pseudo-Dynamic 3D Imaging Technique**
Reni Biswas[1], Karen Chen[2, 3], Eric Y. Chang[2], Sheronda Statum[1], Won C. Bae[1], Christine B. Chung[2, 3]
[1]Department of Radiology, University of California, San Diego, San Diego, CA, United States; [2]VA San Diego Healthcare System, San Diego, CA, United States; [3]University of California, San Diego, CA, United States

1249. **Assessment of Resting Skeletal Muscle Alkaline Pi Pool and PDE Concentration by ^{31}P-MRS at 7T and Its Relation to Mitochondrial Capacity and Pi-To-ATP Exchange Rate**
Ladislav Valkovic[1, 2], Marjeta Tušek Jelenc[1], Barbara Ukropcová[3, 4], Wolfgang Bogner[1], Matej Vajda[5], Thomas Heckmann[6], Miroslav Baláž[3], Marek Chmelík[1], Ivan Frollo[2], Norbert Bachl[6], Jozef Ukropec[3], Siegfried Trattnig[1], Martin Krššák[1, 7]
[1]High Field MR Centre, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria; [2]Department of Imaging Methods, Institute of Measurement Science, Slovak Academy of Sciences, Bratislava, Slovakia; [3]Obesity section, Diabetes and Metabolic Disease Laboratory, Institute of Experimental Endocrinology, Slovak Academy of Sciences, Bratislava, Slovakia; [4]Institute of Pathophysiology, Faculty of Medicine, Commenius University, Bratislava, Slovakia; [5]Faculty of Physical Education and Sport, Commenius University, Bratislava, Slovakia; [6]Department of Sports and Physiological Performance, University of Vienna, Vienna, Austria; [7]Division of Endocrinology and Metabolism, Department of Internal Medicine III, Medical University of Vienna, Vienna, Austria

1250. **Muscle Mitochondrial Dysfunction Relates to Decreased Peripheral Insulin Sensitivity in Female Youth with Type 2 Diabetes**
Mark S. Brown[1], Abhinav Gupta[2], Melanie Cree-Green[2], Gregory Coe[2], Amy Baumgartner[2], Bradley R. Newcomer[3], Kristen J. Nadeau[2]
[1]Radiology, University of Colorado Anschutz, Aurora, CO, United States; [2]Pediatrics, University of Colorado Anschutz, Aurora, CO, United States; [3]Diagnostic and Clinical Sciences, University of Alabama, Birmingham, AL, United States

Traditional Poster
Animal Model - Other

Exhibition Hall Monday 16:30-18:30

1251. **Veterinary Diagnostic MRI at an Academic Medical Center: Tips, Tricks, and Pathological Confirmation**
Dara L. Kraitchman[1, 2], Larry Gainsburg[3], Jan Fritz[2], Patrick R. Gavin[4], Nathan Pate[5], Elizabeth Ihms[5], Joseph Mankowski[5], Rebecca Krimins[1, 2]
[1]Center for Image-Guided Animal Therapy, Johns Hopkins University, Baltimore, MD, United States; [2]Russell H Morgan Department of Radiology and Radiological Science, Johns Hopkins University, Baltimore, MD, United States; [3]Mid-Atlantic Veterinary Neurology and Neurosurgery, Catonsville, MD, United States; [4]M.R. Vets, Sagle, ID, United States; [5]Molecular and Comparative Pathobiology, Johns Hopkins University, Baltimore, MD, United States

1252. **Assessment of Experimental Cerebral Malaria Using Diffusion Tensor Imaging at Ultra-High Magnetic Field**
Teodora-Adriana Perles-Barbacaru[1, 2], Bruno Miguel de Brito Robalo[1, 3], Emilie Pecchi[1, 2], Georges Emile Raymond Grau[4], Monique Bernard[1, 2], Angèle Viola[1, 2]
[1]Centre de Résonance Magnétique Biologique et Médicale, CRMBM UMR CNRS 7339, Marseille, France; [2]Aix-Marseille Université, Marseille, France; [3]University of Lisbon, Institute of Biophysics and Biomedical Engineering, Lisbon, Portugal; [4]Department of Pathology, Sydney Medical School, The University of Sydney, Camperdown, Australia

1253. **Custom-Fit, 3D-Printed Marmoset Brain Holders for Comparison of Histology with MRI**
Joseph Guy[1, 2], Pascal Sati[1], Steven Jacobson[3], Afonso C. Silva[4], Daniel S. Reich[1]
[1]Translational Neuroradiology Unit, Neuroimmunology Branch, National Institute of Neurologic Disorders and Stroke, Bethesda, MD, United States; [2]Department of Biochemistry, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom; [3]Viral Immunology Section, Neuroimmunology Branch, National Institute of Neurologic Disorders and Stroke, Bethesda, MD, United States; [4]Cerebral Microcirculation Unit, Laboratory of Functional and Molecular Imaging, National Institute of Neurologic Disorders and Stroke, Bethesda, MD, United States

Traditional Poster
Novel Brain Methods

Exhibition Hall Monday 16:30-18:30

1254. Imaging the Human Brain with Dissolved Xenon MRI at 1.5T
Madhwesha Rao[1], Neil Stewart[1], Graham Norquay[1], Paul Griffiths[1], Jim Wild[1]
[1]University of Sheffield, Sheffield, South Yorkshire, United Kingdom

ISMRM MERIT AWARD magna cum laude
1255. 4D Phase Contrast EPI for Assessing 3D Volumetric Strain Rate in the Human Brain Over the Cardiac Cycle
Nils Noorman[1], Sebastian Hirsch[2], Jürgen Braun[3], Peter R. Luijten[1], Ingolf Sack[2], Jaco J.M. Zwanenburg[1]
[1]Department of Radiology, University Medical Center, Utrecht, Netherlands; [2]Department of Radiology, Charité - Universitätsmedizin Berlin, Berlin, Germany; [3]Institute of Medical Informatics, Charité - Universitätsmedizin Berlin, Berlin, Germany

1256. Kinetic Oscillatory Stimulation (KOS) in the Nasal Cavity Studied by Resting-State fMRI
Tie-Qiang Li[1], Rolf Hallin[2], Jan-Erik Juto[3]
[1]Department of Medical Physics, Karolinska University Hospital, Karolinska Huddinge, Stockholm, Sweden; [2]Department of Neurophysiology, Karolinska University Hospital, Karolinska Huddinge, stockholm, Sweden; [3]Department of CLINTEC, Karolinska Institute, Huddinge, stockholm, Sweden

1257. Influence of Respirations on Cerebrospinal Fluid (CSF) Movement Using BSSFP Time-Spatial Labeling Inversion Pulse (Time-SLIP)
Shinya Yamada[1], Yuichi Yamashita[2], Masao Yui[2], Cheng Ouyang[3], Masao Nakahashi[2], Mitsue Miyazaki[3]
[1]Toshiba Rinkan Hospital, Sagamihara, Kanagawa, Japan; [2]Toshiba Medical Systems Corp., Tochigi, Japan; [3]Toshiba Medical Research Institute, IL, United States

1258. A First Insight in Regional Brain Changes After Parabolic Flight: A Voxel-Based Morphometry Study.
Angelique Van Ombergen[1], Ben Jeurissen[2], Floris Vanhevel[3], Dirk Loeckx[4], Vincent Dousset[5], Paul M. Parizel[3], Floris L. Wuyts[1]
[1]Antwerp University Research centre for Equilibrium and Aerospace, University of Antwerp, Edegem, Antwerp, Belgium; [2]iMinds/Visionlab, Department of Physics, University of Antwerp, Antwerp, Belgium; [3]Department of Radiology, Antwerp University Hospital, Edegem, Antwerp, Belgium; [4]icoMetrix, Leuven, Belgium; [5]Neuroradiology Department, CHU Pellegrin, Bordeaux, France

ISMRM MERIT AWARD magna cum laude
1259. Evaluating Artifact Introduced by Intra-Subject Motion Correction in Functional MRI
Lisha Yuan[1], Jianhui Zhong[1], Hongjian He[1]
[1]Center for Brain Imaging Science and Technology, ZheJiang University, Hangzhou, Zhejiang, China

1260. Reliability and Reproducibility of Arterial Transit Time-Corrected Whole-Brain Pseudo-Continuous Arterial Spin Labeling
Kazunobu Tsuji[1], Tatsuro Tsuchida[1], Yasuhiro Fujiwara[1, 2], Masayuki Kanamoto[1], Tsuyoshi Matsuda[3], R. Marc Lebel[4], Hirohiko Kimura[1]
[1]Radiology, University of Fukui, Yoshida-gun, Fukui, Japan; [2]Medical Imaging, Kumamoto University, Kumamoto, Japan; [3]Global MR Applications and Workflow, GE Healthcare, Tokyo, Japan; [4]Global MR Applications and Workflow, GE Healthcare, AB, Canada

1261. Inspiration Drives Cerebrospinal Fluid Flow in Humans
Steffi Dreha-Kulaczewski[1], Arun Jospeh[2, 3], Klaus-Dietmar Merboldt[2], Hans Ludwig[4], Jutta Gaertner[5], Jens Frahm[2, 3]
[1]Department of Pediatrics and Adolescent Medicine, Division of Pediatric Neurology, University Medical Center , Goettingen, Germany; [2]Biomedizinische NMR Forschungs GmbH am Max-Planck-Institut fuer biophysikalische Chemie, Goettingen, Germany; [3]partner site Goettingen, German Center for Cardiovascular Research, Germany; [4]Department of Neurosurgery, Division of Pediatric Neurosurgery, University Medical Center Goettingen, Germany; [5]Department of Pediatrics and Adolescent Medicine, Division of Pediatric Neurology, University Medical Center, Goettingen, Germany

1262. **Sparsity-Based Superresolution MR Imaging Using Dual Dictionaries**
Jean-Christophe Brisset[1], Riccardo Otazo[1], Yulin Ge[1]
[1]Department of Radiology, New York University School of Medicine, New York, NY, United States

1263. **Diffusion-Weighted Thermometry Using Subarachnoid Space Cerebrospinal Fluid in Subacute Carbon Monoxide Poisoning Patients**
Shunrou Fujiwara[1], Yoshichika Yoshioka[2], Tsuyoshi Matsuda[3], Hideaki Nishimoto[1], Toshiyuki Murakami[1], Akira Ogawa[1], Kuniaki Ogasawara[1], Makoto Sasaki[4], Takaaki Beppu[1, 5]
[1]Department of Neurosurgery, Iwate Medical University, Morioka, Iwate, Japan; [2]WPI Immunology Frontier Research Center, Osaka University, Suita, Osaka, Japan; [3]MR Applications and Workflow Asia Pacific, GE Healthcare Japan, Tokyo, Japan; [4]Division of Ultrahigh Field MRI, Institu, Iwate Medical University, Yahaba, Iwate, Japan; [5]Hyperbaric Medicine, Iwate Medical University, Morioka, Iwate, Japan

Traditional Poster
Fetal & Pediatric Neuroimaging: Clinical Studies

Exhibition Hall Monday 16:30-18:30

1264. **MRI Based Semi-Automatic Volumetric Measurements of the Fetal Brain**
Daphna Link[1, 2], Michael Braginsky[3], Leo Joskowicz[3], Liat Ben Sira[4], Gustavo Malinger[5], Ariel Many[6], Dafna Ben Bashat[1, 7]
[1]Functional Brain Center, The Wohl Institute for Advanced Imaging, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel; [2]Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel; [3]School of Engineering and Computer Science, The Hebrew University of Jerusalem, Jerusalem, Israel; [4]Division of Pediatric Radiology, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel; [5]Obstetrics and Gynecology US Unit, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel; [6]Department of Obstetrics and Gynecology, Lis Maternity Hospital, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel; [7]Sackler Faculty of Medicine and Sagol school of neuroscience, Tel Aviv University, Tel Aviv, Israel

1265. **Mapping the Preterm Newborn Brain: A Diffusion Tensor Study of the Cerebellum's Early Neural Connections**
Lillian Gabra Fam[1, 2], Jeanie LY Cheong[1, 3], Alexander Leemans[4], Christopher L. Adamson[1], Richard Beare[1], Marc L. Seal[1, 5], Peter J. Anderson[1, 5], Lex W. Doyle[1, 3], Alicia J. Spittle[1, 6], Deanne K. Thompson[1, 7]
[1]Murdoch Childrens Research Institute, Melbourne, Victoria, Australia; [2]Department of Paediatrics, University of Melbourne , Melbourne, Victoria, Australia; [3]Royal Women's Hospital, Melbourne, Victoria, Australia; [4]Image Sciences Institute, University Medical Center Utrecht, Netherlands; [5]Department of Paediatrics, University of Melbourne, Melbourne, Victoria, Australia; [6]Royal Women's Hospital , Melbourne, Victoria, Australia; [7]Florey Institute of Neuroscience and Mental Health, Melbourne, Victoria, Australia

1266. **Diffusion MRI Identifies Enhanced Connection of Neural Pathways in Toddlers with Autism Spectrum Disorder**
J. Mitra[1], E. Conti[2, 3], K-K. Shen[1], J. Fripp[1], O. Salvado[1], S. Calderoni[2], A. Guzzetta[2, 3], S. Rose[1]
[1]Australian e-Health & Research Centre, CSIRO Digital Productivity Flagship, Herston, QLD, Australia; [2]Dept. of Developmental Neuroscience, Stella Maris Scientific Institute, Pisa, Italy; [3]University of Pisa, Pisa, Italy

1267. **White Matter Development in Preterm Infants at Term Equivalent Age: Assessment Using TBSS**
Hye Jin Jeong[1], So-Yeon Shim[2], Dong Woo Son[3], Mira Chung[4], Sukyoung Park[4], Zang-Hee Cho[1]
[1]Neuroscience Research Institute, Namdong-gu, Incheon, Korea; [2]Ewha Womans University, Division of Neonatology, Seoul, Korea; [3]Gachon University, Division of Neonatology, Incheon, Korea; [4]Gachon University, Department of Early Childhood Education, Gyeonggi Province, Korea

1268. **Pituitary Perfusion Characteristics in Idiopathic Central Precocious Puberty: Evaluation with Dynamic Contrast Enhanced T1-Weighted MR Imaging Using Brix Pharmacokinetic Model**
Chao-Ying Wang[1], Shih-Wei Chiang[2, 3], Ping-Huei Tsai[4, 5], Hua-Shan Liu[4, 5], Hsiao-Wen Chung[2], Hung-Wen Kao[3], Chun-Jung Juan[3], Cheng-Yu Chen[4, 5]
[1]Department of Biology and Anatomy, National Defense Medical Center, Taipei, Taiwan, Taiwan; [2]Graduate Institute of Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan, Taiwan; [3]Department of Radiology, Tri-Service General Hospital, Taipei, Taiwan, Taiwan; [4]Imaging Research Center, Taipei Medical University, Taipei, Taiwan, Taiwan; [5]Department of Medical Imaging, Taipei Medical University, Taipei, Taiwan, Taiwan

1269. The Reduction of Flow Artifacts in T1W Spiral Spin-Echo Imaging: A Preliminary Study in Children
Zhiqiang Li[1], Houchun H. Hu[2], Dinghui Wang[1], Jeffrey H. Miller[2], John P. Karis[3], James G. Pipe[1]
[1]Imaging Research, Barrow Neurological Institute, Phoenix, AZ, United States; [2]Radiology, Phoenix Children's Hospital, Phoenix, AZ, United States; [3]Neuroradiology, Barrow Neurological Institute, Phoenix, AZ, United States

1270. Arterial Spin Labeling Perfusion Imaging Performed in Acute Perinatal Stroke Reveals Hyperperfusion in Association with Cerebral Ischemic Injury
Christopher G. Watson[1, 2], Mathieu Dehaes[3], Borjan A. Gagoski[3], P. Ellen Grant, [34], Michael J. Rivkin[1, 4]
[1]Neurology, Boston Children's Hospital, Boston, MA, United States; [2]Graduate Program for Neuroscience, Boston University, Boston, MA, United States; [3]Newborn Medicine, Boston Children's Hospital, MA, United States; [4]Radiology, Boston Children's Hospital, Boston, MA, United States

1271. fMRI Measures of the Dorsal Visual Cortex Correlates with Behavioral Performance and Cortical Thickness
Tanya Poppe[1], Myra Leung[1], Anna Tottman[2], Jane Alsweiler[3], Frank Bloomfield[2], Jane Harding[2], Ben Thompson[1, 4]
[1]Department of Optometry and Vision Science, University of Auckland, Auckland, New Zealand; [2]Liggins Institute, University of Auckland, Auckland, New Zealand; [3]Department of Paediatrics: Child and Youth Health, University of Auckland, Auckland, New Zealand; [4]Department of Optometry and Vision Science, University of Waterloo, Waterloo, Ontario, Canada

Traditional Poster
Normal Developing Brain

Exhibition Hall Monday 16:30-18:30

1272. Longitudinal Cortical Maturation in Typically Developing Infants and Children
Justin M. Remer[1], Douglas C. Dean III[1, 2], Sara D'Arpino[1], Elise Croteau-Chonka[1], Holly Dirks[1], Sean C.L. Deoni[1, 3]
[1]Advanced Baby Imaging Lab, School of Engineering, Brown University, Providence, RI, United States; [2]Waisman Lab for Brain Imaging and Behavior, University of Wisconsin, Madison, WI, United States; [3]Department of Pediatric Radiology, Children's Hospital Colorado, Aurora, CO, United States

1273. Clustering Analysis of Human Infant Brain Maturation Based on Multi-Parametric MR Images
Jessica Lebenberg[1], Cyril Poupon[2], Bertrand Thirion[3], François Leroy[1], Jean-François Mangin[4], Ghislaine Dehaene-Lambertz[1], Jessica Dubois[1]
[1]Cognitive Neuroimaging Unit U992, INSERM-CEA, Gif-Sur-Yvette, Essonne, France; [2]UNIRS, CEA, Gif-Sur-Yvette, Essonne, France; [3]Parietal, INRIA, Gif-Sur-Yvette, Essonne, France; [4]UNATI, CEA, Gif-Sur-Yvette, Essonne, France

1274. Mapping the Myelin G-Ratio During Neurodevelopment
Douglas Dean[1, 2], Elise Croteau-Chonka[2], Holly Dirks[2], Andrew L. Alexander[3], Sean Deoni[2, 4]
[1]Waisman Center, University of Wisconsin-Madison, Madison, WI, United States; [2]Engineering, Brown University, Providence, RI, United States; [3]Waisman Center, University of Wisconsin-Madison, Madison, WI, United States; [4]Children’s Hospital Colorado, Dever, CO, United States

1275. Neural Correlates of the Longitudinal Development of Phonological Processing in Early Childhood
Andrea S. Miele[1, 2], Holly Dirks[2], Dannielle John Whiley[2], Terry Harrison-Goldman[1, 3], Viren D'Sa[3], Sean Deoni[2, 4]
[1]Psychiatry and Human Behavior, Alpert Medical School of Brown University, Providence, RI, United States; [2]Advanced Baby Imaging Laboratory, Brown University, Providence, RI, United States; [3]Pediatrics, Neurodevelopmental Center, MHRI, Pawtucket, RI, United States; [4]Pediatric Radiology, Children's Hospital Colorado, CO, United States

1276. 18q- Brain Development with Age and the Effect of Deletion Size
Xi Tan[1], Jannine Cody[2], Jack L. Lancaster[1]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Department of Pediatrics, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

1277. A Metabolic Study of Normal Mouse Brain Maturation Using Hyperpolarized 13C
Yiran Chen[1], Robert Bok[1], Subramanian Sukumar[1], Hosung Kim[1], Xin Mu[1], Ann Sheldon[1], A James Barkovich[1], Donna M. Ferriero[1], Duan Xu[1]
[1]University of California San Francisco, San Francisco, CA, United States

1278. Developmental Changes in Neurochemical Profiles of the Mouse Midbrain and Hippocampus
Ivan Tkac[1], Kathleen Czerniak[2], Lanka Dasanayaka[2], Biplab Dasgupta[3], Raghavendra Rao[2]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States; [2]Department of Pediatrics, University of Minnesota, Minneapolis, MN, United States; [3]Division of Hematology/Oncology, Cincinnati Children's Hospital, Cincinnati, OH, United States

1279. Metabolite Distributions in Human Aging Brain - A Study with Short-TE Whole Brain MR Spectroscopic Imaging
Xiao-Qi Ding[1], Helen Maghsudi[1], Andrew A. Maudsley[2], Mohammad Sabati[2], Sulaiman Sheriff[2], Martin Schütze[1], Paul Bronzlik[1], Heinrich Lanfermann[1]
[1]Institute of Diagnostic and Interventional Neuroradiology, Hannover Medical School, Hannover, Lower Saxony, Germany; [2]Department of Radiology, University of Miami School of Medicine, Miami, FL, United States

1280. Novel Probabilistic Neonatal Cortical Brain Atlas
Bonnie Alexander[1], Andrea Murray[1], Jian Chen[1, 2], Wai Yen Loh[1, 3], Claire Kelly[1], Richard Beare[1], Lillian Gabra Fam[1, 4], Peter Anderson[1, 4], Lex Doyle[1, 5], Alicia Spittle[1, 5], Jeanie Cheong[1, 5], Marc Seal[1, 4], Deanne Thompson[1, 3]
[1]Murdoch Childrens Research Institute, Melbourne, Victoria, Australia; [2]Dept of Medicine, Monash University, Melbourne, Australia; [3]Florey Institute of Neuroscience and Mental Health, Melbourne, Australia; [4]Dept of Paediatrics, The University of Melbourne, Melbourne, Australia; [5]Royal Women's Hospital, Melbourne, Australia

1281. Characterisation of Sensori-Motor CBF and BOLD Functional Responses During Early Development with Dual-Echo PCASL and fMRI
Thomas Alderliesten[1, 2], Esben Thade Petersen[3], Manon JNL Benders[1, 2], Petra MA Lemmers[2], Alessandro Allievi[4], Julia Wurie[1], Serena J. Counsell[1], Etienne Burdet[4], A. David Edwards[1, 4], Jo V. Hajnal[1, 5], Tomoki Arichi[1, 4]
[1]Centre for the Developing Brain, King's College London, London, United Kingdom; [2]Department of Neonatology, University Medical Center Utrecht, Utrecht, Netherlands; [3]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [4]Department of Bioengineering, Imperial College London, London, United Kingdom; [5]Division of Imaging Sciences and Biomedical Engineering, King's College London, London, United Kingdom

1282. Functional Network Interactions During Typical Development in Infancy and Early Childhood
Jonathan O'Muircheartaigh[1, 2], Douglas C. Dean[3], Lindsay Walker[4], Nicole Waskiewicz[4], Holly Dirks[4], Sean Deoni[4, 5]
[1]Department of Neuroimaging, King's College London, London, United Kingdom; [2]Centre for the Developing Brain, King's College London, London, United Kingdom; [3]Waisman Center, University of Wisconsin-Madison, WI, United States; [4]School of Engineering, Brown University, RI, United States; [5]Department of Pediatric Radiology, Children's Hospital Colorado, Denver, CO, United States

1283. Modulation of Resting-State Brain Networks in Newborns by Heel Prick
Lara Lordier[1], Frédéric Grouiller[2], Dimitri Van de Ville[2, 3], Ana Sancho Rossignol[4], Maria Isabel Cordero[4], François Lazeyras[2], François Ansermet[4], Petra S. Hüppi[1]
[1]Division of Development and Growth, Department of Pediatrics, University of Geneva, Geneva, Switzerland; [2]Department of Radiology and Medical Informatics, Geneva University Hospital, Geneva, Switzerland; [3]Institute of Bioengineering, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [4]Division of Child and Adolescent Psychiatry, Department of Pediatrics, University of Geneva, Geneva, Switzerland

1284. Differences in Brain Activation Associated with Infant Diet: An fMRI Study
Xiawei Ou[1, 2], R.T. Pivik[1, 3], Aline Andres[1, 3], Mario Cleves[1, 3], Thomas Badger[1, 3]
[1]Arkansas Children's Nutrition Center, Little Rock, AR, United States; [2]Radiology and Pediatrics, University of Arkansas for Medical Sciences, Little Rock, AR, United States; [3]University of Arkansas for Medical Sciences, AR, United States

Traditional Poster
Autism & Neuro Development
Exhibition Hall Monday 16:30-18:30

1285. Reduced Cerebral Blood Flow in Boys with Duchenne Muscular Dystrophy

ISMRM MERIT AWARD magna cum laude

Nathalie Doorenweerd[1, 2], Eve M. Dumas[2], Eidrees Ghariq[1, 3], Sophie Schmid[1, 3], Chiara S.M. Straathof[2], Pietro Spitali[4], Ieke Ginjaar[5], Beatrijs H. Wokke[2], Debby G.M. Schrans[6], Janneke C. van den Bergen[2], Erik W. van Zwet[7], Andrew G. Webb[1], Mark A. van Buchem[1], Mathias J.P. van Osch[1, 3], Jan J.G.M. Verschuuren[2], Jos G.M. Hendriksen[6, 8], Erik H. Niks[2], Hermien E. Kan[1, 3]
[1]Department of Radiology, C.J. Gorter Center for High Field MRI, Leiden University Medical Center, Leiden, Zuid Holland, Netherlands; [2]Department of Neurology, Leiden University Medical Center, Leiden, Zuid Holland, Netherlands; [3]Leiden Institute for Brain and Cognition, Leiden, Zuid Holland, Netherlands; [4]Department of Human Genetics, Leiden University Medical Center, Leiden, Zuid Holland, Netherlands; [5]Department of Clinical Genetics, Leiden University Medical Center, Leiden, Zuid Holland, Netherlands; [6]Department of Neurological Learning Disabilities, Kempenhaeghe Epilepsy Center, Heeze, Noord-Brabant, Netherlands; [7]Department of Medical Statistics, Leiden University Medical Center, Leiden, Zuid Holland, Netherlands; [8]Department of Neurology, Maastricht University Medical Center, Limburg, Netherlands

1286. Reciprocal Alterations of White Matter Microstructure in Carriers of Deletions Versus Duplications at the 16p11.2 Chromosomal Locus Are Associated with Cognitive and Behavioral Impairment

Yi-Shin Chang[1], Julia P. Owen[1], Tony Thieu[1], Nicholas Pojman[1], Polina Bukshpun[1], Mari Wakahiro[1], Elysa Marco[1], Jeffrey Berman[2], John E. Spiro[3], Wendy Chung[4], Randy Buckner[5], Timothy Roberts[2], Srikantan Nagarajan[1], Elliott Sherr[1], Pratik Mukherjee[1]
[1]University of California in San Francisco, San Francisco, CA, United States; [2]Children's Hospital of Philadelphia, Philadelphia, PA, United States; [3]Simons Foundation, New York, United States; [4]Columbia University, New York, United States; [5]Harvard University, Boston, MA, United States

1287. Altered Tract Integrity of the Social Communication Network and Its Functional Correlations in High-Functioning Autism: A Diffusion Spectrum Imaging (DSI) Study

Yu-Chun Lo[1], Yu-Jen Chen[1], Yung-Chin Hsu[1], Susan Shur-Fen Gau[2, 3], Wen-Yih Isaac Tseng[1, 4]
[1]Center for Optoelectronic Medicine, National Taiwan University College of Medicine, Taipei, Taiwan; [2]National Taiwan University College of Medicine, Department of Psychiatry, Taipei, Taiwan; [3]Department of Psychiatry, National Taiwan University Hospital, Taipei, Taiwan; [4]Molecular Imaging Center, National Taiwan University, Taipei, Taiwan

1288. Subcortical Rather Than Cortical Changes Mediate the Clinical Profile on ADHD Boys at an Earlier Stage

Qi Liu[1], Lizhou Chen[1], Ying Chen[2], Xinyu Hu[1], Ming Zhou[1], Fei Li[1], Lanting Guo[2], Qiyong Gong[1], Xiaoqi Huang[1]
[1]Huaxi MR Research Center (HMRRC), Department of Radiology, West China Hospital of Sichuan University, Chengdu, Sichuan, China; [2]Deptmeny of Psychiatry, West China Hospital of Sichuan University, P.R.China, Chengdu, Sichuan, China

1289. Age Related Changes of the Interrelationships of White Matter in Autism Spectrum Disorder

Douglas Dean[1], Brittany Travers[1], Erin Bigler[2], Molly Prigge[3], Alyson Froehlich[3], Nicholas Lange[4], Janet Lainhart[1], Andrew Alexander[1]
[1]Waisman Center, University of Wisconsin-Madison, Madison, WI, United States; [2]Brigham Young University, Provo, UT, United States; [3]University of Utah, Salt Lake City, UT, United States; [4]Harvard School of Medicine and McLean Hospital, Belmont, MA, United States

1290. Functional Connectivity of Altered Grey Matter Regions in Autism Spectrum Disorder: Correlations with Clinical Testing

Letizia Casiraghi[1, 2], Fulvia Palesi, [23], Gloria Castellazzi, [24], Andrea De Rinaldis, [24], Carol Di Perri[5], Claudia AM Wheeler-Kingshott[6], Egidio D'Angelo[1, 2]
[1]Department of Brain and Behavioral Sciences, University of Pavia, Pavia, PV, Italy; [2]Brain Connectivity Center, C. Mondino National Neurological Institute, Pavia, PV, Italy; [3]Department of Physics, University of Pavia, Pavia, PV, Italy; [4]Department of Electrical, Computer and Biomedical Engineering, University of Pavia, Pavia, PV, Italy; [5]Department of Brain and Behavioural Sciences, University of Pavia, Pavia, PV, Italy; [6]NMR Research Unit, Department of Neuroinflammation, Queen Square MS Centre, UCL Institute of Neurology, London, England, United Kingdom

1291. Altered Functional Connectivity of Emotional Network in Children with Attention-Deficit/Hyperactivity Disorder

Lizhou Chen[1], Ning He[2], Qi Liu[1], Xinyu Hu[1], Lanting Guo[2], Xiaoqi Huang[1], Qiyong Gong[1]
[1]Huaxi MR Research Center (HMRRC), West China Hospital of Sichuan University, Chengdu, Sichuan, China; [2]Department of Psychiatry, West China Hospital of Sichuan University, Chengdu, Sichuan, China

1292. Multi-Parametric Magnetic Resonance to Investigate Aggression: A Study at 11.7T on the BALB/cJ Mouse Model

Houshang Amiri[1, 2], Amanda Jager[2], Sjaak J. A. van Asten[1], Arend Heerschap[1], Jeffrey Glennon[2]
[1]Department of Radiology, Radboud University Medical Center, Nijmegen, Gelderland, Netherlands; [2]Department of Cognitive Neuroscience, Radboud University Medical Center, Nijmegen, Gelderland, Netherlands

1293. Altered Functional and Structural Connectivities Within Defalut Mode Network in Adolescents with Autism Spectrum Disorder

Hsiang-Yun Sherry Chien[1], Susan Shur-Fen Gau[2], Yu-Jen Chen[1], Yu-Chun Lo[1], Hsiang-Yuan Lin[2], Yung-Chin Hsu[1], Wen-Yih Isaac Tseng[1, 3]
[1]Center for Optoelectronic Medicine, National Taiwan University College of Medicine, Taipei, Taiwan, Taiwan; [2]Department of Psychiatry, National Taiwan University College of Medicine, Taipei, Taiwan, Taiwan; [3]Molecular Imaging Center, National Taiwan University, Taipei, Taiwan, Taiwan

1294. Investigating Brain Connectomic Alterations in Autism Using Reproducibility of Independent Components Derived from Resting State fMRI

Mohammed Syed[1], Zhi Yang[2], Gopikrishna Deshpande[3, 4]
[1]Department of Computer Science and Software Engineering, Auburn University , Auburn, AL, United States; [2]Key Laboratory of Behavioral Sciences, Institute of Psychology, Chinese Academy of Sciences, Beijing, China; [3]Department of Electrical and Computer Engineering, Auburn University, Auburn, AL, United States; [4]Department of Psychology, Auburn University, Auburn, AL, United States

1295. A T2 MR Study of Brain Development in a Valproic Acid Model of Autism

Loredana Sorina Truica[1], Sarah Raza[1], J. Keiko McCreary[1], Ian Q. Whishaw[1], Robbin Gibb[1]
[1]Neuroscience, University of Lethbridge, Lethbridge, Alberta, Canada

1296. Diffusion Tensor Imaging Metrics May Be Less Sensitive Than Volumetry/morphology in Measuring Differences in Mouse Models Related to Autism.

Jacob Ellegood[1], Jan Scholz[1], Mark Henkelman[1, 2], Jason P. Lerch[1, 2]
[1]Mouse Imaging Centre, Hospital for Sick Children, Toronto, Ontario, Canada; [2]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada

1297. Diffusion Tensor Imaging to Assess Gray and White Matter Microstructural Brain Abnormalities in a Feline Model of Alpha-Mannosidosis

Manoj Kumar[1], Jeff T. Duda[1], Sea-Young Yoon[2], Jessica Bagel[3], Patricia O'Donnell[3], Charles Vite[3], Stephen Pickup[1], James C. Gee[1], John H. Wolfe[4], Harish Poptani[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Research Institute of the Children's Hospital of Philadelphia, Philadelphia, PA, United States; [3]School of Veterinary Medicine, University of Pennsylvania, Philadelphia, PA, United States, PA, United States; [4]Research Institute of the Children's Hospital of Philadelphia,, Philadelphia, PA, United States

1298. Increased Frontal Irregularity of Resting State fMRI in Children with Autism Spectrum Disorders

Robert X. Smith[1], Devora Beck-Pancer[2], Rosemary McCarron[2], Kay Jann[1], Leanna Hernandez[2], Mirella Dapretto[2], Danny JJ Wang[1]
[1]Neurology, UCLA, Los Angeles, CA, United States; [2]Psychiatry and Biobehavioral Sciences, UCLA, Los Angeles, CA, United States

Traditional Poster
Normal Brain fMRI

Exhibition Hall Monday 16:30-18:30

1299. The Healthy Human Cerebellum Engaging in Complex Patterns: An fMRI Study

Adnan A.S. Alahmadi[1, 2], Matteo Pardini[1, 3], Rebecca S. Samson[1], Karl J. Friston[4], Ahmed T. Toosy[1, 5], Egidio D'Angelo[6, 7], Claudia A.M. Wheeler-Kingshott[1]

[1]NMR Research Unit, Department of Neuroinflammation, Queen Square MS Centre, UCL Institute of Neurology, London, England, United Kingdom; [2]Department of Diagnostic Radiology, Faculty of Applied Medical Science, KAU, Jeddah, Saudi Arabia; [3]Department of Neurosciences, Ophthalmology and Genetics , University of Genoa, Genoa, Italy; [4]Wellcom Centre for Imaging Neuroscience, UCL, Institute of Neurology, London, United Kingdom; [5]NMR Research Unit, Department of Brain Repair and Rehabilitation, Queen Square MS Centre, UCL Institute of Neurology, London, United Kingdom; [6]C. Mondino National, Neurological Institute, Pavia, Italy; [7]Department of Brain and Behavioural Sciences, University of Pavia, Pavia, Italy

ISMRM MERIT AWARD magna cum laude

1300. fMRI Demonstrates Response Selectivity to the Behaviorally Relevant Sounds in the Midbrain

Jevin W. Zhang[1, 2], Patrick P. Gao[1, 2], Shu-Juan Fan[1, 2], Dan H. Sanes[3], Ed X. Wu[1, 2]

[1]Laboratory of Biomedical Imaging and Signal Processing, The University of Hong Kong, Hong Kong, Hong Kong SAR, China; [2]Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, Hong Kong SAR, China; [3]Center for Neural Science, New York University, New York, NY, United States

1301. Hierarchical Intra-Network Organization of the Visual Network from Resting-State fMRI Data

Yanlu Wang[1], Tie-Qiang Li[1, 2]

[1]Clinical Sciences, Intervention and Technology, Karolinska Institute, Stockholm, Stockholms Län, Sweden; [2]Medical Physics, Karolinska University Hospital, Huddinge, Stockholms Län, Sweden

1302. Causal Brain Correlates of Autonomic Nervous System Outflow

Andrea Duggento[1], Marta Bianciardi[2], Lawrence L. Wald[2], Luca Passamonti[3], Riccardo Barbieri[4, 5], Maria Guerrisi[1], Nicola Toschi[1, 2]

[1]Medical Physics Section, Department of Biomedicine and Prevention, University of Rome "Tor Vergata", Rome, Italy; [2]Department of Radiology, A.A. Martinos Center for Biomedical Imaging, MGH and Harvard Medical School, Boston, MA, United States; [3]Institute of Bioimaging and Molecular Physiology, National Research Council, Catanzaro, Italy; [4]Department of Anesthesia and Critical Care, Massachusetts General Hospital, Boston, MA, United States; [5]Department of Brain and Cognitive Science, Massachusetts Institute of Technology, Cambridge, MA, United States

1303. Sensitivity of Bold and Perfusion Contrasts Derived from Dual-Echo ASL in Localising Active and Imagery Movements

Silvia Francesca Storti[1], Ilaria Boscolo Galazzo[2], Francesca Pizzini[2], Stefania Montemezzi[2], Paolo Manganotti[3], Gloria Menegaz[1]

[1]Department of Computer Science, University of Verona, Verona, Italy; [2]Department of Neuroradiology, AOUI of Verona, Verona, Italy; [3]Department of Neurological and Movement Sciences, University of Verona, Verona, Italy

1304. Cortical Modulation of Binaural Interaction on the Midbrain

Shu-Juan Fan[1, 2], Jevin W. Zhang[1, 2], Patrick P. Gao[1, 2], Dan H. Sanes[3], Ed X. Wu[1, 2]

[1]Laboratory of Biomedical Imaging and Signal Processing, The University of Hong Kong, Hong Kong, Hong Kong SAR, China; [2]Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, Hong Kong SAR, China; [3]Center for Neural Science, New York University, New York, NY, United States

ISMRM MERIT AWARD magna cum laude

1305. Contrast and Duration Dependence of the Negative BOLD Response to Visual Stimulation in Visual and Auditory Cortical Regions at 7T

João Jorge[1, 2], Patrícia Figueiredo[2], Rolf Gruetter[1, 3], Wietske van der Zwaag[4]

[1]Laboratory for Functional and Metabolic Imaging, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [2]Department of Bioengineering, Instituto Superior Técnico, Lisbon, Portugal; [3]Department of Radiology, University of Lausanne and University of Geneva, Lausanne, Switzerland; [4]Biomedical Imaging Research Center, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland

Traditional Poster
Normal Brain Spectroscopy
Exhibition Hall Monday 16:30-18:30

1306. Accelerated 2D *J*-Resolved MRS Through Non-Uniform Sampling and Iterative Soft Thresholding
Andrew Prescot[1], Xianfeng Shi[2], Perry Renshaw[2, 3]
[1]Department of Radiology, University of Utah, Salt Lake City, UT, United States; [2]Department of Psychiatry, University of Utah, Salt Lake City, UT, United States; [3]VISN 19 MIRECC, Salt Lake City, UT, United States

1307. Developmental Changes of Neurochemical Profile in Rat Retrosplenial Cortex Measured by *In Vivo* ^{1}H-MRS
Hui Zhang[1], Hao Lei[1]
[1]State Key Laboratory of Magnetic Resonance and Atomic and Molecular Physics, Wuhan Institute of Physics and Mathematics, Chinese Academy of Sciences, Wuhan, Hubei, China

1308. Usefulness of LCModel Analysis with an Experimental Basis Set in Brain 1H-MRS at 3T
Hyeon-Man Baek[1, 2], Youngjae Jeon[1], Jooyun Kim[1], Mirim Bang[1], Gyunggoo Cho[1], Chaejoon Cheong[1]
[1]Center for MR Research, Korea Basic Science Institute, Ochang, Chungbuk, Korea; [2]Department of Bio-Analytical Science, University of Science & Technology, Yuseong-gu, Daejeon, Korea

1309. The Intraoral Stimulus Increases the Regional Brain Temperature in the Insular Cortex of Rats: A Proton MR Spectroscopy Study
Chizuko Inui-Yamamoto[1, 2], Tsuyoshi Shimura[3], Izumi Ohzawa[2], Yoshichika Yoshioka[1, 2]
[1]Laboratory of Biofunctional Imaging, WPI IFReC, Osaka University, Suita, Osaka, Japan; [2]Graduate School of Frontier Biosciences, Osaka University, Suita, Osaka, Japan; [3]Graduate School of Human Sciences, Osaka University, Suita, Osaka, Japan

1310. Choline – a Differential Marker of Glutamatergic Neurotransmission ?
Anke Henning[1, 2], Simone Grimm[3, 4], Erich Seifritz[3], Milan Scheidegger[2, 3]
[1]Max Planck Institut for Biological Cybernetics, Tuebingen, Baden-Wuertemberg, Germany; [2]Institute for Biomedical Engineering, UZH and ETH Zurich, Zurich, Switzerland; [3]Department of Psychiatry, Psychotherapy, and Psychosomatics, University Hospital of Psychiatry Zurich, Zurich, Switzerland; [4]Clinic for Psychiatry and Psychotherapy, Charite Berlin, Berlin, Germany

1311. Bilateral Sensorimotor GABA Correlation Is Not Driven by Voxel Segmentation
Nicolaas AJ Puts[1, 2], Stephanie Heba[3], Ashley D. Harris[1, 2], David J. McGonigle[4, 5], C. John Evans[5], Hubert Dinse[6], Martin Tegenthoff[3], Tobias Schmidt-Wilcke[3], Richard A. Edden[1, 2]
[1]Russell H. Morgan Dept. of Radiology and Radiological Science, Johns Hopkins University, Baltimore, MD, United States; [2]F.M. Kirby Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States; [3]Dept. of Neurology, BG-klinikum Bergmannsheil, Ruhr - University, Bochum, Germany; [4]School of Biosciences, Cardiff University, Cardiff, Wales, United Kingdom; [5]CUBRIC/School of Psychology, Cardiff University, Cardiff, Wales, United Kingdom; [6]Neural Plasticity lab, Institute for Neuroinformatics, Ruhr - University Bochum, Bochum, Germany

1312. Preserved Whole Brain N-Acetylaspartate During Mild Hypercapnia Challenge
Sanjeev Chawla[1], Yulin Ge[1], Hanzhang Lu[2], Olga Marshall[1], Ke Zhang[1], Brian J. Soher[3], Oded Gonen[1]
[1]Radiology, New York University Langone Medical Center, New York, NY, United States; [2]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [3]Radiology, Duke University Medical Center, Durham, NC, United States

1313. T_2 Estimation of Downfield Metabolites in Human Brain at 7T
Nicole D. Fichtner[1, 2], Anke Henning, [23], Niklaus Zoelch[2], Chris Boesch[1], Roland Kreis[1]
[1]Depts. Radiology and Clinical Research, University Bern, Bern, Switzerland; [2]Institute for Biomedical Engineering, UZH and ETH Zurich, Zurich, Switzerland; [3]Max Planck Institute for Biological Cybernetics, Tuebingen, Germany

1314. **Specificity of Task-Active Modulation of Hippocampal Glutamate in Response to Associative Learning: A ^{1}H Functional Magnetic Resonance Spectroscopy Study**
Jeffrey A. Stanley[1], Ashley Burgess[1], Dalal Khatib[1], Karthik Ramaseshan[1], Noa Ofen[1], David R. Rosenberg[1], Vaibhav A. Diwadkar[1]
[1]Psychiatry and Behavioral Neurosciences, Wayne State University, Detroit, MI, United States

Traditional Poster
Normal Aging Brain
Exhibition Hall Monday 16:30-18:30

1315. **Age-Related Microstructural Changes Quantified Using Myelin Water Imaging and Advanced Diffusion MRI**
Thibo Billiet[1, 2], Mathieu Vandenbulcke[3], Burkhard Mädler[4, 5], Ronald Peeters, Thijs Dhollander[6, 7], Hui Zhang[8], Sabine Deprez[1, 2], Bea RH Van den Bergh[9, 10], Stefan Sunaert[1, 2], Louise Emsell[1, 2]
[1]Translational MRI, KU Leuven, Leuven, Belgium; [2]Radiology, University Hospitals, Leuven, Belgium; [3]Old Age Psychiatry, KU Leuven, Belgium; [4]Philips Healthcare, Hamburg, Germany; [5]Neurosurgery, University of Bonn, Bonn, Germany; [6]Florey Institute of Neuroscience and Mental Health, Melbourne, Victoria, Australia; [7]Elektrotechniek - ESAT, KU Leuven, Leuven, Belgium; [8]Computer Science & Centre for Medical Image Computing, University College London, London, United Kingdom; [9]Psychology, Tilburg University, Tilburg, Netherlands; [10]Health Psychology, KU Leuven, Leuven, Belgium

1316. **NODDI Measures Appear to Be Sensitive to Both Age and Gender**
Chandana Kodiweera[1], Andrew Alexander[2], Yu-Chien Wu[3]
[1]Dartmouth Brain Imaging Center, Dartmouth College, Hanover, NH, United States; [2]Waisman Brain Imaging Lab, University of Wisconsin, Madison, WI, United States; [3]Center for Neuroimaging, Indiana University, Indianapolis, IN, United States

1317. **Age Related Differences in Myelin Content Assessed Using Myelin Water Fraction Imaging**
Muzamil Arshad[1, 2], Jeffrey A. Stanley[3], Naftali Raz[4, 5]
[1]Psychiatry and Behavioral Neurosciences, Wayne State University School of Medicine, Detroit, MI, United States; [2]MD/PhD Program, Wayne State University School of Medicine, Detroit, MI, United States; [3]Psychiatry and Behavioral Neurosciences, Wayne State University School of Medicine, MI, United States; [4]Psychology, Wayne State University, MI, United States; [5]Institute of Gerontology, MI, United States

1318. **Adapting a White Matter Lesion Segmentation Algorithm for Large Cohort Studies**
Leonie Lampe[1, 2], Alexander Schaefer[1, 3], Christopher J. Steele[1], Katrin Arélin[1, 2], Dominik Fritzsch[4], Matthias L. Schroeter[1, 2], Arno Villringer[1, 2], Pierre-Louis Bazin[1]
[1]Department of Neurology, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; [2]Leipzig Research Centre for Civilization Diseases & Clinic of Cognitive Neurology, University of Leipzig, Germany; [3]Clinical Imaging Research Centre & Singapore Institute for Neurotechnology, National University of Singapore, Singapore; [4]Department of Neuroradiology, University Hospital Leipzig, Germany

1319. **Group Analysis of Threshold-Free Cluster Enhancement Score with Application to Normal Ageing White Matter Study by Diffusion Spectrum Imaging**
PIN-YU CHEN[1, 2], Yu-Ling Chang[3], Yu-Jen Chen[1], Yu-Chun Lo[1], Yung-Chin Hsu[1], Wen-Yih I. Tseng[1, 4]
[1]Center For Optoelectronic Medicine, National Taiwan University College of Medicine, Taipei, Taiwan, Taiwan; [2]Department of Life Science, National Taiwan University, Taipei, Taiwan, Taiwan; [3]Department of Psychology, National Taiwan University, Taipei, Taiwan; [4]Molecular Imaging Center, National Taiwan University, Taiwan, Taiwan

1320. **Characterization of White Matter Change and the Adjacent White Matter with Diffusion Tensor MRI**
Shuzhong Chen[1], Vincent Mok[2], Yi-Xiang Wang[1], Ka Sing Wong[2], Winnie CW Chu[1]
[1]Department of Imaging and Interventional Radiology, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong; [2]Department of Medicine and Therapeutics, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong

1321. **Cerebrospinal Fluid Volumetric MRI Mapping as a Simple Measurement for Evaluating Brain Atrophy.**
Jill Britt De Vis[1], Jaco J. Zwanenburg[1], Jolanda M. Spijkerman[1], Geert J. Biessels[1], Jeroen Hendrikse[1], Esben T. Petersen[1]

[1]University Medical Center Utrecht, Utrecht, Netherlands

1322. Neural and Cognitive Substrates of Omega-3 Fatty Acid Supplementation: A Voxel-Based Morphometry Study in Aged Mice
Marco Pagani[1, 2], Debora Cutuli[3, 4], Adam Liska[1], Paola Caporali[3, 4], Daniela Laricchiuta[3, 4], Francesca Foti[3, 4], Cristina Neri[4], Laura Petrosini[4], Alessandro Gozzi[1]
[1]CNCS, Istituto Italiano di Tecnologia - IIT, Rovereto, TN, Italy; [2]CIMeC - Center for Mind and Brain Sciences, UNITN - Università di Trento, Rovereto, TN, Italy; [3]University "Sapienza", Rome, Italy; [4]Santa Lucia Foundation, Rome, Italy

1323. Altered Antioxidant Profile in the Healthy Elderly Occipital and Posterior Cingulate Cortices Measured Via 7 T ^{1}H MRS
Malgorzata Marjanska[1], J. Riley McCarten[2], Laura S. Hemmy[2], Dinesh K. Deelchand[1], Melissa Terpstra[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States; [2]Minneapolis VA Medical Center, Geriatric Research and Clinical Center, MN, United States

1324. Consistency of ^{1}H-MRS in the Putamen of Healthy Adult Controls Over Six Years.
Bretta Russell-Schulz[1], Terri L. Petkau[2], Blair R. Leavitt, [23], Alex L. MacKay, [14]
[1]Radiology, University of British Columbia, Vancouver, BC, Canada; [2]Centre for Molecular Medicine and Therapeutics, Child & Family Research Institute, Vancouver, BC, Canada; [3]Medical Genetics, University of British Columbia, Vancouver, BC, Canada; [4]Physics and Astronomy, University of British Columbia, Vancouver, BC, Canada

1325. Serum BDNF Correlates with Connectivity in the (Pre)motor Hub in the Aging Human Brain: A Resting State fMRI Study
Karsten Mueller[1], Harald E. Möller[1], Katrin Arelin[1, 2], Jürgen Kratzsch[3], Tobias Luck[4], Steffi Riedel-Heller[4], Arno Villringer[1, 2], Matthias L. Schroeter[1, 2]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; [2]Clinic for Cognitive Neurology, University of Leipzig, Germany; [3]Institute of Laboratory Medicine, Clinical Chemistry and Molecular Diagnostics, University of Leipzig, Germany; [4]Institute of Social Medicine, Occupational Health and Public Health, University of Leipzig, Germany

1326. The Sensitivity of Olfactory fMRI in Quantifying Olfactory Performance During Normal Aging
Brittany Martinez[1], Jianli Wang[1], Prasanna Karunanayaka[1], Megha Vasavada[2], Paul J. Eslinger[3], Qing X. Yang[1, 4]
[1]Radiology, Penn State College of Medicine, Hershey, PA, United States; [2]Neurology, UCLA, Los Angeles, CA, United States; [3]Neurology, Penn State College of Medicine, Hershey, PA, United States; [4]Neurosurgery, Penn State College of Medicine, Hershey, PA, United States

1327. The Effect of Age on Wide-View Retinotopic Mapping of Central and Periphery Visual Areas
Wei Zhou[1, 2], Eric R. Muir[1, 3], Jinqi Li[1], Crystal Franklin[1], Timothy Q. Duong[1, 2]
[1]Research Imaging Institute, University of Texas Health Science Center, San Antonio, TX, United States; [2]Radiology, University of Texas Health Science Center, San Antonio, TX, United States; [3]Ophthalmology, University of Texas Health Science Center, San Antonio, TX, United States

1328. The Effect of Behavioral Performance During Multistep Cognitive Processing on the Extraction of Age-Related Changes from Resting State Network Activation
Toshiharu Nakai[1], Ayuko Tanaka[1], Mitsunobu Kunimi[1], Sachiko Kiyama[1], Annabel SH Chen[2]
[1]Neuroimaging & Neuroinformatics, National Center for Geriatrics and Gerontology, Ohbu, Aichi, Japan; [2]Division of Psychology, School of Humanities and Social Sciences, Nanyang Technological University, Singapore, Singapore

1329. Age-Related Changes in Default Mode Sub-Networks
Xueli Wang[1], Jin Xu[1], XiuFen Zhang[1], Xiaolong Peng[1], Pan Lin[1]
[1]Institute of Biomedical Engineering, Xi'an Jiaotong University, Xi'an, Shaanxi, China

1330. **Brain Expansion Capacity: Measuring Brain Volume Adaptation to Water Loading in the Human Brain**
Jack Knight-Scott[1]
[1]Radiology, Children's Healthcare of Atlanta, Atlanta, GA, United States

1331. **Age-Related Increased R2 and R2* Correlates with Increased Brain Iron in a Normal Ageing Mouse Model**
Thomas Walker[1], Christos Michaelides[1], Harry Parkes[2], William Crum[1], Tina Geraki[3], Amy Herlihy[4], Po-Wah So[1]
[1]Department of Neuroimaging, Institute Of Psychiatry, King's College London, London, United Kingdom; [2]CR-UK , Clinical MR Research Group, Institute of Cancer Research, Sutton, Surrey, United Kingdom; [3]Diamond Light Source, Harwell Science and Innovation Campus, Didcot, Oxfordshire, United Kingdom; [4]Agilent Technologies, Yarnton, Oxfordshire, United Kingdom

1332. **Age Associated Iron Deposition in Basal Ganglia Increases with Physical Fitness**
Adam G. Thomas[1, 2], Andrea Dennis[2], Nancy B. Rawlings[2], Charlotte J. Stagg[2], Helen Dawes[3], Heidi Johansen-Berg[2], Peter A. Bandettini[1]
[1]NIMH, Bethesda, MD, United States; [2]FMRIB, University of Oxford, Oxford, United Kingdom; [3]Movement Sciences Group, Oxford Brookes University, Oxford, United Kingdom

1333. **Determinants of Iron Accumulation in the Normal Ageing Brain**
Lukas Pirpamer[1], Edith Hofer[1], Paul Freudenberger[2], Stephan Seiler[1], Christian Langkammer[3], Franz Fazekas[1], Stefan Ropele[1], Reinhold Schmidt[1]
[1]Department of Neurology, Medical University of Graz, Graz, Styria, Austria; [2]Molecular Biology and Biochemistry, Medical University of Graz, Styria, Austria; [3]MGH/HST Martinos Center for Biomedical Imaging, Harvard Medical School, Boston, MA, United States

1334. **Iron Content of Functional Networks in the Aged Human Cortex**
Valerie C. Anderson[1], Manoj K. Sammi[1], Yosef A. Berlow[1], Jeffrey A. Kaye[2], Joseph F. Quinn[2], William D. Rooney[1]
[1]Advanced Imaging Research Center, Oregon Health & Science University, Portland, OR, United States; [2]Department of Neurology, Oregon Health & Science University, Portland, OR, United States

Traditional Poster
Brain Resting State & Default Mode Network

Exhibition Hall Monday 16:30-18:30

1335. **Separation of VLF Fluctuations from Periodic Cardiorespiratory Noise with Critically Sampled Magnetic Resonance Encephalography.**
Vesa Kiviniemi[1], Xindi Wang[2], Vesa Korhonen[1], Tuija Keinänen[3], Yu-Feng Zang[4], Pierre LeVan[5], Shella Keilholz[6]
[1]Diagnostic Radiology, MRC, Oulu University Hospital, Oulu, Finland; [2]Beijing Normal University, Beijing, China; [3]Clinical Neurophysiology, MRC, Oulu University Hospital, Oulu, Finland; [4]Hangzhou Normal University, Hangzhou, China; [5]University of Freiburg, Freiburg, Germany; [6]Emory University, Atlanta, GA, United States

1336. **Short- And Long-Term Effects of Hormonal Contraceptives Use on the Default Mode Network**
Timo De Bondt[1, 2], Dirk Smeets[3], Pim Pullens[1, 2], Wim Van Hecke[3], Yves Jacquemyn[4, 5], Paul M. Parizel[1, 2]
[1]Radiology, Antwerp University Hospital, Antwerp, Belgium; [2]Radiology, University of Antwerp, Antwerp, Belgium; [3]icoMetrix, Leuven, Belgium; [4]Gynaecology and Obstaetrics, Antwerp University Hospital, Antwerp, Belgium; [5]Gynaecology and Obstaetrics, University of Antwerp, Antwerp, Belgium

1337. **Task-Induced Deactivation Does Not Disrupt Functional Coupling of the Default Mode Network During the Movement**
Oleksii Omelchenko[1], Zinayida Rozhkova[2]
[1]Human and Animal Physiology, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine; [2]Radiology, Medical Clinic BORIS, Kyiv, Ukraine

1338. Coupling Between the Salience Network and Default-Mode Network Predicts Task-Induced Deactivation Through Regional Glutamate and GABA Concentrations
Hong Gu[1], Yuzheng Hu[1], Xi Chen[1], Yihong Yang[1]
[1]National Institute on Drug Abuse, NIH, Baltimore, MD, United States

1339. Investigating Task-Based Activation and Functional Connectivity in the White Matter Using fMRI at 3 Tesla
Don Marciel Ragot[1, 2], Erin Mazerolle[3], J. Jean Chen[1, 4]
[1]Rotman Research Institute, Baycrest, Toronto, Ontario, Canada; [2]Engineering Science, University of Toronto, Ontario, Canada; [3]University of Calgary, Ontario, Canada; [4]Medical Biophysics, University of Toronto, Ontario, Canada

1340. BrainVR: The Virtual Reality Brain Connectivity Navigator
Ricardo Ribeiro[1], Inês Neiva[1], Hugo Alexandre Ferreira[1]
[1]Institute of Biophysics and Biomedical Engineering, Faculty of Sciences of the University of Lisbon, Lisboa, ., Portugal

1341. High Frequency Coherence in Pediatric Primary Motor Cortices
Karolina J. Urban[1, 2], Karen M. Barlow[3, 4], Laronna Sewell[2], Bradley G. Goodyear[1, 5], Jeff F. Dunn[1, 5]
[1]Hotchkiss Brain Institute, University of Calgary, Calgary, Alberta, Canada; [2]Neurosciences, University of Calgary, Calgary, Alberta, Canada; [3]Pediatrics and Clinical Neurosciences, University of Calgary, Calgary, Alberta, Canada; [4]Alberta Children's Hospital Research Institute, University of Calgary, Calgary, Alberta, Canada; [5]Radiology, University of Calgary, Calgary, Alberta, Canada

1342. FcMRI Maps Genomic Influence on Acute Alterations of Caudate Putamen Functional Networks with Consomic Rat Strategy
Zhixin Li[1], Chenxuan Li[2], Christopher P. Pawela[2, 3]
[1]Plastic Surgery, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Plastic Surgery, Medical College of Wisconsin, WI, United States; [3]Biophysics, Medical College of Wisconsin, WI, United States

1343. Inter-Vender and Inter-Session Reliability of Resting State Functional Magnetic Resonance Imaging (RsfMRI): Implications for Multicenter Studies
Won-Jin Moon[1], Hyeong Su An[2], Jae-Kyun Ryu[3], Ju Yeon Park, Won Sung Yun, Jin Woo Choi, Geon-Ho Jahng[4], Jang-Yeon Park
[1]Department of Radiology , Konkuk University School of Medicine, Seoul, Korea; [2]1. Department of Radiology, Konkuk University School of Medicine, Seoul, Korea; [3]2. Department of Biomedical Engineering, Konkuk University, Seoul, Korea; [4]Kyunghee University, Seoul, Korea

1344. Task-Induced Deactivation in Medial Structures of the Default Mode Network Varied According to Task Types
Kayako Matsuo[1], Katsuaki Suzuki[1], Keisuke Wakusawa[2], Kiyokazu Takebayashi[1], Yasuo Takehara[3], Norio Mori[1]
[1]Department of Psychiatry, Hamamatsu University School of Medicine, Hamamatsu, Shizuoka, Japan; [2]Research Center for Child Mental Development, Hamamatsu University School of Medicine, Hamamatsu, Shizuoka, Japan; [3]Department of Radiology, Hamamatsu University School of Medicine, Hamamatsu, Shizuoka, Japan

1345. Physiological Characterization of a Robust Survival Rodent fMRI Method
Hanbing Lu[1], Julia K. Brynildsen[1], Li-Ming Hsu[1], Thomas Ross[1], Elliot A. Stein[1], Yihong Yang[1]
[1]Neuroimaging Research Branch, National Institute on Drug Abuse, NIH, Baltimore, MD, United States

Traditional Poster
Mood Disorders & Psychosis

Exhibition Hall Monday 16:30-18:30

ISMRM MERIT AWARD magna cum laude

1346. Does the Interpretation of Task-Based BOLD Activation in Adolescent Bipolar Disorder Require TRUST?
Arron W.S. Metcalfe[1], Benjamin I. Goldstein[2, 3], David E. Crane[1], Antonette Scavone[3], Hanzhang Lu[4], Bradley J. MacIntosh[5, 6]
[1]Brain Sciences, Sunnybrook Research Institute, Toronto, Ontario, Canada; [2]Psychiatry & Pharmacology, University of Toronto, Ontario, Canada; [3]Psychiatry, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada; [4]University of Texas Southwestern

Medical Center, Dallas, TX, United States; [5]Department of Medical Biophysics, University of Toronto, Ontario, Canada; [6]Department of Physical Sciences, Sunnybrook Research Institute, Toronto, Ontario, Canada

1347. ECT-Induced Structural Changes in the Human Brain; a Case Series

Leif Oltedal[1, 2], Ute Kessler[1, 3], Nathan S. White[4], Hauke Bartsch[5], Bjarne Hansen[3], Lars Ersland[6], Renate Grüner[2], Joshua Kuperman[4], Dominic Holland[7], Kenneth Hugdahl, [38], Ketil J. Ødegaard[1, 3], Anders M. Dale, [45]

[1]Department of Clinical Medicine, University of Bergen, Bergen, Norway; [2]Department of Radiology, Haukeland University Hospital, Bergen, Norway; [3]Division of Psychiatry, Haukeland University Hospital, Bergen, Norway; [4]Department of Radiology, University of California, San Diego, CA, United States; [5]Multi-Modal Imaging Laboratory, University of California, San Diego, CA, United States; [6]Department of Clinical Engineering, Haukeland University Hospital, Bergen, Norway; [7]Department of Neurosciences, University of California, San Diego, CA, United States; [8]Department of Biological and Medical Psychology, University of Bergen, Bergen, Norway

1348. Multiparametric MRI Assessment of Chronic Social Defeat-Induced Changes in Mouse Brain Function, Metabolism, and Structure

Joanes Grandjean[1], Damiano Azzinnari[2], Aline Seuwen[1], Erich Seifritz[2], Christopher Pryce[2], Markus Rudin[3, 4]

[1]Institute for Biomedical Engineering, ETH and University Zurich, Zurich, Switzerland; [2]Psychiatric University Hospital Zurich, Zurich, Switzerland; [3]Institute for Biomedical Engineering, ETH and University Zurich, Zurich, Select, Switzerland; [4]Institute of Pharmacology and Toxicology, University Zurich, Zurich, Switzerland

1349. Altered Topographical Organization of the Default-Mode Network in First-Episode Remitted Geriatric Depression.

Zan Wang[1], Yonggui Yuan[2], Hao Shu[1], Feng Bai[1], Jiayong You[3], Zhijun Zhang[1]

[1]Neurology, Affiliated ZhongDa Hospital of Southeast University, Nanjing, Jiangsu, China; [2]Psychosomatics and Psychiatry, Affiliated ZhongDa Hospital of Southeast University, Nanjing, Jiangsu, China; [3]Psychiatry, Nanjing Brain Hospital Affiliated to Nanjing Medical University, Nanjing, Jiangsu, China

1350. Trait and State-Dependent Abnormalities of Bipolar Disorder Detected by Quantitative T1rho Mapping

Casey P. Johnson[1], Lois A. Warren[2], Gary E. Christensen[3], Jess G. Fiedorowicz[2], Vincent A. Magnotta[1], John A. Wemmie[2, 4]

[1]Radiology, University of Iowa, Iowa City, IA, United States; [2]Psychiatry, University of Iowa, Iowa City, IA, United States; [3]Electrical and Computer Engineering, University of Iowa, Iowa City, IA, United States; [4]Veterans Affairs Medical Center, Iowa City, IA, United States

1351. A Pilot fMRI Study of the Effect of Negative Stressful Factors on the Onset of Female Depression

bian haiman[1], ji shengzhang[1], zhuo chunjun[2], li gongying[3], ren junjie[1]

[1]the Fourth Central Hospital of Tianjin, tianjin, China; [2]Tianjin Anning Hospital, tianjin, China; [3]Department of psychiatry, Jining Medical University, shandong, China

1352. Neurostructural Correlates of NCAN, a Genome-Wide Significant Risk Gene for Psychiatric Disorders

Harald Kugel[1], Udo Dannlowski[2, 3], Dominik Grotegerd[2], Ronny Redlich[2], Janina Suchy[2], Nils Opel[2], Thomas Suslow[2, 4], Carsten Konrad[3], Patricia Ohrmann[2], Jochen Bauer[2], Tilo Kircher[3], Axel Krug[3], Andreas Jansen[3], Bernhard T. Baune[5], Walter Heindel[1], Katharina Domschke[6], Volker Arolt[2], Christa Hohoff[2], Marcella Rietschel[7], Stephanie H. Witt[7]

[1]Department of Clinical Radiology, University of Münster, Muenster, NRW, Germany; [2]Department of Psychiatry, University of Münster, Muenster, NRW, Germany; [3]Department of Psychiatry, University of Marburg, Marburg, HE, Germany; [4]Department of Psychosomatic Medicine and Psychotherapy, University of Leipzig, Leipzig, SN, Germany; [5]Discipline of Psychiatry, University of Adelaide School of Medicine, Adelaide, SA, Australia; [6]Department of Psychiatry, University of Würzburg, Würzburg, BY, Germany; [7]Department of Genetic Epidemiology in Psychiatry, Central Institute of Mental Health, Mannheim, BW, Germany

1353. Decreased Posterior Default Mode Network for Depression Patients

Hu Cheng[1], Rui Yang[2], Hongbo Zhang[2], Xiaoping Wu[2], Junle Yang[2], Mingyue Ma[2], Yanjun Gao[2], Hongsheng Liu[2], Shengbin Li[2]

[1]Psychological and Brain Sciences, Indiana University, Bloomington, IN, United States; [2]Xi’an Jiaotong University, Xi'an, Shanxi, China

1354. **Cognitive Control for Processing and Inhibition of Facial Emotional Expressions**
SENTHIL S. KUMARAN[1], BHOOMIKA R. KAR[2], SUNITA GUDWANI[1], ANKEETA SHARMA[1]
[1]DEPARTMENT OF NMR AND MRI FACILITY, ALL INDIA INSTITUTE OF MEDICAL SCIENCES, New Delhi, Delhi, India; [2]Centre of Behavioural and Cognitive Sciences, UNIVERSITY OF ALLAHABAD, Allahabad, Uttar Pradesh, India

1355. **Reproducibility of Metabolite Measurements in Patients with Schizophrenia at 7T**
Subechhya Pradhan[1], Joseph S. Gillen[1, 2], S. Andrea Wijtenburg[3], Ashley D. Harris[1], Laura M. Rowland[3], Peter B. Barker[1, 2]
[1]Russell H. Morgan Department of Radiology and Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Kennedy Krieger Institute, Baltimore, MD, United States; [3]Department of Psychiatry, Maryland Psychiatric Research Center, University of Maryland School of Medicine, Baltimore, MD, United States

1356. **Condition Specific Frequency Patterns in Rs-fMRI Measurement of a Neurodevelopmental Rat Model of Schizophrenia**
Ekkehard Küstermann[1], Vani Thimmashetty[2], Jannis Gundelach[3], Lena Wischhof[3]
[1]"In-vivo-MR" AG, FB2 , Universität Bremen, Bremen, Germany; [2]"In-vivo-MR" AG, FB2, Universität Bremen, Bremen, Germany; [3]Department of Neuropharmacology, Brain Research Institute, University of Bremen, Bremen, Germany

Traditional Poster
Anxiety & PTSD

Exhibition Hall Monday 16:30-18:30

1357. **Global Brain Network Alterations in Post-Traumatic Stress Disorder and Post-Concussion Syndrome**
D Rangaprakash[1], Gopikrishna Deshpande[1, 2], D Narayana Dutt[3], Thomas A. Daniel[2], Adam Goodman[2], Jeffrey S. Katz, [12], Nouha Salibi[1, 4], Thomas S. Denney Jr[1, 2], MAJ Michael N. Dretsch[5, 6]
[1]AU MRI Research Center, Department of Electrical and Computer Engineering, Auburn University, Auburn, AL, United States; [2]Department of Psychology, Auburn University, Auburn, AL, United States; [3]Department of Medical Electronics, Dayananda Sagar College of Engineering, Bangalore, Karnataka, India; [4]MR R&D, Siemens Healthcare, Malvern, PA, United States; [5]National Intrepid Center of Excellence, Walter Reed National Military Medical Center, Bethesda, MD, United States; [6]U.S. Army Aeromedical Research Laboratory, Fort Rucker, AL, United States

1358. **Inter-Hemispheric Functional and Anatomical Connectivity Abnormalities in Traffic Accident-Induced PTSD: A Study Combining fMRI and DTI**
Yawen Sun[1], Yan Zhou[1], Wang Zhen[2], Zhenyu Zhou[3], Yong Zhang[3], Jieqing Wan[4], Jianrong Xu[1]
[1]Department of Radiology, Ren Ji Hospital, School of Medicine, Shanghai Jiao Tong University, Shanghai, China; [2]Shanghai Mental Health Center, Shanghai Jiao Tong University School of Medicine, Shanghai, China; [3]GE Healthcare, Shanghai, China; [4]Department of Neurosurgery, Ren Ji Hospital, School of Medicine, Shanghai Jiao Tong University, Shanghai, China

1359. **Assessment of Stress-Induced Neurochemical Alterations in a Rat Model of Chronic Stress Using *In Vivo* ^{1}H MRS at 11.7 Tesla**
Fawzi Boumezbeur[1], Riccardo Magalhães[2], Ashley Novais[2], Sébastien Mériaux[1], Michel Bottlaender[1], Arnaud Cachia[3], Thérèze Jay[3], Nuno Sousa[2]
[1]NeuroSpin, DSV/I2BM, Commissariat à l'Energie Atomique, Gif-sur-Yvette, France; [2]ICVS/3B's-PT, School of Health Sciences, University of Minho, Braga, Portugal; [3]Inserm U894, Center for Psychiatry and Neurosciences, University Paris-Descartes, Paris, France

1360. **Amygdala Functional Connectivity After Real-Time fMRI Neurofeedback Emotional Training in Combat-Related PTSD**
Raquel Phillips[1], Vadim Zotev[1], Kymberly Young[1], Chung Ki Wong[1], Brent Wurfel[1], Matthew Meyer[1, 2], Frank Krueger[1, 3], Matthew Feldner[1, 4], Jerzy Bodurka[1, 5]
[1]Laureate Institute for Brain Research, Tulsa, OK, United States; [2]Laureate Psychiatric Clinic and Hospital, Tulsa, OK, United States; [3]Dept. of Psychology, George Mason University, Fairfax, VA, United States; [4]Dept. of Psychological Science, University of Arkansas, Fayetteville, AR, United States; [5]College of Engineering, University of Oklahoma, Tulsa, OK, United States

1361. Decoding of Phobic Content with Multivoxel Pattern Analysis in Patiens with Spider Phobia

Simon Schwab[1], Leila M. Soravia[1], Yosuke Morishima[1, 2], Masahito Nakataki[1, 3], Thomas Dierks[1], Thomas E. Nichols[4], Andrea Federspiel[1]
[1]Dept. of Psychiatric Neurophysiology, University Hospital of Psychiatry, University of Bern, Bern, Switzerland; [2]Japan Science and Technology Agency, PRESTO, Japan; [3]Department of Psychiatry, The University of Tokushima, Tokushima, Japan; [4]Department of Statistics & WMG, University of Warwick, Coventry, United Kingdom

1362. Neural Mechanism on Hypofunction of Working Memory Maintenance with Anxiety-Provoking Distracter in Patients with Obsessive Compulsive Disorder and Generalized Anxiety Disorder

Gwang-Won Kim[1], Jong-Chul Yang[2], Gwang-Woo Jeong[1, 3]
[1]Research Institute of Medical Imaging, Chonnam National University Medical School, Gwang-ju, Korea; [2]Psychiatry, Chonbuk National University Hospital, Jeong-ju, Korea; [3]Department of Radiology, Chonnam National University Medical School, Gwang-ju, Korea

1363. Alterations of Cerebral White Matter Volume and Metabolite Concentration in Patients with Generalized Anxiety Disorder: A Voxel-Based Morphometry and 1H-MRS

Chung-Man Moon[1], Gwang-Woo Jeong[1, 2]
[1]Radiology, Research Institute for Medical Imaging, Gwangju, Korea; [2]Radiology, Chonnam National University Hospital, Chonnam Natioanl University Medical School, Gwangju, Korea

1364. Diagnositic Prediction for Social Anxiety Disorder Via Multivariate Pattern Analysis of the Regional Homogeneity

Wenjing Zhang[1], Xun Yang[1], Su Lui[1], Yajing Meng[2], Li Yao[1], Yuan Xiao[1], Wei Zhang[2], Qiyong Gong[1]
[1]Huaxi MR Research Center (HMRRC), Department of Radiology, West China Hospital of Sichuan University, Chengdu, Sichuan, China; [2]Department of Psychiatry, West China Hospital of Sichuan University, Chengdu, Sichuan, China

1365. Morphologic and Cellular Metabolic Abnormalities in DLPFC in Patients with Obsessive-Compulsive Disorder: A Voxel-Based Morphometry and 1H-MRS Study

Shin-Eui Park[1], Gwang-Woo Jeong, [12]
[1]Interdisciplinary Program of Biomedical Engineering, Chonnam National University, Gwangju, Jeollanamdo, Korea; [2]Department of Radiology, Chonnam National University Hospital, Chonnam National University Medical School, Gwangju, Korea

1366. Real-Time fMRI Neurofeedback with Simultaneous EEG in Combat-Related PTSD: Identification of EEG Measures of PTSD Severity and Treatment Response

Vadim Zotev[1], Raquel Phillips[1], Masaya Misaki[1], Chung Ki Wong[1], Brent Wurfel[1], Matthew Meyer[1, 2], Frank Krueger[1, 3], Matthew Feldner[1, 4], Jerzy Bodurka[1, 5]
[1]Laureate Institute for Brain Research, Tulsa, OK, United States; [2]Laureate Psychiatric Clinic and Hospital, Tulsa, OK, United States; [3]Neuroscience Dept., George Mason University, Fairfax, VA, United States; [4]Dept. of Psychological Science, University of Arkansas, Fayetteville, AR, United States; [5]College of Engineering, University of Oklahoma, Tulsa, OK, United States

1367. Metabolic and Microstructural Alterations Associated with Individual Differences in Trait Anxiety: Preliminary Evidence from Magnetic Resonance Spectroscopy and DTI Based Tractography Study

Subash Khushu[1], Shilpi Modi[1], Poonam Rana[1], Richa Trivedi[1]
[1]NMR Research Centre, Institute of Nuclear Medicine and Allied Sciences, Delhi, India

1368. Biophysical Modeling of High Field Diffusion MRI Demonstrates Micro-Structural Aberration in Chronic Mild Stress (CMS) Rat Brain

Ahmad Raza Khan[1], Andrey Chuhutin[2], Brian Hansen[2], Ove Wiborg[3], Christopher D. Kroenke[4], Sune Nørhøj Jespersen[2]
[1]Center of Functionally Integrative Neuroscience, Aarhus University, Aarhus, Denmark; [2]Center of Functionally Integrative Neuroscience, Aarhus University , Aarhus, Denmark; [3]Centre for Psychiatric Research, Aarhus University Hospital, Risskov, Denmark; [4]Advanced Imaging Research Center, Oregon Health & Science University, Beaverton, OR, United States

Traditional Poster
Epilepsy

Exhibition Hall Monday 16:30-18:30

1369. Disrupted Modular Organization of Structural Cortical Network Topology in New-Onset Pediatric Epilepsy
Jie Zheng[1], Rushi Rajyaguru[1], Jeffery Riley[1], Gultekin Gulsen[1], Bruce Hermann[2], Jack Lin[1]
[1]University of California, Irvine, Irvine, CA, United States; [2]University of Wisconsin School of Medicine and Public Health, WI, United States

1370. Characteristic MR Findings in Seizures Associated with Nonketotic Hyperglycemia (NKH): Diagnostic Value of Contrast Enhanced FLAIR Imaging (CE-FLAIR)
Eun Kyoung Lee[1], Eun Ja Lee[1]
[1]Radiology, Dongguk University Ilsan Hospital, Goyang-si, Gyeonggi-do, Korea

1371. Multimodal Quantitative Imaging Detects Functional But Not Structural Abnormalities in Idiopathic Generalized Epilepsy
Megan L. McGill[1], Orrin Devinsky[2], Xiuyuan Wang[2], Brian T. Quinn[2], Heath Pardoe[2], Chad Carlson[2], Tracy Butler[2], Ruben Kuzniecky[2], Thomas Thesen[2]
[1]Radiology, New York University School of Medicine, New York, NY, United States; [2]Comprehensive Epilepsy Center, Neurology, New York University School of Medicine, New York, NY, United States

1372. Improve Lateralizing Sensitivity in Temporal Lobe Epilepsy by Combining Structural MRI with Regional Cerebral Blood Flow and Apparent Diffusion Coefficient
Xiaoqin GUO[1, 2], Shangchen XU[3], Guangbin WANG[1], Yi ZHANG[4], Lingfei GUO[1], Bin ZHAO[1]
[1]MRI, Shandong Medical Imaging Research Institution, Jinan, Shandong, China; [2]Medicine, Shandong University, Jinan, Shandong, China; [3]Neurosurgery, Shandong Provincial Hospital, Shandong, China; [4]Medical Imaging Processing Center, Shandong Medical Imaging Research Institution, Shandong, China

ISMRM MERIT AWARD magna cum laude

1373. Different Epileptic Brain Networks in Unilateral Mesial Temporal Lobe Epilepsy with Hippocampal Sclerosis Identified by the Whole Brain Tract-Based Automatic and Surface-Based Analyses
Yao-Chia Shih[1, 2], Yu-Jen Chen[2], Yung-Chin Hsu[2], Yu-Chun Lo[2], Hong-Huei Liu[3], Wen-Yih Issac Tseng[2, 4]
[1]Graduate Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan; [2]Center for Optoelectronic Medicine, National Taiwan University College of Medicine, Taipei, Taiwan; [3]Department of Neurology, National Taiwan University Hospital, College of Medicine, National Taiwan University, Taipei, Taiwan; [4]Molecular Imaging Center, National Taiwan University, Taipei, Taiwan

1374. MR-Microscopy of Human Hippocampi: Multiparametric Characterization of Hippocampal Sclerosis
Clarissa Gillmann[1], Roland Coras[2], Michael Uder[1], Ingmar Blümcke[2], Tobias Bäuerle[1]
[1]Institute of Radiology, University Hospital Erlangen, Erlangen, Germany; [2]Institute of Neuropathology, University Hospital Erlangen, Erlangen, Germany

1375. Machine Learning Approach for Lateralization of Temporal Lobe Epilepsy Utilizing DTI Structural Connectome
Kouhei Kamiya[1], Yuichi Suzuki[2], Shiori Amemiya[1], Naoto Kunii[3], Kensuke Kawai[4], Harushi Mori[1], Akira Kunimatsu[1], Nobuhito Saito[3], Shigeki Aoki[5], Kuni Ohtomo[1]
[1]Department of Radiology, The University of Tokyo, Bunkyo, Tokyo, Japan; [2]Department of Radiological Technology, The University of Tokyo Hospital, Bunkyo, Tokyo, Japan; [3]Department of Neurosurgery, The University of Tokyo, Bunkyo, Tokyo, Japan; [4]Department of Neurosurgery, NTT Medical Center Tokyo, Shinagawa, Tokyo, Japan; [5]Department of Radiology, Juntendo University School of Medicine, Bunkyo, Tokyo, Japan

1376. Graph-Theoretical Analysis of DTI Reveals Disruption in Global and Regional Structural Networks in Children with Localization-Related Epilepsy

Mojdeh Zamyadi[1], Carter Snead[2], Sam Doesburg[1], Mary Lou Smith[1], Elysa Widjaja[3]
[1]Neurosciences and Mental Health, The Hospital for Sick Children, Toronto, Ontario, Canada; [2]Neurosciences and Mental Health , The Hospital for Sick Children, Toronto, Ontario, Canada; [3]Diagnostic Imaging, The Hospital for Sick Children, Toronto, Ontario, Canada

ISMRM MERIT AWARD summa cum laude

1377. A Longitudinal Study of MR Correlates During Epileptogenesis in a Mouse Model of Temporal Lobe Epilepsy

Niels Leonard Schwaderlapp[1], Philipp Janz[2], Jochen Leupold[1], Ute Häussler[2], Thomas Lange[1], Dominik v. Elverfeldt[1], Carola Haas[2], Jürgen Hennig[1], Laura-Adela Harsan[1], Pierre LeVan[1]
[1]Medical Physics, University Medical Center Freiburg, Freiburg, BW, Germany; [2]Exp. Epilepsy Research, University Medical Center Freiburg, Freiburg, BW, Germany

1378. MR Spectroscopic Studies of Early Post Status Epilepticus in Rats

Yijen Lin Wu[1, 2], Patrice Pearce[1], Amedeo Rapuano[3], T. Kevin Hitchens[4], Nihal deLanerolle[3], Jullie W. Pan[1, 5]
[1]Neurology, University of Pittsburgh, Pittsburgh, PA, United States; [2]Developmental Biology, University of Pittsburgh, Pittsburgh, PA , United States; [3]Neurosurgery, Yale University, New Haven, CT, United States; [4]Pittsburgh NMR Center for Biomedical Research, Carnegie Mellon University, Pittsburgh, PA, United States; [5]Radiology, University of Pittsburgh, Pittsburgh, PA, United States

1379. The Use of Magnetic Resonance Spectroscopy in the Evaluation of Epilepsy in Pediatric Patients

Marisa Blitstein[1], Sandra Rincon[1], Paul Caruso[1], Ronald Thibert[2], Ramon Gilberto Gonzalez[1, 3], Eva-Maria Ratai, [34]
[1]Department of Radiology, Neuroradiology Division, Massachusetts General Hospital, Harvard Medical School, Boston, MA, United States; [2]Neurology / Pediatric Neurology, Massachusetts General Hospital, Harvard Medical School, Boston, MA, United States; [3]A. A. Martinos Center for Biomedical Imaging, MA, United States; [4]Department of Radiology, Neuroradiology Division, Massachusetts General Hospital, Harvard Medical School , Boston, MA, United States

ISMRM MERIT AWARD magna cum laude

1380. Investigating Longitudinal Metabolite and Electrophysiologic Changes Associated with Epileptogenesis *In Vivo* in a Rat Model of Interictal Spiking Using ^{1}H MRS at 7 Tesla

Helen Wu[1, 2], Danielle Senador[3], Matthew Galloway[4], Jeffrey Loeb[5], Jeffrey Stanley[4]
[1]Wayne State University School of Medicine, Detroit, MI, United States; [2]MD/PhD Program, Wayne State University School of Medicine, Detroit, MI, United States; [3]Wayne State University School of Medicine, MI, United States; [4]Psychiatry and Behavioral Neurosciences, Wayne State University School of Medicine, MI, United States; [5]Neurology and Rehabilitation Medicine, University of Illinois at Chicago, IL, United States

1381. Functional Connectivity in Nocturnal Frontal Lobe Epilepsy: An fMRI Resting State Study

Stefania Evangelisti[1], Laura Ludovica Gramegna[1], Claudia Testa[1], David Neil Manners[1], Stefano Zanigni[1], Claudio Bianchini[1], Francesca Bisulli, [2], Laura Licchetta, Ilaria Naldi, Lorenzo Ferri, Paolo Tinuper, [2], Caterina Tonon[1], Raffaele Lodi[1]
[1]Functional MR Unit, Policlinico S.Orsola-Malpighi, Department of Biomedical and NeuroMotor Sciences, University of Bologna, Bologna, Italy; [2]IRCCS Institute of Neurological Sciences of Bologna, Bologna, Italy

1382. The Value of Resting State-fMRI for Detecting Epileptogenic Zone in Patients with Focal Epilepsy

Jianzhong Yin[1, 2], Bofeng Zhao[1], Zhijuan Chen[3], Weidong Yang[3], Yu Qing[4], Li Cai[5], Panli Zuo[6], Hongyan Ni[1, 2], Wen Shen[1, 2]
[1]Radiology Department, Tianjin First Central Hospital, Tianjin, China; [2]Tianjin Medical Imaging Institution, Tianjin, China; [3]Department of Neurosurgery, Tianjin Medical University General Hospital, Tianjin, China; [4]Department of Neurology, Tianjin Medical University General Hospital, Tianjin, China; [5]Clinical PET-CT Center, Tianjin Medical University General Hospital, Tianjin, China; [6]MR Collaboration, Siemens Healthcare China, Beijing, China

Traditional Poster
Multiple Sclerosis
Exhibition Hall Monday 16:30-18:30

1383. Moments of the T2 Spectrum as a Marker of Resolving Edema in New MS Lesions
Sneha Pandya[1], Elizabeth Monohan[2], Michael Dayan[1], Susan A. Gauthier[2], Ashish Raj[1]
[1]Radiology, Weill Cornell Medical College, New York, NY, United States; [2]Neurolgy, Weill Cornell Medical College, New York, NY, United States

1384. Different MRI Measures Predict Clinical Deterioration and Cognitive Impairment in MS: A 5 Year Longitudinal Study
Elisabetta Pagani[1], Maria A. Rocca[1, 2], Paolo Preziosa[1, 2], Sarlota Mesaros[3], Massimiliano Copetti[4], Melissa Petrolini[1], Jelena Drulovic[3], Massimo Filippi[1, 2]
[1]Neuroimaging Research Unit, Institute of Experimental Neurology, Division of Neuroscience, San Raffaele Scientific Institute, Vita-Salute San Raffaele University, Milan, MI, Italy; [2]Department of Neurology, San Raffaele Scientific Institute, Vita-Salute San Raffaele University, Milan, Italy; [3]Neurology Clinic, Clinical Centre of Serbia, University of Belgrade, Belgrade, Yugoslavia; [4]Biostatistics Unit, IRCCS-Ospedale Casa Sollievo della Sofferenza, San Giovanni Rotondo, Italy

1385. Optimizing Gray-Matter White-Matter Contrast on Three-Dimensional Double Inversion Recovery MRI Using Patient-Specific Inversion Times
Refaat E. Gabr[1], Xiaojun Sun[1], Amol S. Pednekar[2], Ponnada A. Narayana[1]
[1]Department of Diagnostic and Interventional Imaging, The University of Texas Health Science Center at Houston, Houston, TX, United States; [2]Philips Healthcare, Cleveland, OK, United States

1386. Comparative Study of Quantitative MRI Markers of Disease Progression in Primary Progressive Multiple Sclerosis
Govind Nair[1], Danish Ghazali[1], Blake Snyder[1], Joan Ohayon[1], Daniel S. Reich[1], Irene Cortese[1], Bibiana Bielekova[1]
[1]NINDS, National Institutes of Health, Bethesda, MD, United States

1387. Highly Reproducible Whole Brain Myelin Water Mapping with FAST-T2 in 4 Minutes Using Geometric Echo Time Sampling
Thanh D. Nguyen[1], Kofi Deh[1], Sneha Pandya[1], Elizabeth Monohan[1], Ashish Raj[1], Yi Wang[1], Susan A. Gauthier[1]
[1]Weill Cornell Medical College, New York, NY, United States

1388. Cognitive Reserve and Functional Connectivity in the Brain at Rest in Relapsing Remitting Musltiple Sclerosis
Barbara Basile[1, 2], Laura Serra[1], Barbara Spanò[3], Valeria Studer[4], Silvia Rossi[4], Diego Centonze[4], Carlo Caltagirone[5], Marco Bozzali[1]
[1]Neuroimaging Laboratory, Santa Lucia Foundation, Rome, Italy; [2]Association of Cognitive Psychotherapy, School of Cognitive Psychotherapy, Roma, Italy; [3]Neuroimaging Laboratory, Santa Lucia Foundation, Roma, Italy; [4]Department of Neuroscience, University of Rome 'Tor Vergata', Rome, Italy; [5]Institute of Neurology, Università Cattolica, roma, Italy

1389. Statistical Brain Network Analysis in Female Relapsing Remitting Multiple Sclerosis Patients Using Diffusion Tensor Imaging
AmirHussein Abdolalizadeh[1, 2], Arash Nazeri[2], Tina Roostaei[2], Mohammad Ali Sahraian[2], Shokufeh Sadaghiani[2], Bahram Mohajer[1], Mohammad Hadi Aarabi[1]
[1]Interdisciplinary Neuroscience Research Program (INRP), Tehran, Iran; [2]Multiple Sclerosis Research Center (MSRC), Tehran, Iran

1390. The Influence of Surgical Correction on White Matter Microstructural Integrity in Rabbits with Familial Coronal Suture Craniosynostosis
Lesley M. Foley[1], Shinjini Kundu[2], Wendy Fellows-Mayle[3], T Kevin Hitchens[1, 4], Gustavo K. Rohde[2], Ramesh Grandhi[3], Christopher M. Bonfield[3], Mark P. Mooney[5]
[1]Pittsburgh NMR Center for Biomedical Research, Carnegie Mellon University, Pittsburgh, PA, United States; [2]Department of Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA, United States; [3]Department of Neurological Surgery, University

of Pittsburgh, Pittsburgh, PA, United States; [4]Department of Biological Sciences, Carnegie Mellon University, Pittsburgh , PA, United States; [5]Department of Anthropology, University of Pittsburgh, Pittsburgh, PA, United States

1391. Central Sulcus and Pericentral Cortical Changes in Multiple Sclerosis
Louise Pape[1], Artem Mikheev[1], Jeffrey Huang[1], Joseph Herbert[1], Henry Rusinek[1], Yulin Ge[1]
[1]Radiology/Center for Biomedical Imaging, NYU Langone Medical Center, New York, NY, United States

1392. Resting State Fluctuation Amplitude Indicates Impaired Cerebrovascular Reactivity in Multiple Sclerosis
Mark J. Lowe[1], Katherine A. Koenig[1], Xiaopeng Zhou[1], Wanyong Shin[1], Robert Bermel[2], Lael Stone[2], Micheal D. Phillips[1]
[1]Imaging Institute, Cleveland Clinic, Cleveland, OH, United States; [2]Neurologic Institute, Cleveland Clinic, Cleveland, OH, United States

1393. Hippocampi and Epilepsy in MS Patients: A Diffusion Weighted Imaging Study with NODDI.
Alberto De Luca[1, 2], Marco Castellaro[1], Stefania Montemezzi[3], Massimiliano Calabrese[4], Alessandra Bertoldo[1]
[1]Department of Information Engineering, University of Padova, Padova, PD, Italy; [2]Department of Neuroimaging, Scientific Institute, IRCCS "Eugenio Medea", Bosisio Parini, LC, Italy; [3]Radiology Unit, Azienda Ospedaliera di Verona, Verona, Italy; [4]Neurology Section, Department Of Neurological and Movement Sciences, University Hospital of Verona, Verona, Italy

1394. Volumetric Cervical Spinal Cord Atrophy Differs Between Younger and Older Onset Relapsing-Remitting Multiple Sclerosis (RRMS) and Correlates with Disability
Courtney A. Bishop[1, 2], Emma McCarthy[3], Richard Nicholas[2], Lesley Honeyfield[4], Paolo A. Muraro[2, 5], Adam D. Waldman[2, 4], Rexford D. Newbould[1, 6]
[1]Imanova Centre for Imaging Sciences, London, United Kingdom; [2]Division of Brain Sciences, Imperial College London, London, United Kingdom; [3]University of Warwick, Coventry, United Kingdom; [4]Department of Imaging, Imperial College Healthcare NHS Trust, United Kingdom; [5]Department of Clinical Neurosciences, Imperial College Healthcare NHS Trust, United Kingdom; [6]Division of Experimental Medicine, Imperial College London, United Kingdom

1395. Relationship of Resting State Functional Connectivity and Visual Acuity in MS Patients with Optic Neuritis
Blessy Mathew[1], Mark J. Lowe[1], Rob Bermel[1]
[1]Cleveland Clinic, Cleveland, OH, United States

1396. Longitudinal Analysis of Advanced and Conventional Magnetic Resonance Imaging Measures of Disease Impact in Multiple Sclerosis
Guillaume Bonnier[1, 2], Bénédicte Mortamet[1, 2], Jean-Philippe Thiran[2], Gunnar Krueger[1, 2], Tobias Kober[1, 2], Cristina Granziera[1]
[1]Siemens ACIT – CHUV Radiology, Siemens Healthcare IM BM PI & Department of Radiology CHUV, Lausanne, Vaud, Switzerland; [2]LTS5, École Polytechnique Fédérale de Lausanne, Lausanne, Vaud, Switzerland

1397. A Novel Double Inversion Recovery MRI Pulse Sequence: Improved Lesion Characterization for Demyelinating WM and Cortical Lesions in Multiple Sclerosis?
Jan-Mendelt Tillema[1], John Port[2], Pascal Atanga[1], Yunhong Shu[2, 3], Claudia Lucchinetti[1], Istvan Pirko[1]
[1]Neurology, Mayo Clinic, Rochester, MN, United States; [2]Radiology, Mayo Clinic, Rochester, MN, United States; [3]Biomedical Engineering and Medical Physics, Mayo Clinic, Rochester, MN, United States

1398. Application of Vector QSM for Imaging Multiple Sclerosis Lesions
Lijie Tu[1, 2], Cynthia Wisnieff[3], Susan Gauthier, David Pitt[4], Yi Wang[1], Tian Liu[5]
[1]Radiology, Weill Cornell Medical College, New York, NY, United States; [2]Applied & Engineering Physics, Cornell University, Ithaca, NY, United States; [3]Tufts University, MA, United States; [4]Neurology, Yale University, New Haven, CT, United States; [5]Medimagemetric, LLC, New York, NY, United States

1399. **Are Outer Cortical MTR Changes Caused Predominantly by MR-Visible Cortical Lesions or Abnormalities in the Normal-Appearing Grey Matter?**
Rebecca Sara Samson[1], Manuel Jorge Cardoso[2, 3], Nils Muhlert[1], Varun Sethi[1], Oezguer Yaldizli[1], Maria A. Ron[1], Sebastian Ourselin[2, 3], David H. Miller[1], Claudia A M Wheeler-Kingshott[1], Declan T. Chard[1, 4]
[1]NMR Research Unit, Department of Neuroinflammation, Queen Square MS Centre, UCL Institute of Neurology, London, England, United Kingdom; [2]Centre for Medical Image Computing, UCL Department of Computer Sciences, London, England, United Kingdom; [3]Dementia Research Centre, Department of Neurodegenerative Diseases, UCL Institute of Neurology, London, England, United Kingdom; [4]NIHR University College London Hospitals Biomedical Research Centre, London, United Kingdom

1400. **Detection of Demyelination and Remyelination in Multiple Sclerosis by Analysis of T2* Relaxation at 7T**
Xiaozhen Li[1, 2], Peter van Gelderen[1], Pascal Sati[3], Jacco de Zwart[1], Daniel Reich[3], Jeff Duyn[1]
[1]Advanced MRI Section, LFMI, NINDS, National Institutes of Health, Bethesda, MD, United States; [2]Dept. NVS, Karolinska Institutet, Huddinge, Stockholm, Sweden; [3]Translational Neuroradiology Unit, DNN, NINDS, National Institutes of Health, Bethesda, MD, United States

1401. **Brain Temperature Is Elevated in Relapsing-Remitting Relative to Progressive Multiple Sclerosis**
Victoria M. Leavitt[1], Alayar Kangarlu[2], Feng Liu[2], Claire S. Riley[3], James F. Sumowski[4]
[1]Columbia University Medical Center, New York, United States; [2]New York State Psychiatric Institute, New York, United States; [3]Columbia University Medical Center, NY, United States; [4]Kessler Foundation, NJ, United States

1402. **Mapping the G-Ratio Within MS Lesions**
Mara Cercignani[1], Giovanni Giulietti[2], Barbara Spano'[2], Marco Bozzali[2]
[1]CISC, Brighton and Sussex Medical School, Brighton, East Sussex, United Kingdom; [2]Neuroimaging Laboratory, Santa Lucia Foundation, Rome, Italy

1403. **Detecting Iron Deposition in Multiple Sclerosis Using Susceptibility Contrast Imaging**
Bing Yao[1, 2], Sarah Wood[1, 3], Zhiguo Jiang[4], Glenn Wylie[1, 2], John DeLuca[1, 2]
[1]Rocco Ortenzio Neuroimaging Center, Kessler Foundation, West Orange, NJ, United States; [2]Department of Physical Medicine & Rehabilitation, Rutgers University, Newark, NJ, United States; [3]Psychology Department, Montclair State University , Montclair, NJ, United States; [4]Human Performance Engineering Lab, Kessler Foundation, West Orange, NJ, United States

1404. **Neurite Orientation Dispersion and Density Imaging (NODDI) in Multiple Sclerosis**
Sourajit Mitra Mustafi[1], Chandana Kodiweera[2], Jennifer S. Randolph[3], James C. Ford[3], Heather A. Wishart[3], Yu-chien Wu[1]
[1]Center for Neuroimaging, Indiana Univeristy , Indianapolis, IN, United States; [2]Dartmouth College, NH, United States; [3]Dartmouth Medical School, Lebanon, NH, United States

1405. **Quantitative Susceptibility Mapping (QSM) Indicates Disturbed Brain Iron Homeostasis in Neuromyelitis Optica**
Thomas Martin Doring[1], Vanessa Granado[2], Gustavo Tukamoto, Fernanda Rueda, Andreas Deistung[3], Juergen Reichenbach[4], Emerson Gasparetto[5], Ferdinand Schweser[6]
[1]Radiodiagnostic Imaging, DASA, Rio de janeiro, Brazil; [2]Radiologia, CDPI, Rio de Janeiro, Brazil; [3]Medical Physics, Uni Jena, Thueringen, Germany; [4]Medical Physics Group, Uni Jena, Thueringen, Germany; [5]DASA, Rio de Janeiro, Brazil; [6]CTRC and Buffalo Neuroimaging Analysis Center, University of NY, Buffalo NY, United States

1406. **Comparison of Segmentation Techniques to Measure Tissue-Specific Atrophy in Multiple Sclerosis**
Patricia Alves Da Mota[1], Ferran Prados[2], Wallace J. Brownlee[1], Manuel Jorge Cardoso[2], Matteo Pardini[1], Nicolas Toussaint[2], Declan T. Chard[3], Sébastien Ourselin[2], David H. Miller[1], Claudia AM Wheeler-Kingshott[1]
[1]NMR Research Unit, Department of Neuroinflammation, Queen Square MS Centre, UCL Institute of Neurology, London, England, United Kingdom; [2]Department of Medical Physics and Bioengineering Wolfson House, Translational Imaging Group CMIC, London, England, United Kingdom; [3]NMR Research Unit, Department of Neuroinflammation, Queen Square MS Centre, UCL Institute of Neurology, London, England, United Kingdom

1407. **An 8 Month Longitudinal Study of T1 Measures in MS Patients Using 3D MPnRAGE**
Steven R. Kecskemeti[1], Andrew L. Alexander[1, 2], Aaron S. Field[3]
[1]Waisman Center, University of Wisconsin, Madison, WI, United States; [2]Medical Physics, University of Wisconsin, Madison, WI, United States; [3]Radioilogy, University of Wisconsin, Madison, WI, United States

1408. **Fully-Automated Single-Image T2 White Matter Hyperintensity Mapping and Quantification with FSL**
Nathan C. Wetter[1, 2], Elizabeth A. Hubbard[3], Robert W. Motl[3], Bradley P. Sutton[1, 2]
[1]Bioengineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana-Champaign, IL, United States; [3]Kinesiology and Community Health, University of Illinois at Urbana-Champaign, IL, United States

Traditional Poster
Traumatic Brain Injury

Exhibition Hall Monday 16:30-18:30

1409. **Experimental TBI Results in Pathophysiology Resembling Motor Neuron Disease**
David K. Wright[1, 2], Chris Van Der Poel[3], Li Yang[4], Stuart McDonald[3], Roger Ordidge[1], Terence J. O'Brien[4], Leigh A. Johnston[5], Sandy R. Shultz[4]
[1]Department of Anatomy and Neuroscience, The University of Melbourne, Melbourne, Victoria, Australia; [2]The Florey Institute of Neuroscience and Mental Health, Melbourne, Victoria, Australia; [3]Department of Human Biosciences, La Trobe University, Victoria, Australia; [4]Department of Medicine, The University of Melbourne, Victoria, Australia; [5]NeuroEngineering Laboratory, School of Engineering, The University of Melbourne, Victoria, Australia

1410. **High Spatial Resolution MRI Unveils the Mystery of Moderate Traumatic Brain Injury**
Qiang Shen[1], Lora Talley Watts[1], Shiliang Huang[1], Michael O'Boyle[1], Justin Alexander Long[1], Timothy Q. Duong[1]
[1]Research Imaging Institute, The University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

1411. **Multimodal Imaging of Functional Alterations of the Thalamus Following Mild Traumatic Brain Injury**
Chandler Sours[1, 2], Elijah George[1, 2], Steven Roys[1, 2], Jiachen Zhuo[1, 2], Rao P. Gullapalli[1, 2]
[1]Diagnostic Radiology and Nuclear Medicine, University of Maryland School of Medicine, Baltimore, MD, United States; [2]Magnetic Resonance Research Center, Baltimore, MD, United States

ISMRM MERIT AWARD magna cum laude

1412. **A Comparative Study of Diffuse and Focal Traumatic Brain Injury Using Multi-Echo Susceptibility Weighted Imaging in Rodent Model**
Sanjay Verma[1], Bhanu Prakash KN[2], Sankar Seramani[2], Enci Mary Kan[3], Kian Chye Ng[3], Mui Hong Tan[3], Jia Lu[3], S Sendhil Velan[2]
[1]Laboratory of Molecular Imaging , Singapore Bioimaging Consortium, Singapore, Singapore; [2]Laboratory of Molecular Imaging, Singapore Bioimaging Consortium, Singapore, Singapore; [3]Defence Medical and Environmental Research Institute, DSO National Laboratories, Singapore

ISMRM MERIT AWARD magna cum laude

1413. **Longitudinal Analysis of Structural and Functional Connectivity of the Thalamus and Anterior Cingulate Cortex in Mild Traumatic Brain Injury**
Armin Iraji[1], Natalie Wiseman[1], Robert Welch[1], Brian O'Neil[1], Andrew Kulek[1], Syed Imran Ayaz[1], E Mark Haacke[1], Zhifeng Kou[1]
[1]Wayne State University, Detroit, MI, United States

ISMRM MERIT AWARD magna cum laude

1414. **Axonal Alterations at Acute Stage of a Non-Impact, Blast-Induced Rat Brain Injury Model By *In Vivo* diffusion Tensor Imaging**
Shiyu Tang[1, 2], Su Xu[1, 2], William L. Fourney[3, 4], Ulrich H. Leist[3, 4], Julie L. Proctor[5, 6], Gary Fiskum[5, 6], Rao P. Gullapalli[1, 2]
[1]Department of Diagnostic Radiology and Nuclear Medicine, University of Maryland, Baltimore, MD, United States; [2]Core for Translational Research in Imaging @ Maryland, University of Maryland, Baltimore, MD, United States; [3]Department of Mechanical Engineering, University of Maryland, Baltimore, MD, United States; [4]Center of Energetics Concepts Development, University of

Maryland, Baltimore, MD, United States; [5]Department of Anesthesiology, University of Maryland, Baltimore, MD, United States; [6]Shock, Trauma, and Anesthesiology Research Center, University of Maryland, Baltimore, MD, United States

1415. DTI Predicts Functional Deficit in Professional Boxers.
Wanyong Shin[1], Blessy Mathew[1], Katherine Koenig[1], Banks Sarah[2], Mark J. Lowe[1], Michael Phillips[1], Michael Modic[3], Charles Bernick[2]
[1]Imaging Institute, Cleveland Clinic Foundation, Cleveland, OH, United States; [2]Lou Ruvo Center for Brain Health, Cleveland Clinic Foundatoin, Las Vegas, Nervada, United States; [3]Neurological Institute, Cleveland Clinic Foundatoin, Cleveland, OH, United States

1416. Evidence for Abnormal Venous Drainage in a Closed Head Model of Pediatric Mild Traumatic Brain Injury Using 9.4T MRI
Elizabeth Imhof[1], Michael Esser, [12], Carolyn JoAnne MacMillan[1], Richelle Mychasiuk, [12], Jeffrey F. Dunn[1, 2]
[1]University of Calgary, Calgary, Alberta, Canada; [2]Alberta Children's Hospital Research Institute, Calgary, Alberta, Canada

1417. Parametric Response Map (PRM) Is a Promising Tool for the Monitoring of Post Traumatic Cerebral Edema
Jules Grèze[1, 2], Pierre Bouzat[1, 2], Jean-François Payen[1, 2], Emmanuel Barbier[2], Benjamin Lemasson[2]
[1]CHU Grenoble, Grenoble, France; [2]equipe 5, Grenoble Institute of Neuroscience, Grenoble, France

1418. Comparison of DTI Group Analysis Using Non-Linear and Linear Registration Techniques
Blessy Mathew[1], Wanyong Shin[1], Mingyi Li[1], Mark J. Lowe[1], Sarah Banks[2], Michael Phillips[1], Michael T. Modic[1], Charles Bernick[2]
[1]Cleveland Clinic, Cleveland, OH, United States; [2]Cleveland Clinic, Las Vegas, NV, United States

1419. Fractal Analysis of the Brain Blood Oxygenation Level Dependent (BOLD) Signal in the Left Putamen of Mild Traumatic Brain Injury (MTBI) Patients
Olga Dona[1], Michael Noseworthy[2]
[1]Biomedical Engineering, McMaster University, Hamilton, Ontario, Canada; [2]Electrical and Computer Engineering, McMaster University, Hamilton, Ontario, Canada

1420. Connectome-Scale Assessment of Structural and Functional Connectivity in Mild Traumatic Brain Injury at the Acute Stage
Armin Iraji[1], Hanbo Chen[2], Natalie Wiseman[1], Tuo Zhang[2], Robert Welch[1], Brian O'Neil[1], Andrew Kulek[1], Syed Imran Ayaz[1], Xiao Wang[1], Conor Zuk[1], E. Mark Haacke[1], Tianming Liu[2], Zhifeng Kou[1]
[1]Wayne State University, Detroit, MI, United States; [2]University of Georgia, GA, United States

1421. Default-Mode Network Functional Connectivity Progression in the Days Following a Single Sports Concussion
Victoria L. Morgan[1], Andrew J. Gregory[2], Allen K. Sills[3]
[1]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [2]Ortho-Sports Medicine, Vnderbilt University, Nashville, TN, United States; [3]Neurosurgery, Vanderbilt University, Nashville, TN, United States

1422. Brain Injury and Mechanisms of Action of HBO2 for Persistent Post-Concussive Symptoms After Mild Traumatic Brain Injury (BIMA): Auditory Functional Magnetic Resonance Imaging at Baseline
Priya Santhanam[1], Peter Cartwright[2], Thomas G. Perkins[3, 4], Terrence R. Oakes[1], John Graner[1], Gerard P. Riedy[1, 5], Lindell K. Weaver[6, 7], William W. Orrison, [28]
[1]National Intrepid Center of Excellence (NICoE), Bethesda, MD, United States; [2]Imgen, LLC, Las Vegas, NV, United States; [3]Philips Healthcare, Cleveland, OH, United States; [4]Perkins Consultative Resources LLC, Fort Collins, CO, United States; [5]Uniformed Services University of the Health Sciences, Bethesda, MD, United States; [6]Department of Hyperbaric Medicine, Intermountain LDS Hospital and Intermountain Medical Center, Salt Lake City, UT, United States; [7]School of Medicine, University of Utah, Salt Lake City, UT, United States; [8]Department of Health Physics, University of Nevada Las Vegas, Las Vegas, NV, United States

1423. Resting-State Functional Magnetic Resonance Imaging Connectivity and Behavioral Outcomes in Traumatic Brain Injury
Shiliang Huang[1], Qiang Shen[1], Lora Talley Watts[1], Justin Alexander Long[1], Wei Li[1], Timothy Q. Duong[1]
[1]Research Imaging Institute, The University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

1424. Anomalous Cognitive and Re-Experiencing Networks in Recent Onset Post-Traumatic Stress Disorder
Shun Qi[1], Panli Zuo[2], langlang Gao[1], Ying Liu, Mathias Nittka[3], Hong Yin
[1] Xijing Hospital, Fourth Military Medical University, xian, shaanxi, China; [2]Siemens Healthcare, MR Collaborations NE Asia, shaanxi, China; [3]Siemens Healthcare, Germany, Germany

1425. Towards Precision Neuroimaging: Standardization of DTI of a Multicenter Traumatic Brain Injury Study
Eva M. Palacios[1], Alastair J. Martin[2], Frank Ezekiel[2], Esther L. Yuh[2], Geoffrey T. Manley[3], Pratik Mukherjee[2]
[1]Radiology and Biomedical Imaging, University of California San Francisco , San Francisco, CA, United States; [2]Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [3]Neurological Surgery, San Francisco General Hospital, San Francisco, CA, United States

1426. High School Football Athletes with a History of Concussion Have Relatively Vulnerable and Faster Aging Resting State Brain Network Than Those Without
Kausar Abbas[1], Trey E. Shenk[1], Thmoas M. Talavage[1, 2]
[1]Electrical and Computer Engineering Department, Purdue University, West Lafayette, IN, United States; [2]Weldon School of Biomedical Engineering, Purdue University, West Lafayette, IN, United States

1427. Quantitative Susceptibility Mapping Using Three Dimensional Segmented Echo-Planar Imaging
Wen-Tung Wang[1], Dzung Pham[1], John A. Butman[1, 2]
[1]National Institutes of Health, Bethesda, MD, United States; [2]Center for Neuroscience and Regenerative Medicine, MD, United States

1428. Single-Subject Diffusion Tensor Imaging Changes After Concussion
Kathryn Yvonne Manning[1], Arthur Brown[2], Robert Bartha[2], Gregory A. Dekaban, Christy Barreira, Tim Doherty[3], Lisa Fischer[4], Sandra Shaw[4], Douglas Fraser[5], Ravi S. Menon[2]
[1]Medical Biophysics, University of Western Ontario, London, Ontario, Canada; [2]Centre for Functional and Metabolic Mapping, Robarts Research Institute, London, Ontario, Canada; [3]Physical Medicine and Rehabilitation, University of Western Ontario, London, Ontario, Canada; [4]Primary Care Sport Medicine, Fowler Kennedy Sport Medicine, London, Ontario, Canada; [5]Paediatrics Critical Care Medicine, London Health Sciences Centre, London, Ontario, Canada

1429. Metabolic Alterations at the Interface of Brain Matters in MTBI Patients: 1H MRSI Study.
Eva Heckova[1], Michal Bittsansky[1, 2], Stefan Sivak[3], Dusan Dobrota[1]
[1]Jessenius Faculty of Medicine in Martin, Comenius University, Bratislava, Slovakia; [2]Radiodiagnostic Clinic, Martin University Hospital, Martin, Slovakia; [3]Clinic of Neurology, Martin University Hospital, Martin, Slovakia

1430. Diffusion Tensor Imaging Changes in Rugby Players Without Diagnosed Concussion
Kathryn Yvonne Manning[1], Gregory A. Dekaban[2], Christy Barreira[2], Sandra Shaw[3], Robert Bartha[4], Lisa Fischer[3], Arthur Brown[4], Ravi S. Menon[4]
[1]Medical Biophysics, University of Western Ontario, London, Ontario, Canada; [2]Robarts Research Institute, London, Ontario, Canada; [3]Primary Care Sport Medicine, Fowler Kennedy Sport Medicine Clinic, London, Ontario, Canada; [4]Centre for Functional and Metabolic Mapping, Robarts Research Institute, London, Ontario, Canada

1431. Suppression of Streak Artifacts in Quantitative Susceptibility Mapping
Wen-Tung Wang[1], Dzung Pham[1], John A. Butman, [12]
[1]Center for Neuroscience and Regenerative Medicine, Bethesda, MD, United States; [2]Radiology and Imaging Sciences, National Institutes of Health, Bethesda, MD, United States

1432. Recovery of Consciousness in Brain Injury: Insights from the Structural and Functional Connectome
Amy Kuceyeski[1], Sudhin Shah[2], Jonathan Dyke[3], Stephen Bickel[4], Farras Abdelnour[3], Nicholas Schiff, Henning Voss, Ashish Raj
[1]Radiology and Brain and Mind Research Institute, Weill Cornell Medical College, New York, NY, United States; [2]Neurology, Weill Cornell Medical College, NY, United States; [3]Radiology, Weill Cornell Medical College, NY, United States; [4]Neurology, Albert Einstein College of Medicine, NY, United States

1433. Prediction of Recovery from Mild TBI Using Genetic Programming Analysis of DTI Data
Richard Watts[1], Margaret J. Eppstein[2], Alex Thomas[3], Joshua P. Nickerson[1], Hugh Garavan[4], Trevor Andrews[1, 5], Christopher G. Filippi[6], Kalev Freeman[3]
[1]Department of Radiology, University of Vermont College of Medicine, Burlington, VT, United States; [2]Department of Computer Science, University of Vermont, Burlington, VT, United States; [3]Department of Surgery, University of Vermont College of Medicine, Burlington, VT, United States; [4]Department of Psychiatry, University of Vermont College of Medicine, Burlington, VT, United States; [5]Philips Healthcare, Cleveland, OH, United States; [6]University of Vermont College of Medicine, Department of Neurology, Burlington, VT, United States

Traditional Poster
Cerebrovascular Reactivity & Compliance

Exhibition Hall Monday 16:30-18:30

1434. Non-Invasive Measurement of Cerebral Arterial Compliance During Post Exercise Ischemia
Esther Warnert[1], Emma Hart[2], Kevin Murphy[1], Adele Babic[3], Judith Hall[3], Richard Wise[1]
[1]CUBRIC, School of Psychology, Cardiff University, Cardiff, United Kingdom; [2]BHI Cardionomics Research Group, Bristol University, Bristol, United Kingdom; [3]Department of Anaesthetics and Intensive Care Medicine, Cardiff University, Cardiff, United Kingdom

1435. Test-Retest Reproducibility of BOLD-CVR Measures in Children Using a Computer-Controlled CO_2 Challenge
Jackie Leung[1], Junseok Kim[2], Andrea Kassner[1, 3]
[1]The Hospital for Sick Children, Toronto, Ontario, Canada; [2]Institute of Medical Science, University of Toronto, Toronto, Ontario, Canada; [3]Medical Imaging, University of Toronto, Toronto, Ontario, Canada

1436. Characterization of Vascular Response in White Matter to Hypercapnia and Hyperoxia
Binu P. Thomas[1], Virendra Mishra[1], Shin-Lei Peng[1], Hao Huang[1], Hanzhang Lu[1]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States

1437. Comparing Cerebrovascular Reactivity Measured Using BOLD and Cerebral Blood Flow at Various Vascular Tension Levels
Sheliza Halani[1], Jonathan B. Kwinta[2], Ali M. Golestani[2], Yasha B. Khatamian[2], J. Jean Chen[1, 3]
[1]Rotman Research Institute, Baycrest, Toronto, Ontario, Canada; [2]Rotman Research Institute, Baycrest, Ontario, Canada; [3]Medical Biophysics, University of Toronto, Ontario, Canada

1438. Investigating the Effect of Cardiorespiratory Fitness on Cerebrovascular Reactivity Using Breath-Hold fMRI
Hannah Furby[1], Molly G. Bright[1], Esther AH Warnert[1], Chris J. Marley[2], Damian M. Bailey[2], Richard G. Wise[1]
[1]CUBRIC, School of Psychology, Cardiff University, Cardiff, United Kingdom; [2]Neurovascular Research Laboratory, University of South Wales, Pontypridd, United Kingdom

1439. T2, Diffusion, and Perfusion Abnormalities Are Associated with Impaired Cerebrovascular Reactivity in the Normal-Appearing White Matter of Elderly Subjects with Leukoaraiosis.
Kevin Sam[1, 2], Boris Peltenburg[2], Adrian P. Crawley[2], Julien Poublanc[2], Olivia Sobczyk[2], Diem Pham[3], David E. Crane[3], Christopher J.M. Scott[3], Alicia A. McNeely[3], Daniel M. Mandell[2], Joseph A. Fisher[1], Sandra E. Black[3], David J. Mikulis[2]
[1]Department of Physiology, University of Toronto, Toronto, Ontario, Canada; [2]Department of Medical Imaging, Toronto Western Hospital, Toronto, Ontario, Canada; [3]Brain Sciences Research Program, Sunnybrook Research Institute, Toronto, Ontario, Canada

1440. Evaluation of Respiratory Fluctuation in Cerebral Venous Blood Oxygenation for Diagnosis of Arteriolar Function
Keigo Nishi[1], Minghui Tang[1], Toru Yamamoto[2]
[1]Graduate school of health Sciences, Hokkaido university, Sapporo, Hokkaido, Japan; [2]Faculty of Health Sciences, Hokkaido university, Sapporo, Hokkaido, Japan

Traditional Poster
Brain perfusion, oxygenation & metabolic rate

Exhibition Hall Monday 16:30-18:30

1441. Validating a Power Relationship Between Cerebral Blood Volume and Cerebral Blood Flow
Jie Huang[1]
[1]Department of Radiology, Michigan State University, East Lansing, MI, United States

1442. Mapping Human Cerebral Vascular/Metabolic Activity Coupling at High-Resolution
William D. Rooney[1, 2], Xin Li[1], Dennis N. Bourdette[3], Charles S. Springer, Jr.[1, 2]
[1]Advanced Imaging Research Center, Oregon Health & Science University, Portland, OR, United States; [2]Knight Cardiovascular Institute, Oregon Health & Science University, Portland, OR, United States; [3]Department of Neurology, Oregon Health & Science University, Portland, OR, United States

1443. The Effects of Hypo-Baric Pressure on Cerebral Blood Flow
Damon Philip Cardenas[1], Eric R. Muir[1], Timothy Q. Duong[1]
[1]University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

1444. Preliminary Study of Hypoxic Exposure Effect on Cerebral Blood Perfusion of Pilots Using 3D ASL
Jie Liu[1], Wanshi Zhang[2], Long Qian[3], Mingxi Liu[1], Xianrong Xu[2], Limin Meng[2]
[1]The Fourth Military Medical University, Xi'an, Shanxi, China; [2]Air Force General Hospital, Beijing, China; [3]GE Healthcare China, Beijing, China

1445. Quantification of Perfusion and Xenon-Transport Across the Blood-Brain Barrier in Humans with Hyperpolarized ^{129}Xe Brain MR at 1.5T
Madhwesha Rao[1], Neil Stewart[1], Graham Norquay[1], Jim Wild[1]
[1]University of Sheffield, Sheffield, South Yorkshire, United Kingdom

1446. The Impact of Fluctuated TCBF Induced by Cardiac Pulsation on the Global CMRO2 Measurement
Chou-Ming Cheng[1, 2], Hsiao-Wen Chung[2], Jen-Chuen Hsieh[1, 3], Shing-Jong Lin[1], Tzu-Chen Yeh[4, 5]
[1]Department of Medical Research, Taipei Veterans General Hospital, Taipei, Taiwan, Taiwan; [2]Graduate Institute of Biomedical Electronics and Bioinformatics, National Taiwan University, Taiwan, Taiwan; [3]Institute of Brain Science, National Yang-Ming University, Taiwan, Taiwan; [4]Department of Radiology, Taipei Veterans General Hospital, Taiwan, Taiwan; [5]Institute of Brain Science, National Yang-Ming University, Taiwan, Taiwan

1447. Comparative Analyses of Magnetic Field Correlation Imaging, Quantitative Susceptibility Mapping and Transverse Relaxation Rate R2* Indices of Brain Iron in Healthy Adults
Vitria Adisetiyo[1], Jens H. Jensen[1], Chu-Yu Lee[1], Donna R. Roberts[1], Maria V. Spampinato[1], Joseph A. Helpern[1, 2]
[1]Radiology and Radiological Science, Center for Biomedical Imaging, Medical University of South Carolina, Charleston, SC, United States; [2]Neuroscience, Medical University of South Carolina, Charleston, SC, United States

1448. Time Course and Distribution of Feraheme in the Normal Human Brain at 7T
Michael Zeineh[1], Samantha Holdsworth[1], Michael Moseley[1], Brian Rutt[1]
[1]Radiology, Stanford University, Stanford, CA, United States

1449. The Relative Contributions of the Transition Metals Iron and Manganese to T_1 and T_2 in White and Gray Matter

Kimberly L. Desmond[1, 2], Alia Al-Ebraheem[1], Rafal Janik[2, 3], Wendy Oakden[2, 4], Jacek M. Kwiecien[5], Wojciech Dabrowski[6], Kalotina Geraki[7], Greg J. Stanisz[2, 4], Michael Farquharson[1], Nicholas A. Bock[1]
[1]Medical Physics and Radiation Sciences, McMaster University, Hamilton, Ontario, Canada; [2]Imaging Research, Sunnybrook Research Institute, Toronto, Ontario, Canada; [3]Medical Biophysics, University of Toronto, Ontario, Canada; [4]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [5]Pathology & Molecular Medicine, McMaster University, Hamilton, Ontario, Canada; [6]Anaesthesiology and Intensive Therapy, Lublin Medical University, Lublin, Poland; [7]Diamond Light Source, Harwell Science and Innovation Campus, Didcot, Oxfordshire, United Kingdom

1450. Assessing Reproducibility and Changes in Oxygenation with R2' During Clinical Hypercapnic and Hypoxic Gas Challenges

Wendy W. Ni[1, 2], Thomas Christen[2], Greg Zaharchuk[2]
[1]Department of Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Department of Radiology, Stanford University, Stanford, CA, United States

Traditional Poster
Lung/Mediastinum

Exhibition Hall Tuesday 10:00-12:00

1451. Quantitative T_1 Mapping and Oxygen Enhanced MRI in Patients with Interstitial Lung Disease

ISMRM MERIT AWARD magna cum laude

Kerry Hart[1, 2], Helen Marshall[1], Neil Stewart[1], Martin Deppe[1], Steve Bianchi[3], Rob Ireland[2], Moira Whyte[4], David Kiely[3], Jim Wild[1]
[1]Academic Unit of Radiology, University of Sheffield, Sheffield, United Kingdom; [2]Academic Unit of Clinical Oncology, University of Sheffield, Sheffield, United Kingdom; [3]Pulmonary Vascular Disease Unit, Royal Hallamshire Hospital, Sheffield, United Kingdom; [4]Academic Unit of Respiratory Medicine, University of Sheffield, Sheffield, United Kingdom

1452. Robust 3D MRI of the Mouse Lung Using ZTE Imaging with Background Correction

Markus Weiger[1], Mingming Wu, [12], Moritz Christoph Wurnig[3], David Kenkel[3], Wolfgang Jungraithmayr[4], Andreas Boss[3], Klaas Paul Pruessmann[1]
[1]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [2]Institute of Biomedical Engineering, Karlsruhe Institute of Technology, Karlsruhe, Germany; [3]Institute for Diagnostic and Interventional Radiology, University Hospital Zurich, Zurich, Switzerland; [4]Division of Thoracic Surgery, University Hospital Zurich, Zurich, Switzerland

1453. Longitudinal MRI of Progressive Pulmonary Fibrosis in a Transgenic, TGF-Alpha-Induced Mouse Model

Zackary I. Cleveland[1], R. Scott Dunn[2], Cynthia R. Davidson[3], Jinbang Guo[1, 4], Jason C. Woods[1, 5], William D. Hardie[3]
[1]Center for Pulmonary Imaging Research, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States; [2]Imaging Research Center, Department of Radiology, Cincinnati Children's Hospital Medical Center, OH, United States; [3]Division of Pulmonary Medicine, Cincinnati Children's Hospital Medical Center, OH, United States; [4]4) Department of Physics, , Washington University, St. Louis, MO, United States; [5]4) Department of Physics, Washington University, St. Louis, MO, United States

1454. Pulmonary MRI of Infants in the Neonatal Intensive Care Unit: Initial Experience with 3D Radial UTE

Andrew D. Hahn[1], Nara S. Higano[2, 3], Laura L. Walkup[2], Xuefeng Cao[2, 4], Robert P. Thomen[2, 3], Jean A. Tkach[5], Charles L. Dumoulin[6, 7], Kevin M. Johnson[1], Scott K. Nagle[1, 8], Jason C. Woods[2, 3], Sean B. Fain[1, 8]
[1]Department of Medical Physics, University of Wisconsin - Madison, Madison, WI, United States; [2]Center for Pulmonary Imaging Research, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States; [3]Department of Physics, Washington University in St Louis, St. Louis, MO, United States; [4]Department of Physics, University of Cincinnati, Cincinnati, OH, United States; [5]Department of Radiology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States; [6]Imaging Research Center - Department of Radiology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States; [7]Department of Pediatrics, University of Cincinnati, Cincinnati, OH, United States; [8]Department of Radiology, University of Wisconsin - Madison, Madison, WI, United States

1455. A Double Echo Ultra Short Echo Time Acquisition for Respiratory Motion Suppressed High Resolution Imaging of the Lung

Jean Delacoste[1, 2], Jerome Chaptinel[1, 2], Catherine Beigelman[1], Davide Piccini[3, 4], Alain Sauty[5, 6], Matthias Stuber[1, 2]

[1]Department of Radiology, University Hospital (CHUV) and University of Lausanne (UNIL), Lausanne, Switzerland; [2]Center for Biomedical Imaging (CIBM), Lausanne, Switzerland; [3]Department of Radiology, Center for Biomedical Imaging (CIBM) and University Hospital (CHUV), Lausanne, Switzerland; [4]Advanced Clinical Imaging Technology, Siemens Healthcare IM BM PI, Lausanne, Switzerland; [5]Adult CF multisites unit, Hospital of Morges, Morges, Switzerland; [6]Service of Pneumology, Department of Medicine, University Hospital (CHUV), Lausanne, Switzerland

1456. Ultra-Fast Steady-State Free Precession Pulse Sequence for Pulmonary Fourier Decomposition MRI

Grzegorz Bauman[1], Orso Pusterla[1], Oliver Bieri[1]
[1]Division of Radiological Physics, Department of Radiology, University of Basel Hospital, Basel, Basel-Stadt, Switzerland

1457. ^{19}F/^{1}H MR Molecular Imaging Following Anti-Angiogenic Therapy in a Translatable Preclinical Asthma Model

Anne Schmieder[1], Jochen Keupp[2], Huiying Zhang[3], Todd Williams[3], John Stacy Allen[3], Xiaoxia Yang[3], Erik Storrs[3], Krishna Paranandi[3], Elizabeth Wagner[4], Gregory Lanza[3]
[1]Washington University Medical School, St Louis, MO , United States; [2]Philips Research Europe, Hamburg, Germany; [3]Washington University Medical School, St Louis, MO, United States; [4]Johns Hopkins School of Medicine, Baltimore, MD, United States

1458. Utility of T1-PETRA Sequence in the Evaluation of Neonatal Airways

Noriko Aida[1], Kumiko Nozawa[1], Yuta Fujii[1], Mikako Enokizono[1], Masahiko Sato[2], Koki Kusagiri[2], Yasutake Muramoto[2], Yuichi Suzuki[2], Jun Shibasaki[3], Katsuaki Toyoshima[3], Katsutoshi Murata[4], David Grodzki[5]
[1]Radiology, Kanagawa Children's Medical Center, Yokohama, Kanagawa, Japan; [2]Radiological technology, Kanagawa Children's Medical Center, Yokohama, Kanagawa, Japan; [3]Neonatology, Kanagawa Children's Medical Center, Yokohama, Kanagawa, Japan; [4]Research & Collaboration, Imaging &Therapy System, Siemens Japan, Tokyo, Japan; [5]Magnetic Resonace, Siemens Healthcare, Erlangen, Bavaria, Germany

1459. Detection of Chronic Allograft Dysfunction Using Ventilation-Weighted Fourier Decomposition Lung MRI

Andreas Voskrebenzev[1, 2], Lena Becker[1, 2], Marcel Gutberlet[1, 2], Christian Schönfeld[1, 2], Julius Renne[1, 2], Jan Hinrichs[1, 2], Till Kaireit[1, 2], Tobias Welte, [23], Frank Wacker[1, 2], Jens Gottlieb, [23], Jens Vogel-Claussen[1, 2]
[1]Institute of Diagnostic and Interventional Radiology, Medical School Hanover, Hanover, Germany; [2]German Centre for Lung Research, Hanover, Germany; [3]Department of Pneumology, Medical School Hanover, Hanover, Germany

1460. Self-Gating of Respiratory Motion for Pulmonary Ultra Short Echo Time MRI of Infants in the NICU

Andrew D. Hahn[1], Xuefeng Cao[2, 3], Nara S. Higano[2, 4], Jean A. Tkach[5], Robert P. Thomen[2, 4], Scott K. Nagle[1, 6], Gregory Lee[2], Kevin M. Johnson[1], Sean B. Fain[1, 6], Jason C. Woods[2, 4]
[1]Department of Medical Physics, University of Wisconsin - Madison, Madison, WI, United States; [2]Center for Pulmonary Imaging Research, Cincinnati Children’s Hospital Medical Center, Cincinnati, OH, United States; [3]Department of Physics, University of Cincinnati, Cincinnati, OH, United States; [4]Department of Physics, Washington University in St Louis, St. Louis, MO, United States; [5]Department of Radiology, Cincinnati Children’s Hospital Medical Center, Cincinnati, OH, United States; [6]Department of Radiology, University of Wisconsin - Madison, Madison, WI, United States

1461. A 19F - 1H Linear Dual Tuned RF Birdcage Coil for Rat Lung Imaging at 3T

Gowtham Gajawada[1, 2], Tao Li[1], Marcus J. Couch[1, 2], Matthew S. Fox[3, 4], Mitchell Albert[1, 2]
[1]Thunder Bay Regional Research Institute, Thunder Bay, Ontario, Canada; [2]Lakehead University , Thunder Bay, Ontario, Canada; [3]Robarts Research Institute, London, Ontario, Canada; [4]Department of Medical Biophysics, Western University, London, Ontario, Canada

1462. Lung Imaging at Ultra-High Magnetic Fields in Rodents

Marta Tibiletti[1], Detlef Stiller[2], Volker Rasche[1], Andrea Bianchi[2]
[1]Core Facility Small Animal MRI, Ulm University, Ulm, Baden-Württemberg, Germany; [2]Target Discovery Research, In-vivo imaging laboratory, Boehringer Ingelheim Pharma GmbH & Co. KG, Baden-Württemberg, Germany

1463. Perfluorohexane Liquid MRI of Mouse Lungs in a Dual-Tuned ^{1}H/^{19}F Coil

Alexandr A. Khrapitchev[1], James R. Larkin[1], Stavros Melemenidis[1], Konstantinos Papoutsis[2], Peter Thelwall[3], Nicola R. Sibson[1]

[1]CRUK and MRC Oxford Institute for Radiation Oncology, Department of Oncology, University of Oxford, Oxford, United Kingdom; [2]Department of Engineering Science, University of Oxford, Oxford, United Kingdom; [3]Newcastle Magnetic Resonance Centre, Newcastle University, Newcastle, United Kingdom

1464. T_2' Relaxometry of the Human Lung at 1.5 and 3 Tesla
Jascha Zapp[1], Sebastian Domsch[1], Lothar R. Schad[1]
[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany

1465. *In Vivo* Assessment of Non-Small Cell Lung Cancer: Detection of Early Response to Concurrent Chemoradiotherapy by Using T1 Based Dynamic Contrast Enhanced MRI
Xiuli Tao[1], Han Ouyang[1], Li Liu[1], Feng Ye[1], Ying Song[1], Zihua Su[2], Xiao Xu[2], Ning Wu[1]
[1]Department of Diagnostic Radiology, Cancer Hospital Chinese Academy of Medical Sciences, Beijinh, Beijing, China; [2]GE Healthcare, Beijing, China

1466. Dynamic 3D MRI of the Whole Lung Using Constrained Reconstruction with Learned Dictionaries
Sampada Bhave[1], Sajan Goud Lingala[2], John Newell[1], Alejandro Comellas[1], Mathews Jacob[1]
[1]University of Iowa, Iowa City, IA, United States; [2]Electrical Engineering, University of Southern California, Los Angeles, CA, United States

1467. Respiratory Self-Gating Using 3D Half-Echo Stack-Of-Stars TrueFISP (TrueSTAR)
Grzegorz Bauman[1], Oliver Bieri[1]
[1]Division of Radiological Physics, Department of Radiology, University of Basel Hospital, Basel, Basel-Stadt, Switzerland

1468. Ultrashort Echo Time Magnetic Resonance Imaging of the Lung Using a High-Relaxivity T1 Blood-Pool Contrast Agent
Joris Tchouala Nofiele[1], Weiran Cheng[2], Inga E. Haedicke[2], Tameshwar Ganesh[1], Xiao-an Zhang[2], Hai-Ling Margaret Cheng, [13]
[1]Hospital for Sick Children, Toronto, Ontario, Canada; [2]Chemistry, University of Toronto, Toronto, Ontario, Canada; [3]Institute of Biomaterials & Biomedical Engineering, University of Toronto, Toronto, Ontario, Canada

1469. 3D Ultrashort TE (UTE) MRI Repeatability Within the Thorax and Its Application to Pulmonary Fibrosis.
Alexander Weller[1], Sharon L. Giles[2], Veronica A. Morgan[2], David Collins[1], David M. Higgins[3], Nandita M. de-Souza[1]
[1]CRUK Cancer Imaging Centre, Institute of Cancer Research, Sutton, Surrey, United Kingdom; [2]MRI Department, Royal Marsden Hospital, Sutton, Surrey, United Kingdom; [3]Clinical Science, Philips Healthcare, Guildford, Surrey, United Kingdom

1470. Regional Measurements of Pulmonary Strain Index Using a Low Field Portable Device
Mikayel Dabaghyan[1], Iga Muradyan[2, 3], Alan Hrovat[1], James P. Butler[2, 3], Angelos Kyriazis[2, 3], Mirko I. Hrovat[1], Samuel Patz[2, 3]
[1]Mirtech, Inc., Boston, MA, United States; [2]Brigham & Women's Hospital, Boston, MA, United States; [3]Harvard Medical School, Boston, MA, United States

1471. Can Baseline T1-DCE-MRI Perfusion and Permeability Parameters Predict Concurrent Chemoradiotherapy Response in Patients of NSCLC?
Xiuli Tao[1], Han Ouyang[1], Li Liu[1], Feng Ye[1], Ying Song[1], Xiao Xu[2], Zihua Su[2], Ning Wu[1]
[1]Department of Diagnostic Radiology, Cancer Hospital Chinese Academy of Medical Sciences, Beijinh, Beijing, China; [2]GE Healthcare, Beijing, China

1472. Imaging Chronic Rejection in Mouse Lung Allografts with ^{1}H MRI
Jinbang Guo[1, 2], Xingan Wang[3], Anne K. Perl[4], Zackary I. Cleveland[1], Randy Giaquinto[5], Andrew E. Gelman[3], Jason C. Woods[1, 2]

[1]Center for Pulmonary Imaging Research, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States; [2]Department of Physics, Washington University in St. Louis, St. Louis, MO, United States; [3]Department of Surgery, Washington University in St. Louis, St. Louis, MO, United States; [4]Division of Pulmonary Biology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States; [5]Imaging Research Center, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States

1473. Volumetric Non-Contrast Pulmonary Perfusion Using Pseudo-Continuous Arterial Spin Labeling
Joshua S. Greer[1, 2], Xinzeng Wang[2], Ivan Pedrosa[2, 3], Ananth J. Madhuranthakam[2, 3]
[1]Bioengineering, UT Dallas, Dallas, TX, United States; [2]Radiology, UT Southwestern, Dallas, TX, United States; [3]Advanced Imaging Research Center, UT Southwestern, Dallas, TX, United States

1474. Free Breathing 3D Lung Imaging Using Self-Gating with an Efficient Sampling Scheme
Cord Bastian Meyer[1], Stefan Weick[2], Michael Völker[3], Frederick Mantel[2], Felix Breuer, [13], Peter Michael Jakob[1, 3]
[1]Experimental Physics 5, University of Würzburg, Würzburg, Bavaria, Germany; [2]Department of Radiation Oncology, University Hospital Würzburg, Würzburg, Bavaria, Germany; [3]Research Center Magnetic Resonance Bavaria e. V. (MRB), Würzburg, Bavaria, Germany

1475. Multi-Stage Three-Dimensional UTE Lung Imaging by Image-Based Self-Gating
Marta Tibiletti[1], Jan Paul[2], Andrea Bianchi[3], Stefan Wundrak[2], Wolfgang Rottbauer[2], Detlef Stiller[3], Volker Rasche, [12]
[1]Core Facility Small Animal MRI, Ulm University, Ulm, Baden-Württemberg, Germany; [2]Internal Medicine II, University Hospital Ulm, Ulm, Baden-Württemberg, Germany; [3]Target Discovery Research, In-vivo imaging laboratory, Boehringer Ingelheim Pharma GmbH & Co. KG, Baden-Württemberg, Germany

1476. Breath-Hold UTE Lung Imaging Using a Stack-Of-Spirals Acquisition
John P. Mugler, III[1], Samuel W. Fielden[2], Craig H. Meyer[2], Talissa A. Altes[1], G. Wilson Miller[1], Alto Stemmer[3], Josef Pfeuffer[3], Berthold Kiefer[3]
[1]Radiology & Medical Imaging, University of Virginia, Charlottesville, VA, United States; [2]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [3]Siemens Healthcare, Erlangen, Germany

1477. Pulmonary Imaging of Acute Lung Injury in Mice with ZTE
Iga Muradyan[1], Raja-Elie Abdulnour[2, 3], Angelos Kyriazis[1], Samuel Patz[4], Bruce Levy[2, 5]
[1]Department of Radiology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, United States; [2]Pulmonary and Critical Care Medicine, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, United States; [3]Center for Experimental Therapeutics and Reperfusion Injury, Department of Anesthesiology,, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, United States; [4]Department of Radiology, Brigham and Women's Hospital, Harvard Medical School , Boston, MA, United States; [5]Center for Experimental Therapeutics and Reperfusion Injury, Department of Anesthesiology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, United States

1478. Static Lung Volumes Assessed on MRI with Spirometry Control in Comparison to Body-Plethysmography
Yanping Sun[1], Christian M. Lo Cascio[1], Firas S. Ahmed[2], Meghaq A. Parikh[1], Yongqiang Tan[2], Binsheng Zhao[2], Robert C. Basner[1], Paul Enright[3], Martin R. Prince[4], R Graham Barr[1]
[1]Medicine, Columbia University Medical Center, New York, NY, United States; [2]Radiology, Columbia University Medical Center, New York, NY, United States; [3]Medicine, University of Arizona, Tucson, AZ, United States; [4]Radiology, Cornell University Medical Center, New York, NY, United States

1479. Ultra-Short Echo Time MRI Measurements of Emphysema Using Principal Component Analysis
Khadija Sheikh[1, 2], Dante Capaldi[1, 2], Sarah Svenningsen[1, 2], David G. McCormack[3], Grace Parraga[1, 2]
[1]Imaging Research Laboratories, Robarts Research Institute, London, Ontario, Canada; [2]Department of Medical Biophysics, The University of Western Ontario, London, Ontario, Canada; [3]Division of Respirology, Department of Medicine, The University of Western Ontario, London, Ontario, Canada

1480. Pulmonary Nodule/Mass Assessment by Computed Diffusion-Weighted Imaging with High B-Value: How to Improve the Detection and Differentiation Capability with Acquired Diffusion-Weighted Imaging
Hisanobu Koyama[1], Yoshiharu Ohno[1], Shinichiro Seki[1], Takeshi Yoshikawa[1], Sumiaki Matsumoto[1], Katsusuke Kyotani[2], Masao Yui[3], Hitoshi Yamagata[3], Kazuro Sugimura[1]
[1]Radiology, Kobe University Graduate School of Medicine, Kobe, Hyogo, Japan; [2]Kobe University Hospital, Kobe, Hyogo, Japan; [3]Toshiba Medical Systems Corporation, Otawara, Tochigi, Japan

1481. How Volume Affects the Pulmonary MRI Signal: Investigations with 3D Ultra-Fast Balanced Steady-State Free Precession
Orso Pusterla[1], Oliver Bieri[1], Gregor Sommer[2], Grzegorz Bauman[1]
[1]Radiological Physics, Department of Radiology, University of Basel Hospital, Basel, Switzerland; [2]Clinic of Radiology and Nuclear Medicine, Department of Radiology, University of Basel Hospital, Basel, Switzerland

1482. First Clinical Lung MRI Using an Active Breathing Coordinator
Evangelia Kaza[1], David J. Collins[1], Richard Symonds-Tayler[1], Fiona McDonald[2], Helen A. McNair[3], Erica Scurr[2], Dow-Mu Koh[2], Martin O. Leach[1]
[1]CR-UK Cancer Imaging Centre, Institute of Cancer Research London and Royal Marsden Hospital, London, United Kingdom; [2]The Royal Marsden NHS Foundation Trust, London, United Kingdom; [3]Department of Radiotherapy, Royal Marsden NHS Foundation Trust and Institute of Cancer Research, Sutton, United Kingdom

1483. Clinical Feasibility of 3D Ultra-Fast Balanced Steady-State Free Precession MRI of the Lung in Patients with Severely Limited Breath-Holding Capability
Gregor Sommer[1], Mark Wiese[2], Nicolin Hainc[1], Jens Bremerich[1], Oliver Bieri[3], Grzegorz Bauman[3]
[1]Clinic of Radiology and Nuclear Medicine, University of Basel Hospital, Basel, Switzerland; [2]Clinic of Thoracic Surgery, University of Basel Hospital, Basel, Switzerland; [3]Clinic of Radiology and Nuclear Medicine - Radiological Physics, University of Basel Hospital, Basel, Switzerland

1484. Proton Perfusion Maps from Time Series of the Pulmonary Vasculature
Samuel Patz[1, 2], Iga Muradyan[1, 2], Ritu R. Gill[1, 2], Ravi T. Seethamraju[3], Aaron B. Waxman[1, 2], James P. Butler[1, 2]
[1]Brigham and Women's Hospital, Boston, MA, United States; [2]Harvard Medical School, Boston, MA, United States; [3]Siemens Medical Systems, Boston, MA, United States

Traditional Poster
Hyperpolarized Gas Imaging
Exhibition Hall Tuesday 10:00-12:00

1485. Integrated Spectroscopic Imaging (CSI) and Chemical Shift Saturation Recovery (CSSR) of Hyperpolarized ^{129}Xe in the Human Lungs
Neil James Stewart[1], Jim Michael Wild[1]
[1]Academic Unit of Radiology, University of Sheffield, Sheffield, South Yorkshire, United Kingdom

1486. Hyperpolarized ^{129}Xe Dissolved-Phase MR Spectroscopy in Mice Changes with Lung Cancer Progression
Rohan S. Virgincar[1], Simone Degan[2, 3], Matthew S. Freeman[4], Mu He[5], Bastiaan Driehuys[3]
[1]Biomedical Engineering, Duke University, Durham, NC, United States; [2]Center for Molecular and Biomolecular Imaging, Duke University, Durham, NC, United States; [3]Radiology, Duke University Medical Center, Durham, NC, United States; [4]Medical Physics Graduate Program, Duke University, Durham, NC, United States; [5]Electrical and Computer Engineering, Duke University, Durham, NC, United States

1487. Optimized Gridding Reconstruction for 3D Radial MRI of Hyperpolarized ^{129}Xe
Scott H. Robertson[1], Rohan S. Virgincar[2], Mu He[3], S. Sivaram Kaushik[2], Matthew S. Freeman[1], Bastiaan Driehuys[4]
[1]Medical Physics Graduate Program, Duke University, Durham, NC, United States; [2]Department of Biomedical Engineering, Duke University, Durham, NC, United States; [3]Department of Electrical and Computer Engineering, Duke University, Durham, NC, United States; [4]Radiology, Duke University Medical Center, Durham, NC, United States

1488. Gas Uptake Measures on Hyperpolarized Xenon-129 MRI Are Inversely Proportional to Lung Inflation Level

Kun Qing[1], Nicholas J. Tustison[1], Tallisa A. Altes[1], Kai Ruppert[1, 2], Jaime F. Mata[1], G. Wilson Miller[1], Steven Guan[1], Iulian C. Ruset[3, 4], F. William Hersman[3, 4], John P. Mugler, III[1]
[1]University of Virginia, Charlottesville, VA, United States; [2]Cincinnati Children's Hospital, OH, United States; [3]Xemed LLC, NH, United States; [4]University of New Hampshire, NH, United States

1489. *In Vivo* Dynamic Measurement of Pulmonary Blood Oxygenation and Cardiac Output Using Hyperpolarised ^{129}Xe

Graham Norquay[1], Neil Stewart[1], Jim Wild[1]
[1]University of Sheffield, Sheffield, South Yorkshire, United Kingdom

1490. Optimal Glass Forming Solvent and Photo-Induced Radicals Yield 129Xe Hyperpolarization Via Sublimation-DNP to Biomedical Imaging Standards

Andrea Capozzi[1], Christophe Roussel[2], Arnaud Comment[1], Jean-Noel Hyacinthe[3]
[1]Institute of Physics of Biological Systems, EPFL, Lausanne, Vaud, Switzerland; [2]Section of Chemistry and Chemical Engineering, Institute of Chemical Sciences and Engineering, EPFL, Lausanne, Vaud, Switzerland; [3]University of Applied Sciences and Arts Western Switzerland, Geneva, Switzerland

1491. ^{129}Xe Dynamic Spectroscopy and Modelling: A Repeatability and Method Comparison Study

Neil James Stewart[1], Helen Marshall[1], Jim Michael Wild[1]
[1]Academic Unit of Radiology, University of Sheffield, Sheffield, South Yorkshire, United Kingdom

1492. Mapping ^{129}Xenon ADC of Radiation-Induced Lung Injury at Low Magnetic Field Strength Using a Sectoral Approach

Krzysztof Wawrzyn[1, 2], Alexei Ouriadov[1], Elaine Hegarty[1], Susannah Hickling[3], Giles Santyr[1, 4]
[1]Imaging Research Laboratories, Robarts Research Institute, London, Ontario, Canada; [2]Department of Medical Biophysics, Western University, London, Ontario, Canada; [3]Department of Medical Physics, McGill University, Montreal, Quebec, Canada; [4]The Peter Gilgan Centre for Research and Learning, The Hospital for Sick Children, Toronto, Ontario, Canada

1493. Effect of RF Pulse Repetition Time on Gas Transfer for Dissolved Hyperpolarized ^{129}Xe MRI

Brandon Zanette[1, 2], Matthew S. Fox[3], Ozkan Doganay, [34], Elaine Hegarty, [23], Giles E. Santyr, [12]
[1]Department of Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [2]Peter Gilgan Centre for Research and Learning, The Hospital for Sick Children, Toronto, Ontario, Canada; [3]Robarts Research Institute, London, Ontario, Canada; [4]Department of Medical Biophysics, University of Western Ontario, London, Ontario, Canada

1494. Regional Mapping of Gas Uptake by Lung Tissue and Blood in Subjects with COPD Using Hyperpolarized Xenon-129 MRI

Kun Qing[1], Talissa A. Altes[1], Y. Michael Shim[1], Nicholas J. Tustison[1], Kai Ruppert[1, 2], Chengbo Wang[1, 3], Jaime F. Mata[1], G. Wilson Miller[1], Steven Guan[1], Iulian C. Ruset[4, 5], F. William Hersman[4, 5], John P. Mugler, III[1]
[1]University of Virginia, Charlottesville, VA, United States; [2]Cincinnati Children's Hospital , OH, United States; [3]The University of Nottingham Ningbo China, Zhejiang, China; [4]Xemed LLC, NH, United States; [5]University of New Hampshire, NH, United States

1495. Investigation of an Animal Model of Pulmonary Fibrosis - *Ex Vivo* Lung MRI Using a Perfluorocarbon Compound as a Contrast Agent for Hyperpolarized ^{129}Xe

Clementine Lesbats[1], Anthony Habgood[2], David ML Lilburn[3], Joseph S. Six[4], Gisli Jenkins[2], Galina E. Pavlovskaya[1], Thomas Meersmann[1]
[1]Sir Peter Mansfield Imaging Centre, University of Nottingham, Nottingham, United Kingdom; [2]School of Medicine, University of Nottingham, Nottingham, United Kingdom; [3]Clinical Research Imaging Centre, University of Edinburgh, Edinburgh, United Kingdom; [4]Carestream Health Inc., White City, OR, United States

1496. T2* and Frequency Shift Maps of Healthy and CF Subjects

Steven Guan[1], Kun Qing[1], Tally Altes[1], John Mugler III[1], Iulian Ruset[2, 3], Deborah Froh[1], Grady Miller[1], James Brookeman[1], Jaime Mata[1]
[1]University of Virginia, Charlottesville, VA, United States; [2]University of New Hampshire, NH, United States; [3]Xemed LLC, NH, United States

1497. Hyperpolarized ^{129}Xe Imaging of the Lung Using Spiral IDEAL
Ozkan Doganay[1, 2], Trevor Wade[2], Elaine Hegarty[2], Krzysztof Wawrzyn[2], Rolf F. Schulte[3], Charles McKenzie[1, 2], Giles Santyr, [24]
[1]Western University, London, Ontario, Canada; [2]Robarts Research Institute, London, Ontario, Canada; [3]GE Global Research, Munich, Germany; [4]Peter Gilgan Centre for Research and Learning, Toronto, Ontario, Canada

1498. Validation of ^{129}Xe Diffusion MRI as a Measure of Airspace Enlargement in Human Lungs
Robert Paul Thomen[1, 2], James D. Quirk[3], David Roach[1], Tiffany Egan-Rojas[1], Kai Ruppert[1], Iulian Ruset[4], Talissa Altes[5], Dmitriy Yablonskiy[3], Jason C. Woods[1, 2]
[1]Center for Pulmonary Imaging, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States; [2]Physics, Washington University in St Louis, St Louis, MO, United States; [3]School of Medicine, Washington University in St Louis, St Louis, MO, United States; [4]XeMed, LLC, Durham, NH, United States; [5]Radiology, University of Virginia Hospital Medical Center, VA, United States

1499. Evaluation of Radiation-Induced Lung Injury by Hyperpolarized Xenon
Zhiying Zhang[1], Haidong Li[1], Xianping Sun[1], Xiuchao Zhao[1], Chaohui Ye[1], Xin Zhou[1]
[1]National Center for Magnetic Resonance in Wuhan, Wuhan Institute of Physics and Mathematics, Chinese Academy of Sciences, Wuhan, Hubei, China

1500. Multi Nuclear 3D Multiple Breath Washout Imaging with ^{3}He and ^{129}Xe Using a Dual Tuned Coil
Felix C. Horn[1], Madhwesha Rao[1], Neil J. Stewart[1], Helen Marshall[1], Juan Parra-Robles[1], Jim M. Wild[1]
[1]Academic Radiology, University of Sheffield, Sheffield, United Kingdom

1501. Comparing Pulmonary MRI Using Inert Fluorinated Gases and Hyperpolarized ^{3}He: Is ^{19}F MRI Good Enough?
Marcus J. Couch[1, 2], Iain K. Ball[2], Tao Li[2], Matthew S. Fox[3, 4], Birubi Biman[5, 6], Mitchell S. Albert[1, 2]
[1]Lakehead University, Thunder Bay, Ontario, Canada; [2]Thunder Bay Regional Research Institute, Thunder Bay, Ontario, Canada; [3]Robarts Research Institute, London, Ontario, Canada; [4]Department of Medical Biophysics, Western University, London, Ontario, Canada; [5]Thunder Bay Regional Health Sciences Centre, Thunder Bay, Ontario, Canada; [6]Northern Ontario School of Medicine, Thunder Bay, Ontario, Canada

1502. Feasibility of Hyperpolarized Helium-3 MRI-Guided Bronchoscopic Assessment of Emergent Ventilation Defect Regions in Asthma
David G. Mummy[1], Robert P. Thomen[2], Stanley J. Kruger[3], Alfonso Rodriguez[3], Robert V. Cadman[3], Nizar N. Jarjour[4], Loren C. Denlinger[4], Ronald L. Sorkness[4, 5], Mark L. Schiebler[6], Jason C. Woods[7], Sean B. Fain[3, 6]
[1]Biomedical Engineering, University of Wisconsin - Madison, Madison, WI, United States; [2]Physics, Washington University in St. Louis, St. Louis, MO, United States; [3]Medical Physics, University of Wisconsin - Madison, Madison, WI, United States; [4]Allergy, Pulmonary & Critical Care Medicine, Department of Medicine, University of Wisconsin - Madison, Madison, WI, United States; [5]Pharmacy, University of Wisconsin - Madison, Madison, WI, United States; [6]Radiology, University of Wisconsin - Madison, Madison, WI, United States; [7]Pediatrics, University of Cincinnati, Cincinnati, OH, United States

1503. Rapid Tracheal Flow Measurements During Forced Inhalation and Exhalation
Kai Ruppert[1, 2], Bora Sul[3], Kun Qing[2], Vineet Rakesh[3], Craig H. Meyer[2], John P. Mugler III[2], Anders Wallqvist[3], Michael J. Morris[4], Talissa A. Altes[2], Jaques Reifman[3]
[1]Cincinnati Children's Hospital, Cincinnati, OH, United States; [2]University of Virginia, Charlottesville, VA, United States; [3]Department of Defense Biotechnology High Performance Computing Software Applications Institute, United States Army Medical Research and Materiel Command, Fort Detrick, MD, United States; [4]Department of Medicine, San Antonio Military Medical Center, Fort Sam Houston, TX, United States

1504. **Ventilation-Perfusion Analysis with Co-Registered Hyperpolarized Gas and CE ^{1}H Perfusion MRI**
Paul J.C. Hughes[1], Bilal A. Tahir[1, 2], Felix C. Horn[1], Helen Marshall[1], Rob H. Ireland[1, 2], James M. Wild[1]
[1]Academic Unit of Radiology, University of Sheffield, Sheffield, South Yorkshire, United Kingdom; [2]Academic Unit of Clinical Oncology, University of Sheffield, Sheffield, South Yorkshire, United Kingdom

1505. **Approaching the Theoretical Limit for ^{129}Xe Hyperpolarisation with Continuous-Flow Spin-Exchange Optical Pumping**
Graham Norquay[1], Neil Stewart[1], Jim Wild[1]
[1]University of Sheffield, Sheffield, South Yorkshire, United Kingdom

1506. **Anatomical Distribution of Fractional Ventilation and Oxygen Uptake Imaged by Multibreath Wash-In Helium-3 MRI in Human Subjects**
Hooman Hamedani[1], Stephen Kadlecek[1], Yi Xin[1], Hoora Shaghaghi[1], Sarmad Siddiqui[1], Milton Rossman[2], Rahim R. Rizi[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Medicine, University of Pennsylvania, Philadelphia, PA, United States

1507. **A Volume Saddle Coil for Hyperpolarized ^{129}Xe Lung Imaging**
Wolfgang Loew[1], Robert Thomen[2], Ron Pratt[1], Zackary Cleveland[2], Charles Dumoulin[1], Jason Woods[2], Randy O. Giaquinto[1]
[1]Imaging Research Center, Cincinnati Children’s Hospital Medical Center, Cincinnati, OH, United States; [2]Center for Pulmonary Imaging Research, Cincinnati Children’s Hospital Medical Center, Cincinnati, OH, United States

Traditional Poster
Hepatobilliary

Exhibition Hall Tuesday 10:00-12:00

1508. **Postprandial Hepatic Glycogen Levels Following a Low V High Glycaemic Index Breakfast: A ^{13}C MRS Study**
S Bawden[1, 2], MC Stephenson[3], K Hunter[4], M Taylor[5], L Marciani[1], PG Morris[2], IA Macdonald[6], GP Aithal[1], PA Gowland[2]
[1]NIHR Nottingham Digestive Diseases Biomedical Research Unit, Nottingham University Hospitals NHS Trust and University of Nottingham, Nottingham, United Kingdom; [2]Sir Peter Mansfield Imaging Centre, University of Nottingham, Nottingham, United Kingdom; [3]Agency for Science, Technology and Research, Singapore; [4]Unilever Discover, Bedfordshire, United Kingdom; [5]Faculty of Human Nutrition, University of Nottingham, United Kingdom; [6]School of Life Sciences, University of Nottingham, United Kingdom

1509. **2D Localized COSY for the Quantification of Omega-3 PUFA Content in Oil Phantoms and *In Vivo* in Rat Liver**
Sharon Janssens[1], Marina D.B. Sabbadini[1], Klaas Nicolay[1], Jeanine J. Prompers[1]
[1]Biomedical NMR, Eindhoven University of Technology, Eindhoven, Noord-Brabant, Netherlands

1510. **A 7 Day Low V High Glycaemic Index Diet Reduces Liver Fat Content**
S Bawden[1, 2], M Stephenson[3], K Hunter[4], M Taylor[5], PG Morris[2], L Marciani[1], IA Macdonald[6], GP Aithal[1], PA Gowland[2]
[1]NIHR Nottingham Digestive Diseases Biomedical Research Unit, Nottingham University Hospitals NHS Trust and University of Nottingham, Nottingham, United Kingdom; [2]Sir Peter Mansfield Imaging Centre, University of Nottingham, Nottingham, United Kingdom; [3]Agency for Science, Technology and Research, Singapore; [4]Unilever Discover, Bedfordshire, United Kingdom; [5]Faculty of Human Nutrition, University of Nottingham, United Kingdom; [6]School of Life Sciences, University of Nottingham, United Kingdom

1511. **The Role of IVIM and Chemical Shift Imaging in Detecting Early Hepatic Complications of Diabetes Mellitus Type 2**
Sonia Isabel Goncalves[1, 2], Filipe Caseiro Alves[2, 3], Miguel Castelo Branco[1, 2]
[1]Institute for Biomedical Imaging and Life Sciences, Coimbra, Portugal; [2]Faculty of Medicine, University of Coimbra, Coimbra, Portugal; [3]Radiology, University Hospital Coimbra, Coimbra, Portugal

1512. Oral Lipid Challenge: The Effects of Saturated Fat on Hepatic Gluconeogenesis, ATP Production, and Fat Accumulation in Healthy Humans
Paul Begovatz[1], Sabine Kahl[1, 2], Peter Nowotny[1], Bettina Nowotny[1, 2], Michael Roden[1, 2]
[1]Leibniz Center for Diabetes Research at Heinrich Heine University, Institute for Clinical Diabetology, German Diabetes Center, Düsseldorf, Germany; [2]University Hospital, Department of Endocrinology and Diabetology, Düsseldorf, Germany

1513. High SNR Improves the Repeatability of Proton Density Fat Fraction Measurements in the Liver
Utaroh Motosugi[1, 2], Diego Hernando[1], Peter Bannas[1, 3], Scott B. Reeder[1, 4]
[1]Radiology, University of Wisconsin, Madison, WI, United States; [2]Radiology, University of Yamanashi, Yamanashi, Japan; [3]Radiology, University Hospital Hamburg-Eppendorf, , Hamburg, Germany; [4]Medical Physics, University of Wisconsin, Madison, WI, United States

1514. Evaluation of Novel Multi Echo MRS and MRI Sequences for Iron and Fat Overload Quantification at 3T in One Breath-Hold
Anita Kiani[1], Elise Bannier[1], Giulio Gambarota[2, 3], Hervé Saint-Jalmes[2, 3], Yves Gandon[1]
[1]Radiology, University Hospital of Rennes, Rennes, France; [2]INSERM, UMR 1099, Rennes, France; [3]Université de Rennes 1, LTSI, Rennes, France

1515. Effect of Gadolinum on Hepatic Fat Quantification Using Multi-Echo Reconstruction Technique with T2* Correction and Estimation
MINGMEI GE[1], JING ZHANG[2], ZIHENG ZHANG[2], XINHUAI WU[1]
[1]The Military General Hospital of Beijing PLA,, Beijing, China; [2]GE Healthcare China, Beijing, China

1516. Feasibility of MR Elastography of the Liver in Obese Patients at Risk for NAFLD
Curtis N. Wiens[1], Alan B. McMillan[1], Nathan S. Artz[1, 2], Rashmi Agni[3], Nikolaus Szeverenyi[4], William Haufe[4], Catherine Hooker[4], Meng Yin[5], Guilherme M. Campos[6], Claude Sirlin[4], Scott B. Reeder[1, 7]
[1]Department of Radiology, University of Wisconsin, Madison, WI, United States; [2]Department of Radiological Sciences, St. Jude Children's Research Hospital, Memphis, TN, United States; [3]Department of Pathology, University of Wisconsin, Madison, WI, United States; [4]Department of Radiology, University of California, San Diego, CA, United States; [5]Department of Radiology, Mayo Clinic, Rochester, MN, United States; [6]Department of Surgery, University of Wisconsin, Madison, WI, United States; [7]Department of Medical Physics, University of Wisconsin, Madison, WI, United States

1517. Dual Echo, PDFF and MDIXON Compared to ^{1}H-MRS for Fat Fraction Estimation: Only PDFF Can Accurately Measure Low Fat Fractions.
Jurgen Henk Runge[1], Ulrich H. Beuers[2], Aart J. Nederveen[1], Jaap Stoker[1]
[1]Radiology, Academic Medical Center, Amsterdam, Noord-Holland, Netherlands; [2]Gastroenterology & Hepatology, Academic Medical Center, Amsterdam, Noord-Holland, Netherlands

1518. Effect of Gd-EOB-DTPA on T1-Weighted Dual Echo In-Phase and Opposed-Phase MR Images for Focal Liver Lesion Detection
Jin Wang[1], Lin Luo[2], Yunhong Shu[3], Hong Shan[4], Bingjun He[1]
[1]The Third Affiliated Hospital of Sun Yat-Sen University, Guangzhou, Guangdong, China; [2]The University of Hong Kong-Shenzhen Hospital, Guangdong, China; [3]Mayo Clinic, MN, United States; [4]The Third Affiliated Hospital of Sun Yat-Sen University , Guangzhou, Guangdong, China

1519. Effect of Conventional Gadolinium Contrast Agents on IDEAL Based Hepatic Fat-Fraction Measurements
Florine SW van der Wolf - de Lijster[1], Andrew J. Patterson[1], Martin J. Graves[1], David J. Lomas[1]
[1]Department of Radiology, Addenbrooke's Hospital and University of Cambridge, Cambridge, United Kingdom

1520. Intravoxel Incoherent Motion Diffusion-Weighted Imaging and Texture Heterogeneity for Staging of Hepatic Fibrosis in Children
WEIMIN AN[1], JING ZHANG[2], HUI XIE[1]
[1]department of radiology, 302 military hospital of china, Beijing, China; [2]GE Healthcare China, Beijing, China

1521. Inter-Observer Agreement of Liver Biopsy and Liver MR Elastography
Jun Chen[1], Meng Yin[1], Jayant Talwalkar[1], Kevin Glaser[1], Thomas Smyrk[1], Richard Ehman[1]
[1]Mayo Clinic, Rochester, MN, United States

1522. Evaluation of Liver Stiffness in Constrictive Pericarditis
Bogdan Dzyubak[1], Eric R. Fenstad[2], Jae K. Oh[1], Eric E. Williamson[1], James Glockner[1], Phillip M. Young[1], Richard L. Ehman[1], Philip A. Araoz[1], Sudhakar K. Venkatesh[1]
[1]Radiology, Mayo Clinic, Rochester, MN, United States; [2]Cardiovascular Diseases, Mayo Clinic, Rochester, MN, United States

1523. Revisiting the Potential of Alternating Repetition Time Balanced Steady State Free Precession Imaging in the Abdomen at 3T
Oliver J. Gurney-Champion[1, 2], Remy Klaassen[3, 4], Jaap Stoker[1], Arjan Bel[2], Hanneke W.M. van Laarhoven[5], Aart J. Nederveen[1], Sonia I. Goncalves[6]
[1]Radiology, Academic Medical Center, Amsterdam, Netherlands; [2]Radiation Oncology, Academic Medical Center, Amsterdam, Netherlands; [3]Department of Medical Oncology , Academic Medical Center, Amsterdam, Netherlands; [4]Laboratory for Experimental Oncology and Radiobiology , Academic Medical Center, Amsterdam, Netherlands; [5]Department of Medical Oncology, Academic Medical Center, Amsterdam, Netherlands; [6]Institute for Biomedical Imaging and Life Sciences, University of Coimbra, Coimbra, Portugal

1524. Comparison of Navigated DISCO Dynamic Imaging with Rotated Slab Excitation to Current Standard for Post-Contrast Imaging in Pediatric MR Enterography
Dean Kolnick[1], Kang Wang[2], Andrew Phelps[1], Pauline Worters[2], John Mackenzie[1], Jesse Courtier[1]
[1]Department of radiology and biomedical imaging, UCSF, San Francisco, CA, United States; [2]GE Healthcare, CA, United States

1525. Comparison of CAIPIRINHA-VIBE, Radial-VIBE, and Conventional VIBE for Free-Breathing Dynamic Contrast-Enhanced MRI (DCE-MRI): A Preliminary Study
Nieun Seo[1], Seong Joon Park[1], Bohyun Kim[1], Chang Kyung Lee[1], Jisuk Park[1], In Seong Kim[2], Berthold Kiefer[3]
[1]Asan Medical Center, Ulsan University College of Medicine, Seoul, Korea; [2]Siemens Healthcare, Seoul, Korea; [3]Siemens Healthcare, Erlangen, Germany

ISMRM MERIT AWARD magna cum laude

1526. Simultaneous Acquisition Sequence for High Accuracy Whole Liver Perfusion Quantification(SAHA)
Jia Ning[1], Bida Zhang[2], Honsum Li[1], Dan Zhu[1], Feng Huang[2], Shuo Chen[1], Peter Koken[3], Jouke Smink[4], Huijun Chen[1]
[1]Center for Biomedical Imaging Research, Biomedical Engineering, School of Medicine, Tsinghua University, Beijing, China; [2]Philips Research China, Beijing, China; [3]Innovative Technologies, Research Laboratories, Philips Technologie GmbH, Hamburg, Germany; [4]Philips Healthcare, MR Clinical Science, Best, Netherlands

1527. Distinguishing Early and Progressed HCC Using Texture Analysis Using Gadoxetic Acid-Enhanced Hepatobiliary Phase Image
Morisaka Hiroyuki[1], Utaro Motosugi[1, 2], Shintaro Ichikawa[1], Katsuhiro Sano[1], Tomoaki Ichikawa[1], Masayuki Nakano[3], Hiroshi Onishi[1]
[1]Department of Radiology, University of Yamanashi, Chuo, Yamanashi, Japan; [2]Department of Radiology, University of Wisconsin, Madison, WI, United States; [3]Department of Pathology, Shonan Fujisawa Tokushukai Hospital, Kanagawa, Japan

1528. Hypoenhancing Liver Lesion on Both Portovenous and Delayed Phase Gadobutrol and Gadofosveset-Enhanced MRI as a Sign of Malignancy in the Diagnosis of Colorectal Liver Metastases (CRLM)
Helen Cheung[1], Paul Karanicolas[2], Chirag Patel[1], Natalie Coburn[2], Masoom A. Haider[1], Calvin Law[2], Laurent Milot[1]

[1]Medical Imaging, Sunnybrook Health Sciences Centre, Toronto, ON, Canada; [2]Surgery, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada

1529. Prospect of Hypovascular Hepatocellular Nodules Showing Hyper-Intensity Only in the Hepatobiliary Phase of Gd-EOB-DPTA Enhanced Magnetic Resonance Imaging in Cirrhosis or Chronic Hepatitis
Atsushi Higaki[1], Tsutomu Tamada[1], Akira Yamamoto[1], Yasufumi Noda[1], Kazuya Yasokawa[1], Katsuyoshi Ito[1]
[1]Radiology, Kawasaki Medical School, Kurashiki city, Okayama, Japan

1530. Phospholipidosis Affects Hepatobiliary Function as Assessed by Gadoxetate DCE-MRI
Stephen Lenhard[1], Debra Paul[2], Mally Lev[3], Lindsey Webster[4], Christopher Goulbourne[5], Richard Peterson[5], Richard Miller[6], Beat Jucker[1]
[1]Pre-clinical and Translational Imaging, GlaxoSmithKline, King of Prussia, PA, United States; [2]LAS, GlaxoSmithKline, King of Prussia, PA, United States; [3]DMPK, GlaxoSmithKline, King of Prussia, PA, United States; [4]DMPK, GlaxoSmithKline, Research Triangle Park, NC, United States; [5]Safety Assesment, GlaxoSmithKline, Research Triangle Park, NC, United States; [6]LAS, GlaxoSmithKline, Research Triangle Park, NC, United States

1531. Efficient Fat Suppression by Slice-Selection Gradient Reversal in Stimulated Echo Diffusion Weighted Liver Imaging
Hui Zhang[1], Ed X. Wu[2, 3], Hua Guo[1]
[1]Center for Biomedical Imaging Research, Department of Biomedical Engineering, School of Medicine, Tsinghua University, Beijing, China; [2]Laboratory of Biomedical Imaging and Signal Processing, The University of Hong Kong,, Hong Kong SAR, China; [3]Department of Electrical and Electronic Engineering, The University of Hong Kong,, Hong Kong SAR, China

1532. Correlation of Histological and IVIM-Derived Measures of Vascularity in Hypo- And Hypervascularized Pancreatic Lesions
Miriam Klauss[1], Philipp Mayer[1], Klaus Maier-Hein[2], Frank Bergmann[3], Thilo Hackert[4], Lars Grenacher[1], Bram Stieltjes[5]
[1]Diagnostic and Interventional Radiology, University hospital Heidelberg, Heidelberg, Baden-Württemberg, Germany; [2]DKFZ, Heidelberg, Baden-Württemberg, Germany; [3]Pathology, University of Heidelberg, Baden-Württemberg, Germany; [4]Surgery, University hospital Heidelberg, Baden-Württemberg, Germany; [5]Radiology, University hospital Basel, Basel, Switzerland

1533. Navigated 3D MRCP with Compressed Sensing
Scott A. Reid[1], Kevin F. King[2], Florine van der Wolf-de Lijster[3], Martin J. Graves[3], Lloyd Estkowski[2], David J. Lomas[3]
[1]GE Healthcare, Chalfont St Giles, United Kingdom; [2]GE Healthcare, Waukesha, WI, United States; [3]Radiology, Addenbrooke's Hospital & University of Cambridge, Cambridge, Cambridgeshire, United Kingdom

1534. Use of Enhanced T2 Star-Weighted Angiography (ESWAN) to Distinguish Severity of Liver Cirrhosis
CHUNMEI MA[1], Ailian Liu[1], YE LI[1], LIHUA CHEN[1], HEQING WANG[1]
[1]The first affiliated hospital of Dalian medical university, Dalian, Liaoning, China

1535. T1ρ Relaxation of the Liver; Comparison of the Continuous Wave and Stretched Type Adiabatic Hyperbolic Scant (HS) Pulses for the Assessment of Liver Function
Yukihisa Takayama[1], Akihiro Nishie[2], Yoshiki Asayama[2], Kousei Ishigami[2], Yasuhiro Ushijima[2], Daisuke Okamoto[2], Nobuhiro Fujita[2], Koichiro Morita[2], Tomoyuki Okuaki[3], Hiroshi Honda[2]
[1]Department of Radiology Informatics and Network, Kyushu University, Graduate School of Medical Sciences, Fukuoka, Japan; [2]Department of Clinical Radiology, Kyushu University, Graduate School of Medical Sciences, Fukuoka, Japan; [3]Philips Healthcare APAC, Tokyo, Japan

1536. The Prevalence and Natural History of Pancreatic Cysts in Autosomal Dominant Polycystic Kidney Disease
Jin Ah Kim[1], Jon D. Blumenfeld[2, 3], Silvina P. Dutruel[1], Nanda Deepa Thimmappa Deepa Thimmappa[1], Warren O. Bobb[2], Stephanie Donahue[2], Ashley E. Giambre[4], Martin R. Prince[1]

[1]Radiology, Weill Cornell Medical College, New York, United States; [2]The Rogosin Institute, NY, United States; [3]Medicine, Weill Cornell Medical College, NY, United States; [4]Healthcare Policy and Research, Weill Cornell Medical College, NY, United States

1537. Aortic Pulse Wave Velocity Measured Using4D-Flow MRI in Patients with Portal Hypertension
Matthew R. Smith[1], Alejandro Roldan-Alzate[1], Oliver Wieben[1, 2], Scott B. Reeder[1, 2], Christopher J. Francois[1]
[1]Radiology, University of Wisconsin, Madison, WI, United States; [2]Medical Physics, University of Wisconsin, Madison, WI, United States

1538. Accelated Non-Contrast-Enhanced MR Portography with Undersampled K-Space Using Compressed Sensing Reconstruction
Hiroyoshi Isoda[1], Koji Fujimoto[1], Shigeki Arizono: [1], Akihiro Furuta[1], Takayuki Yamamoto[1], Yasutaka Fushimi[1], Aki Kido[1], Kaori Togashi[1], Naotaka Sakashita[2]
[1]Kyoto University Graduate School of Medicine, Kyoto, Japan; [2]Toshiba Medical Systems Corporation MRI Systems Division, Otawara, Tochigi, Japan

Traditional Poster
Renal, Pelvis & Fetal

Exhibition Hall Tuesday 10:00-12:00

1539. Preliminary Application of Diffusion Kurtosis Imaging in the Diagnosis of Prostate Cancer
Jing Guo-dong[1], Wang Li[1], Wang Jian[1], LU Jian-ping[1]
[1]Chang Hai Hospital, Shang Hai, China

1540. High-Resolution Computed DWI with High B-Value: A Preliminary Study for Improving Prostate Cancer Detection at 3T MR System
Yoshiko Ueno[1], Satoru Takahashi[2], Yoshiharu Ohno[2, 3], Katsusuke Kyotani[4], Masao Yui[5], Yoshimori kassai[5], Kazuhiro Kitajima[6], Kazuro Sugimura[1]
[1]Department of Radiology, Kobe University Graduate School of Medicine, Kobe, Hyogo, Japan; [2]Department of Radiology, Kobe University Graduate School of Medicine, Hyogo, Japan; [3]Advanced Biomedical Imaging Research, Kobe University Graduate School of Medicine, Hyogo, Japan; [4]Division of Radiology, Kobe University Hospital, Hyogo, Japan; [5]MRI Systems Development Department, Toshiba Medical Systems Corp, Tochigi, Japan; [6]Department of Radiology, Hyogo College of Medicine, Hyogo, Japan

1541. Multi-B-Value Diffusion Weighted Imaging Acquired on a 3T MR Scanner: Comparison of the Apparent Diffusion Coefficient in Prostate Cancer Detection and the Contribution of B-Value Images in ADC Map Interpretation.
Thomas de Perrot[1], Bénédicte M A Delattre[1], Lindsey A. Crowe[2], Iris Friedli[1], Marc Pusztaszeri[3], Jean-Christophe Tille[3], Christophe Iselin[4], Jean-Paul Vallée[1]
[1]Division of Radiology, Geneva University Hospital, Geneva, Switzerland; [2]Division of Radiology , Geneva University Hospital, Geneva, Switzerland; [3]Division of Clinical Pathology, Geneva University Hospital, Geneva, Switzerland; [4]Division of Urologic Surgery, Geneva University Hospital, Geneva, Switzerland

1542. Characterisation of Placental Diffusion in Twin Pregnancies Using Diffusion-Weighted Magnetic Resonance Imaging
Soha Said Ramadan[1], Pablo Caro Dominguez[1, 2], Jorge H. Davila[1, 2], Melissa Valdez Quintana[1, 2], Julie Hurteau-Miller[1, 2], David Grynspan, [23], Felipe Moretti, [24], Elka Miller[1, 2]
[1]Department of Radiology, Children's Hospital of Eastern Ontario, Ottawa, Ontario, Canada; [2]Department of Diagnostic Imaging, University of Ottawa, Ottawa, Ontario, Canada; [3]Department of Pathology, Children's Hospital of Eastern Ontario, Ottawa, Ontario, Canada; [4]Department of Obstetrics, Gynecology and Newborn Care, The Ottawa Hospital, Ottawa, Ontario, Canada

1543. A Novel Non-Invasive MRI Tool for Quantification of Placental Oxygen Transport *In Vivo*
ISMRM MERIT AWARD summa cum laude
Reut Avni[1], Joel Garbow[2], Michal Neeman[1]
[1]Biological Regulation, Weizmann Institute of Science, Rehovot, Israel; [2]Biomedical MR laboratory, Mallinckrodt Institute of Radiology, Washington University, St. Louis, MO, United States

1544. Intravoxel Incoherent Motion Diffusion-Weighted MR Imaging of the Placenta: Evaluation of Perfusion Changes in the Supine and Left Lateral Decubitus Positions

Skorn Ponrartana[1], Sherin U. Devaskar[2], Jonathan M. Chia[3], Vidya Rajagopalan[4], Hollie A. Lai[1], David Miller[5], Vicente Gilsanz[1]
[1]Radiology, Children's Hospital Los Angeles, Los Angeles, CA, United States; [2]Pediatrics, University of California, Los Angeles, Los Angeles, CA, United States; [3]Philips Healthcare, Cleveland, OH, United States; [4]Radiology, Children's Hospital Los Angeles, CA, United States; [5]Obstetrics and Gynecology, University of Southern California, CA, United States

1545. An Anthropomorphic MR Phantom of the Gravid Abdomen Including the Uterus, Placenta, Fetus and Fetal Brain.

Pablo Garcia-Polo[1], Borjan Gagoski[2], Bastien Guerin[3], Eric Gale[3], Elfar Adalsteinsson[4, 5], P. Ellen Grant[2], Lawrence L. Wald[3, 5]
[1]Martinos Center, MGH, M+Visión Advanced Fellowship, Charlestown, MA, United States; [2]Fetal-Neonatal Neuroimaging & Developmental Science Center, Boston Children's Hospital, Harvard Medical School, Boston, MA, United States; [3]Department of Radiology, A. A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA, United States; [4]Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA, United States; [5]Harvard-MIT Health Sciences and Technology, Cambridge, MA, United States

1546. Comparison of US and MR Measurement of Fetal Biometrics at 28-32 Weeks with a Real-Time MR Sequence

Nicholas Hilliard[1], Rebecca Baker[1], Andrew Patterson[1], Martin Graves[1], Christoph Lees[2], Pat Set[1], David J. Lomas[1]
[1]Department of Radiology, Cambridge University Hospitals NHS Foundation Trust, Cambridge, Cambridgeshire, United Kingdom; [2]Department of Maternofetal Medicine, Imperial College Healthcare NHS Trust, London, United Kingdom

1547. High Resolution NMR Parameter Mapping of a CS23 Chemically Fixed Human Embryo at 9.4 T

Katsumi Kose[1], Yosuke Otake[1], Akiyoshi Nagata[1], Tomoyuki Haishi[2], Shigehito Yamada[3]
[1]Institute of Applied Physics, University of Tsukuba, Tsukuba, Ibaraki, Japan; [2]MRTechnology Inc., Tsukuba, Ibaraki, Japan; [3]Kyoto University, Kyoto, Japan

1548. Comparison of Uterine Artery Pulsatility and Resistivity Indices Using Magnetic Resonance Imaging and Doppler Ultrasound

Rebecca Hawkes[1], Andrew Patterson[2], Andrew Priest[2], Martin J. Graves[2], Nicholas Hilliard[2], Patricia Set[1], David Lomas[1]
[1]Radiology, Addenbrooke's Hospital, Cambridge, Cambridgeshire, United Kingdom; [2]Radiology, Addenbrooke's Hospital, Cambridge, United Kingdom

1549. Study of the Correlation Between Fetus Ages and Ossification Center of Atlanto-Axial Vertebrae Using MRI

Hui Zhao[1], Tianyi Qian[2], Yong Wu[1], Shuwei Liu[3], Lianxiang Xiao[1], Xiangtao Lin[1, 4]
[1]Shandong Medical Imaging Research Institute, Shandong University, Jinan, Shandong, China; [2]MR Collaborations NE Asia, Siemens Healthcare, Beijing, China; [3]China Research Center for Sectional and Imaging Anatomy, School of Medicine, Shandong University, Shandong, China; [4]China Research Center for Sectional and Imaging Anatomy, School of Medicine, Shandong University , Shandong, China

1550. Decidualized Adenomyosis: MR Imaging Findings Including Diffusion-Weighted Imaging

Mayumi Takeuchi[1], Kenji Matsuzaki[1], Masafumi Harada[1]
[1]Department of Radiology, University of Tokushima, Tokushima, Japan

1551. Multiparametric MRI Characterization of Funaki Sub-Types of Uterine Fibroids Considered for MRI-Guided High-Intensity Focused Ultrasound (MR-HIFU) Therapy

Sajan Andrews[1], Qing Yuan[1], April Bailey[1], Naira Muradyan[2], Robert Staruch[1, 3], Rajiv Chopra[1, 4], Ivan Pedrosa[1, 4]
[1]Radiology, UT Southwestern Medical Center, Dallas, TX, United States; [2]iCAD Inc, Nashua, NH, United States; [3]Philips Research, Briarcliff Manor, NY, United States; [4]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States

1552. Importance of Intravenous Contrast Administration to Improve the Diagnostic Accuracy of Preoperative MRI for Uterine Leiomyosarcoma
Gigin Lin[1], Yu-Ting Huang[1], Koon-Kwan Ng[1], Shu-Hang Ng[1]
[1]Department of Medical Imaging and Intervention, Chang Gung Memorial Hospital and Institute for Radio, Chang Gung Memorial Hospital and Chang Gung University, Linkou, Taoyuan, Taiwan

1553. Computed Diffusion-Weighted Imaging for Differentiating Decidualized Endometrioma from Ovarian Cancer
Mayumi Takeuchi[1], Kenji Matsuzaki[1], Masafumi Harada[1]
[1]Department of Radiology, University of Tokushima, Tokushima, Japan

1554. Comprehensive Diagnostic Strategy for Cystic Masses in the Female Pelvis with Advanced MR Techniques
Mayumi Takeuchi[1], Kenji Matsuzaki[1], Masafumi Harada[1]
[1]Department of Radiology, University of Tokushima, Tokushima, Japan

1555. MR Imaging Features of Ovarian Fibroma, Fibrothecoma and Thecoma
Sung Bin Park[1], Jong Beum Lee[1], Hyun Jeong Park[1]
[1]Chung-Ang University Hospital, Seoul, Korea

1556. An Interactive Computer-Aided Diagnosis System for Detecting Metastatic Lymph Node in Female Pelvis Based on Diffusion Weighted Imaging
Tiing Yee Siow[1], Yu-Chun Lin[1], Gigin Lin[1]
[1]Department of Medical Imaging and Intervention, Chang Gung Memorial Hospital at Linkou, College of Medicine, Chang Gung University, Taoyuan, Taiwan

1557. Faster and Improved MRI of Rectal Tumors with a Two Sequence Protocol Based on High-Resolution Free-Breathing Post-Contrast 3D SPGR Imaging with Comparison to Standard Care.
Andreas M. Loening[1], Pejman Ghanouni[1], Marcus T. Alley[1], Shreyas S. Vasanawala[1]
[1]Dept. of Radiology, Stanford University, Stanford, CA, United States

1558. Quantification of Sequence Parameter Effect on Geometric Distortions Caused by a Titanium Brachytherapy Applicator
Steven M. Shea[1], Abbie Diak[2], Murat Surucu[2], Matthew Harkenrider[2], Joseph M. Yacoub[1]
[1]Radiology, Loyola University Chicago, Maywood, IL, United States; [2]Radiation Oncology, Loyola University Chicago, Maywood, IL, United States

1559. Increased Speed and Image Quality for Single Shot Fast Spin Echo Imaging in the Pelvis Via Variable Refocusing Flip Angles and Full-Fourier Acquisition
Andreas M. Loening[1], Manojkumar Saranathan[1], Daniel V. Litwiller[2], Ann Shimakawa[2], Lloyd Estkowski[2], Shreyas S. Vasanawala[1]
[1]Dept. of Radiology, Stanford University, Stanford, CA, United States; [2]GE Healthcare Global MR Applications and Workflow, Rochester, MN/Menlo Park, CA, United States

1560. The Capabilities and Limitations of Clinical MRI Sequences for Detecting Kidney Stones. a Retrospective Study
El-Sayed H. Ibrahim[1, 2], Joseph Cernigliaro[2], Mellena Bridges[2], Robert Pooley[2], William Haley[2]
[1]University of Michigan, Ann Arbor, MI, United States; [2]Mayo Clinic, Jacksonville, FL, United States

1561. Assessment of Renal Blood Flow and Oxygenation in Clear Cell Renal Cell Carcinomas Using MRI
Han-Mei Zhang[1], Xiao Lv[2], Pan-Li Zuo[3], Niels Oesingmann[4], Bin Song[1]

[1]Department of radiology, West China Hospital, Sichuan University, Chengdu, Sichuan, China; [2]Department of Urology, West China Hospital, Sichuan University, Chengdu, Sichuan, China; [3]Siemens Healthcare, MR Collaborations NE Asia, Beijing, China; [4]Siemens HC, New York State, United States

1562. Multi-Parametric MRI Evaluation of Chronic Kidney Disease – BOLD & Perfusion MRI

Jon Thacker[1], Huan Tan[2], Lu-Ping Li, [23], Wei Li, [23], Ying Zhou[3], Orly Kohn[2], Stuart Sprague, [23], Pottumarthi Prasad, [23]
[1]Northwestern University, Chicago, IL, United States; [2]University of Chicago, IL, United States; [3]NorthShore University HealthSystem, IL, United States

1563. Non-Invasive Assessment of the Whole Kidney by MOLLI T1 Mapping in Chronic Kidney Disease Patients

Iris Friedli[1], Lindsey Alexandra Crowe[1], Lena Berchtold[2], Solange Moll[3], Karine Hadaya[4], Pierre-Yves Martin[4], Sophie De Seigneux[4], Jean-Paul Vallée[1]
[1]Division of Radiology, Faculty of Medicine, Geneva University Hospital, University of Geneva, Geneva, Switzerland; [2]Division of Internal Medicine, Faculty of Medicine, Geneva University Hospital, University of Geneva, Geneva, Switzerland; [3]Division of Pathology, Faculty of Medicine, Geneva University Hospital, University of Geneva, Geneva, Switzerland; [4]Division of Nephrology, Faculty of Medicine, Geneva University Hospital, University of Geneva, Geneva, Switzerland

1564. Multiparametric MRI Evaluation of Chronic Kidney Disease – BOLD & Diffusion MRI

Lu-Ping Li[1], Wei Li[1], Jon Thacker[1], Huan Tan[1], Ying Zhou[2], Orly Kohn[3], Stuart Sprague[4], Pottumarthi V. Prasad[1]
[1]Center for Advanced Imaging, NorthShore University HealthSystem, Evanston, IL, United States; [2]Center for Biomedical Research & Informatics, NorthShore University HealthSystem, Evanston, IL, United States; [3]Department of Nephrology, University of Chicago, Chicago, IL, United States; [4]Department of Nephrology, NorthShore University HealthSystem, Evanston, IL, United States

1565. Comprehensive Assessment of Renal BOLD MRI Using Multiple Moment Analysis: Application to Subjects with CKD

Jon Thacker[1], Lu-Ping Li[2, 3], Wei Li[2, 3], Stuart Sprague[2, 3], Pottumarthi Prasad[2, 3]
[1]Northwestern University, Chicago, IL, United States; [2]NorthShore University HealthSystem, IL, United States; [3]University of Chicago, IL, United States

1566. Large-FOV High Temporal Resolution Free-Breathing MR Urography Using a Continuous Golden-Angle Radial Acquisition Scheme with Compressed Sensing Reconstruction: Feasibility and Comparison with Standard Cartesian Acquisition

Nainesh Parikh[1], Justin Ream[1], Hoi Cheung Zhang[2], Tobias Block[3], Hersh Chandarana[2], Andrew Rosenkrantz[2]
[1]Radiology, NYU School of Medicine, New York, NY , United States; [2]Radiology, NYU School of Medicine, New York, NY, United States; [3]Radiology, Center for Advanced Imaging Innovation and Research NYU School of Medicine, New York, NY, United States

1567. High Non-Linear Diffusion Fraction Correlates with Histological Fibrosis in Allograft Kidneys

General Leung[1, 2], Nan Jiang[3], Anthony A. Sheen[1], Serge Jothy[4], Darren A. Yuen, [25], Anish Kirpalani[1, 2]
[1]Medical Imaging, St. Michael's Hospital, Toronto, Ontario, Canada; [2]Keenan Research Centre, St Michael's Hospital, University of Toronto, Toronto, Ontario, Canada; [3]Faculty of Medicine, University of Toronto, Toronto, Canada; [4]Department of Pathology, St. Michael's Hospital, Toronto, Ontario, Canada; [5]Division of Nephrology, St Michael's Hospital, Toronto, Ontario, Canada

1568. IVIM-DWI and Non-Contrast MRI of Allograft Kidneys in 48 Hours After Transplantation

Yung Chieh Chang[1], Yi-Ying Wu[1, 2], Jyh-Wen Chai[1], Clayton Chi-Chang Chen[1]
[1]Department of Radiology, Taichung Veterans General Hospital, Taichung City, Taiwan; [2]Department of Medical Imaging and Radiological Sciences, Central Taiwan University of Science and Technology, Taichung City, Taiwan

1569. The Reliability of Magnetic Resonance Elastography (MRE) Using Multislice 2D Spin-Echo Echo-Planar Imaging (SE-EPI) and 3D Inversion Reconstruction for Assessing Renal Stiffness

Gavin Low[1, 2], Nicola Eve Owen[3], Ilse Joubert[1], Andrew J. Patterson[1], Kevin J. Glaser[4], Martin J. Graves[1], Graeme J.M. Alexander[3], David J. Lomas[1]

[1]Radiology, Addenbrooke's Hospital, Cambridge, England, United Kingdom; [2]University of Alberta, Edmonton, Alberta, Canada; [3]Hepatology & Gastroenterology, Addenbrooke's Hospital, Cambridge, England, United Kingdom; [4]Radiology, Mayo Clinic, MN, United States

1570. Visualization of Lupus Nephritis Using SPIO
Ting Chen[1, 2], Yuki Mori[3, 4], Zhenyu Cheng[5, 6], Soyoung Lee[7], Kai Wang[7], Barry Ripley[7], Tadamitsu Kishimoto[7], Chizuko Inui-Yamamoto, [27], Fuminori Sugihara[7], Noriko Kitagaki[7], Yoshiyuki Tago[8], Shinichi Yoshida[8], Kohji Ohno[9], Yoshichika Yoshioka, [67]
[1]Immunology Frontier Research Center (IFReC), Osaka University, , Suita, Osaka, Japan; [2]Center for Information and Neural Networks (CiNet), National Institute of Information and Communications Technology (NICT) and Osaka University, , Suita, , Osaka,, Japan; [3]Immunology Frontier Research Center (IFReC), Osaka University,, Suita, Osaka, Japan; [4]Center for Information and Neural Networks (CiNet), National Institute of Information and Communications Technology (NICT) and Osaka University, , Suita, Osaka, Japan; [5]Immunology Frontier Research Center (IFReC), Osaka University,, Suita, , Osaka, Japan; [6]Center for Information and Neural Networks (CiNet), National Institute of Information and Communications Technology (NICT) and Osaka University, , Suita, , Osaka, Japan; [7]Immunology Frontier Research Center (IFReC), Osaka University,, Suita,, Osaka,, Japan; [8]Biotechnology Development Laboratories, Kaneka Corporation, Takasago, Hyogo, Japan; [9]Institute for Chemical Research, Kyoto University, Uji, Kyoto, Japan

1571. MRI of Perirenal Pathology
James Glockner[1], Christine Lee[1]
[1]Radiology, Mayo Clinic, Rochester, MN, United States

1572. Setup for Quick 2D Glomerular Imaging in a Clinical 3 T MRI System
Jorge Chacon-Caldera[1], Raffi Kalayciyan[1], Lothar R. Schad[1]
[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, BW, Germany

1573. Metabolic Imaging of Renal Triglyceride Content: Validation by Porcine Kidney Biopsies
Paul de Heer[1], Jacqueline T. Jonker[2], Evelien H. van Rossenberg[2], Marten A. Engelse[2], Trea CM Streefland[3], Ton J. Rabelink[2], Andrew G. Webb[1], Patrick CN Rensen[3, 4], Hildo J. Lamb, Aiko PJ de Vries[2]
[1]CJ Gorter Center for High Field MRI, Radiology, Leiden University Medical Center, Leiden, Netherlands; [2]Nephrology, Leiden University Medical Center, Leiden, Netherlands; [3]Endocrinology, Leiden University Medical Center, Leiden, Netherlands; [4]Einthoven Laboratory for Experimental Vascular Medicine, Leiden, Netherlands

1574. Functional Evaluation of Transplanted Kidneys with Reduced Field of View Diffusion-Weighted Imaging at 3 T
Yuan Xie[1], Yanjun Li[1], Dandan Zheng[2], Yong Zhang[3], Guangming Lu[1]
[1]Medical Imaging, Jingling Hospital, School of Medicine, Nanjing University, Nanjing, Jiangsu, China; [2]GE healthcare China, Beijing, China; [3]GE healthcare China, Shanghai, China

1575. Patients with High Blood Pressure Should Avoid Aspirin: Reduced Renal Perfusion in Hypertensive EP4 Knockout Mice
Greg O. Cron[1, 2], Jean-François Thibodeau[1, 2], Gerd Melkus[1, 2], Anthony Carter[2], Ian G. Cameron[1, 2], Nicola Schieda[1, 2], Wael Shabana[1, 2], Chris Kennedy[1, 2]
[1]Ottawa Hospital Research Institute, Ottawa, Ontario, Canada; [2]University of Ottawa, Ottawa, Ontario, Canada

1576. Measurement of Renal Cortical Thickness Using Non-Contrast-Enhanced Steady-State Free Precession (SSFP) MRI with Spatially Selective Ir Pulse: Association with Renal Function
Yasufumi Noda[1], Katsuyoshi Ito[1], Tsutomu Tamada[1], Akira Yamamoto[1], Kazuya Yasokawa[1], Atsushi Higaki[1]
[1]Department of Radiology, Kawasaki Medical School, Kurashiki, Okayama, Japan

1577. Assessment of Renal Allograft Perfusion and Diffusion Using Renal ASL and IVIM
Tao Ren[1], Hua Li Chen[1], Li Pan Zuo[2], Thorsten Feiweier[3], Niels Oesingmann[4], Wen Shen[1]
[1]Department of Radiology, Tianjin First Center Hospital, Tianjin, China; [2]Siemens Healthcare, MR Collaborations NE Asia, Beijing, China; [3]Siemens Healthcare, Erlangen, Germany; [4]Siemens HC, NY, United States

1578. **Quantification and Reproducibility of Single Kidney Function Using DCE-MRI in Healthy Subjects**
Eli Eikefjord[1, 2], Erling Andersen[3], Jan Ankar Monssen[1], Erlend Hodneland[4], Erik Hanson[5], Arvid Lundervold, [14], Jarle Rørvik, [12]
[1]Radiology, Haukeland University Hospital, Bergen, Hordaland, Norway; [2]Clinical Medicine, University of Bergen, Bergen, Hordaland, Norway; [3]Clinical Engineering, Haukeland University Hospital, Bergen, Hordaland, Norway; [4]Biomedicine, University of Bergen, Hordaland, Norway; [5]Mathematics, University of Bergen, Hordaland, Norway

1579. **Application and Analysis of Multi-Echo Sequences for Renal MRI Using EPG**
Sneha Prakash Potdar[1], Manoj G. Bhosale[1, 2], Shivaprasad Ashok Chikop[1], Shaikh Imam[1], Antharikashanagar Bellappa Sachin Anchan[1], Sairam Geethanath[1]
[1]Medical Imaging Research Centre, Dayananda Sagar Institutions, Bangalore, Karnataka, India; [2]BioMedical Instrumentation, Government College of Engineering Pune (COEP), Pune, Maharashtra, India

1580. **Low Field Renal Contrast Optimization with a Portable 0.5T System**
Florian Lietzmann[1], Mathias Düsberg[1], Lothar R. Schad[1]
[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Baden-Württemberg, Germany

1581. **A Simple Method to Optimize Partial Fourier Acquisition Schemes for Glomerular Imaging**
Jorge Chacon-Caldera[1], Lothar R. Schad[1]
[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, BW, Germany

1582. **Robust and Noninvasive Measurement of Renal Perfusion Using Multi-Phase Pseudo-Continuous Arterial Spin Labeling**
William Jeffrey Triffo[1], Youngkyoo Jung[2]
[1]Department of Radiology, Wake Forest School of Medicine, Winston Salem, NC, United States; [2]Departments of Radiology and Biomedical Engineering, Wake Forest School of Medicine, Winston Salem, NC, United States

1583. **Accurate Quantification of Blood Perfusion in the Kidney Using Pseudo-Continuous Arterial Spin Labelling: an Optimisation and Reproducibility Study**
Susie Clarke[1], James F. Meaney[1], Andrew J. Fagan[1]
[1]National Centre for Advanced Medical Imaging (CAMI), St. James's Hospital / Trinity College Dublin, Dublin 8, Ireland

1584. **Urinary ^{1}H NMR-Based Metabolomics Can Distinguish Sub-Fertility Buffalo Bulls**
Virendra Kumar[1], Pawan Kumar[1], Khushpreet Singh[2], N R Jagannaathan[1], Ajeet Kumar[2]
[1]Department of NMR, All India Institute of Medical Sciences, New Delhi, Delhi, India; [2]Department of Veterinary Gynaecology and Obstetrics, College of Veterinary Science, GADVASU, Ludhiana, Punjab, India

1585. **Imaging Features of Leiomyoma in the Genitourinary Tract: Beyond the Uterus**
Sung Bin Park[1]
[1]Chung-Ang University Hospital, Seoul, Korea

1586. **Tracking of Bladder Motion and Gut Peristalsis Using MRI.**
Veerle Kersemans[1], Philip D. Allen[1], John S. Beech[1], Stuart Gilchrist[1], Paul Kinchesh[1], Sean C. Smart[1]
[1]Department of Oncology, University of Oxford, Oxford, OXON, United Kingdom

Traditional Poster
Body DWI, Technical Development & Contrast
Exhibition Hall Tuesday 10:00-12:00

1587. Radioembolization Dosimetry Using Gadoxetate Disodium for Segmentation of the Healthy Liver Parenchyma
Hanke J. Schalkx[1], Jip P. Prince[1], Gerrit H. van de Maat[2], Peter R. Seevinck[3], Clemens Bos[3], Wouter B. Veldhuis[1], Maarten S. van Leeuwen[1], Maurice AAJ van den Bosch[1], Marnix GEH Lam[1], Marijn van Stralen[3]
[1]Radiology and Nuclear Medicine, University Medical Center Utrecht, Utrecht, Netherlands; [2]Quirem Medical BV, Diepenveen, Netherlands; [3]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands

1588. Variable Refocusing Flip Angle Single-Shot Fast Spin Echo of the Bowel, Initial Experience
Daniel V. Litwiller[1], James F. Glockner[2], Ersin Bayram[3]
[1]Global MR Applications and Workflow, GE Healthcare, Rochester, MN, United States; [2]Department of Radiology, Mayo Clinic, Rochester, MN, United States; [3]Global MR Applications and Workflow, GE Healthcare, Houston, TX, United States

1589. Whole-Body Continuously Moving Table Fat Water Imaging with Dynamic ΔB_0 Shimming
Saikat Sengupta[1, 2], David S. Smith[1, 2], E. Brian Welch[1, 2]
[1]Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [2]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States

1590. Application of Mathematical Modelling to a DCE-MRI Phantom: Predicting the Shape of Contrast Agent Uptake Curves.
Laura Smith[1], Marco Borri[1], Araminta EW Ledger[1], Craig Cummings[1], Maria A. Schmidt[1], Martin O. Leach[1]
[1]CR-UK Cancer Imaging Centre, Sutton, Surrey, United Kingdom

1591. Assessment of System Linearity and Response to Input Parameters in a Dynamic Contrast-Enhanced (DCE) MRI Phantom
Laura Smith[1], Araminta EW Ledger[1], Marco Borri[1], Craig Cummings[1], Maria A. Schmidt[1], Martin O. Leach[1]
[1]CR-UK Cancer Imaging Centre, The Institute of Cancer Research and Royal Marsden NHS Foundation Trust, Sutton, Surrey, United Kingdom

1592. Homogeneous Free Whole-Body Lava-Flex Using an Adaptive Center Frequency Technique at 3T
Lizhi Xie[1], Bing Wu[1], Nan Hong[2], Yingkui Zhang[1], Zhenyu Zhou[1]
[1]GE Healthcare China, Beijing, China; [2]Peking University People's Hospital, Beijing, China

1593. Brown Adipose Tissue Thermometry in the Paraventricular Specific Knock-Out Mouse Model at 15.2T
Myriam Diaz Martinez[1], Henry H. Ong[1], Masoud Ghamari-Langroudi[2], Aliya Gifford[1, 3], Roger Cone[2], E Brian Welch[1]
[1]Vanderbilt University Institute of Imaging Science, Vanderbilt University Medical Center, Nashville, TN, United States; [2]Molecular Physiology and Biophysics, Vanderbilt University Medical Center, Nashville, TN, United States; [3]Physical and Chemical Biology Program, Vanderbilt University Medical Center, Nashville, TN, United States

1594. Nonalcoholic Fatty Liver Disease: Correlation of the Liver Parenchyma Fatty Acid with Intravoxel Incoherent Motion MR Imaging-An Experimental Study in Rat Model
Seung-Man Yu[1], Hyeon-Man Baek[2]
[1]Dep. of Radilological Science, Gimchoen University, Gimcheon, Gyeongsangbuk-do, Korea; [2]Center for MR Research, Korea basic Science Institue, Ochang/Chungbuk, Korea

1595. MRI/S Assessment of Cardiac Morphology/Function and Skeletal Muscle Energetics in Mitochondrial DNA Mutated Mice
Hasan Alsaid[1], Mary V. Rambo[1], Tinamarie Skedzielewski[1], Ruth R. Osborn[2], Alicia M Davis M. Davis[2], William Rumsey[2], Beat M. Jucker[1]

[1]Preclinical & Translational Imaging, LAS, PTS, GlaxoSmithKline, King of Prussia, PA, United States; [2]Stress Repair DPU, Respiratory TAU, GlaxoSmithKline, King of Prussia, PA, United States

1596. Safeguarding the Family Jewels: Using MRI to Monitor for Testicular Toxicity
Denise Welsh-McCracken[1], Yvonne Van Gessel[1], Dierdre Scully[2], Jacob Hesterman[2], Paul J. McCracken[1]
[1]Eisai, Andover, MA, United States; [2]InviCRO, Boston, MA, United States

1597. High Field Magnetic Resonance Angiogram of the Mouse Eye
Gangchea Lee[1], Minjung Kim[2], Thomas Neuberger,[1,3]
[1]Biomedical Engineering, Pennsylvania State University, University Park, PA, United States; [2]Biology, Pennsylvania State University, University Park, PA, United States; [3]Huck Institutes of the Life Sciences, Pennsylvania State University, University Park, PA, United States

ISMRM MERIT AWARD magna cum laude

1598. B0 Inhomogeneity Correction of T2* from Fat-Water MRI: Application to a Diet-Induced Obesity Mouse Model at 15.2T
Henry H. Ong[1,2], Corey D. Webb[3], Marnie L. Gruen[3], Alyssa H. Hasty[3], John C. Gore[1,2], E. Brian Welch[1,2]
[1]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States; [2]Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [3]Molecular Physiology and Biophysics, Vanderbilt University School of Medicine, Nashville, TN, United States

1599. Improved IVIM Model Fitting with Non-Rigid Motion Correction
Oscar Gustafsson[1,2], Mikael Montelius[1], Maria Ljungberg[1,2]
[1]Department of Radiation Physics, University of Gothenburg, Göteborg, Sweden; [2]Department of Medical Physics and Biomedical Engineering, Sahlgrenska University Hospital, Göteborg, Sweden

1600. Evaluation of Different Mathematical Models for Diffusion Weighted Imaging of Prostate Cancer Xenografts in Mice
Harri Merisaari[1,2], Hanne Hakkarainen[3], Heidi Liljenbäck[1,4], Helena Ahtinen[1,4], Heikki Minn[5], Matti Poutanen[4,6], Anne Roivainen[1,4], Timo Tiimatainen[7], Ivan Jambor[8]
[1]Turku PET Centre, University of Turku, Turku, Finland; [2]Department of Information Technology, University of Turku, Turku, Finland; [3]Department of Biotechnology and Molecular Medicine, A.I. Virtanen Institute for Molecular Sciences,, Kuopio, Finland; [4]Turku Center for Disease Modeling, University of Turku, Turku, Finland; [5]Department of Oncology and Radiotherapy, Turku University Hospital, Turku, Finland; [6]Department of Physiology, University of Turku, Turku, Finland; [7]Department of Biotechnology and Molecular Medicine, A.I. Virtanen Institute for Molecular Sciences, Kuopio, Finland; [8]Department of Diagnostic Radiology, University of Turku, Turku, Finland

1601. Improved Abdominal Diffusion Weighted Imaging at 3T Using Optimized Shinnar-Le Roux Adiabatic Radiofrequency Pulses
Hadrien Dyvorne[1], Priti Balchandani[1]
[1]Radiology, Icahn School of Medicine at Mount Sinai, New York, NY, United States

ISMRM MERIT AWARD summa cum laude

1602. Clinical Feasibility of Time-Dependent Diffusion MRI for Improved Prostate Cancer Grading
Gregory Lemberskiy[1,2], Dmitry S. Novikov[1], Henry Rusinek[1], Els Fieremans[1], Andrew Rosenkrantz[1]
[1]Bernard and Irene Schwartz Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States; [2]Sackler Institute of Graduate Biomedical Sciences, New York University School of Medicine, New York, NY, United States

ISMRM MERIT AWARD magna cum laude

1603. A Spatially Constrained Probability Distribution Model of Incoherent Motion (SPIM) in Quantitative Diffusion Weighted MRI
Sila Kurugol[1], Moti Freiman[1], Onur Afacan[1], Simon K. Warfield[1]
[1]Radiology, Boston Children's Hospital and Harvard Medical School, Boston, MA, United States

ISMRM MERIT AWARD magna cum laude

1604. Proposal and Evaluation of a Parameter Free Segmented Multistep Algorithm to Assess Diffusion Data with a Combined IVIM-DKI Model
Moritz C. Wurnig[1], David Kenkel[1], Lukas Filli[1], Andreas Boss[1]
[1]Institute of Diagnostic and Interventional Radiology, University Hospital Zurich, Zurich, Switzerland

1605. Readout-Segmented EPI with Simultaneous, Multi-Slice Acceleration for the Rapid Acquisition of High-Resolution, Diffusion-Weighted Images of the Breast
Wei Liu[1], Himanshu Bhat[2], Elisabeth Weiland[3], Dingxin Wang[4], Thomas Beck[3], Stephen F. Cauley[5], David A. Porter[6]
[1]Siemens Shenzhen Magnetic Resonance Ltd., Shenzhen, Guangdong, China; [2]Siemens Medical Solutions USA, Inc., Charlestown, MA, United States; [3]MR Application Development, Siemens Healthcare, Erlangen, Germany; [4]Siemens Medical Solutions USA, Inc., Minneapolis, MN, United States; [5]A.A. Martinos Center for Biomedical Imaging, Dept. of Radiology, MGH, Charlestown, MA, United States; [6]Fraunhofer MEVIS, Institute for Medical Image Computing, Bremen, Germany

1606. Realtime B0 Inhomogeneity Correction in Multi-Station Diffusion Imaging
Maggie M. Fung[1], Wu Gaohong[2], Lloyd Estkowski[3], Dan Xu[2], Scott Hinks[2], Ersin Bayram[4]
[1]Global MR Applications and Workflow, GE Healthcare, New York City, NY, United States; [2]Global MR Applications and Workflow, GE Healthcare, Waukesha, WI, United States; [3]Global MR Applications and Workflow, GE Healthcare, Menlo Park, CA, United States; [4]Global MR Applications and Workflow, GE Healthcare, Houston, TX, United States

1607. A Comparison of Intravoxel Incoherent Motion (IVIM) Fitting Models in the Liver
Alexander D. Cohen[1], Mark D. Hohenwalter[1], Kathleen M. Schmainda[1, 2]
[1]Radiology, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States

1608. Spatially-Constrained Incoherent Motion (SCIM) Model Improves the Robustness of Fast and Slow Diffusion Parameter Estimation from DW-MRI Data in Various Multiple B-Value Acquisition Protocols
Vahid Taimouri[1], Moti Freiman[1], Simon K. Warfield[1]
[1]Radiology, Boston Children's Hospital, Boston, MA, United States

1609. Diffusion-Weighted Imaging Using a Statistical Model as a Functional MRI of the Kidney: Preliminary Experience
Kentaro Yamada[1], Hiroshi Shinmoto[1], Seigo Ito[2], Hiroo Kumagai[2], Tatsumi Kaji[1], Koichi Oshio[3]
[1]Radiology, National Defense Medical College, Tokorozawa, Saitama, Japan; [2]Nephrology and Endocrinology, National Defense Medical College, Saitama, Japan; [3]Diagnostic Radiology, Keio University School of Medicine, Tokyo, Japan

1610. Read-Fly : Homogeneous and Distortion Free Whole Body Diffusion Weighted Imaging at 1.5T and 3 T
Lizhi Xie[1], Bing Wu[1], Ning Wu[2], Xiaocheng Wei[1], Zhenyu Zhou[1]
[1]GE Healthcare China, Beijing, China; [2]Chinese Academy of Medical Sciences Cancer Hospital, Beijing, China

1611. Lesion Detection and Workflow Optimization in Whole Body Diffusion MR Imaging Using Trimodality PET/CT+MR in the Oncology Setting.
James L. Patrick[1], Perry J. Pickhardt[1], Hyungseok Jang[1], Scott B. Perlman[1], Alan B. McMillan[1]
[1]Radiology, University of Wisconsin School of Medicine and Public Health, Madison, WI, United States

1612. Evaluation of Urinary Bladder Cancer on Synthetic FOCUS Diffusion Weighted Imaging
Motoyuki Katayama[1], Takayuki Masui[1], Kimihiko Sato[1], Kei Tsukamoto[1], Kenichi Mizuki[1], Maho Hayashi[1], Tetsuya Wakayama[2], Yuji Iwadate[2]
[1]Radiology, Seirei Hamamatsu General Hospital, Hamamatsu, Shizuoka, Japan; [2]GE Healthcare Japan, HIno, Tokyo, Japan

1613. Evaluation of Endometrial Lesion on Synthetic FOCUS Diffusion Weighted Imaging
Motoyuki Katayama[1], Takayuki Masui[1], Kimihiko Sato[1], Kei Tsukamoto[1], Kenichi Mizuki[1], Maho Hayashi[1], Tetsuya Wakayama[2], Yuji Iwadate[2]
[1]Radiology, Seirei Hamamatsu General Hospital, Hamamatsu, Shizuoka, Japan; [2]GE Healthcare Japan, Hino, Tokyo, Japan

1614. Comparison of Mono-Exponential, Bi-Exponential and Stretched-Exponential Models Derived Parameters in Detecting Renal Cell Carcinomas
Wenhui Wang[1], Degang Ding[2], Dapeng Shi, Yan Bai, xiaoyue ma[3], Meiyun Wang
[1]Radiology, Henan Provincial People¡¯s Hospital, Zhengzhou, Henan, China; [2]Urology, Henan Provincial People¡¯s Hospital, Zhengzhou, Henan, China; [3] Radiology, Zhengzhou University People¡¯s Hospital & Henan Provincial People¡¯s Hospital, Zhengzhou, Henan, China

1615. Abdominal Diffusion Imaging Parameters from Free-Breathing Multiple-Averaged and Finely-Sampled Decay Curves Compared to Acquisition Using Active Breathing Control
Neil Peter Jerome[1], Evangelia Kaza[1], Matthew R. Orton[1], James A. d'Arcy[1], Bernd Kuehn[2], Dow-Mu Koh[3], David J. Collins[1], Martin O. Leach[1]
[1]Radiotherapy & Imaging, The Institute of Cancer Research, Sutton, London, United Kingdom; [2]Healthcare, Siemens AG, Erlangen, Germany; [3]Department of Radiology, Royal Marsden Hospital, Sutton, United Kingdom

1616. Caloric Intake Influence on Hepatic MR Diffusion Measurement
Feifei Qu[1], Pei-Herng Hor[1, 2], Claudio Arena[3], Debra Dees[3], Raja Muthupillar[3]
[1]Physics Department, University of Houston, Houston, TX, United States; [2]Texas Center for Superconductivity, Houston, TX, United States; [3]Diagnostic and Interventional Radiology, St. Luke's Medical Center, Houston, TX, United States

1617. Intravoxel Incoherent Motion MRI of the Healthy Pancreas: Monoexponential and Biexponential Apparent Diffusion Parameters and Age Correlations
Chao Ma[1], Li Liu[1], Jing Li[1], Li Wang[1], Luguang Chen[1], Yanjun Li[1], Yong Zhang[2], Shiyue Chen[1], Jianping Lu[1]
[1]Radiology, Changhai Hospital of Shanghai, Shanghai, China; [2]MR Group, GE Healthcare, Shanghai, China

1618. Multiparametric MR Enterography Without the Use of Antiperistaltic Agents: Performance and Interpretation
Amelia Wnorowski[1], Flavius Guglielmo[1], Robert Ford[1], Donald Mitchell[1]
[1]Thomas Jefferson University, Philadelphia, PA, United States

1619. Small Bowel Stenosis in Crohn's Disease: Characterizing the "STENOSIS" with MR Enterography
Kai Kinder[1], Kenneth Daughters[2], Chris Kuzminski[2]
[1]Santa Barbara Cottage Hospital, Santa Barbara, CA, United States; [2]Santa Barbara Cottage Hospital, CA, United States

1620. Quantified Terminal Ileal Motility as a Biomarker of Crohn's Disease Activity Assessed Using Magnetic Resonance Enterography: A Prospective Study
Alex Menys[1], Charlotte E Tutein Nolthenius[2], Carl Puylaert[2], Makanyanga Jesica[1], Evelien Gryspeerdt[1], Gauraang Bhatnagar[1], Nikos Dikaios[1], David Atkinson[1], Jaap Stoker[2], Stuart A. Taylor[1]
[1]UCL, London, UK, United Kingdom; [2]AMC, Netherlands, Netherlands

1621. Highly Accelerated 4D Radial Single Breathhold Acquisition of the Entire Gastro-Intestinal Tract Using L1 K-T SPIRiT
Vlad Ceregan[1], Jelena Curcic[1, 2], Andreas Steingoetter[1, 2], Sebastian Kozerke[1]
[1]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [2]Division of Gastroenterology and Hepatology, University Hospital Zurich, Zurich, Switzerland

1622. Effect of Weight Loss and Regional Differences in Abdominal Adipose Tissue Hydration

Suresh Anand Sadananthan[1], Navin Michael[1], Eric Yin Hao Khoo[2], Melvin Khee-Shing Leow[1,3], Chin Meng Khoo[2], Kavita Venkataraman[4], Yung Seng Lee[1,5], Yap Seng Chong[1,6], Peter D. Gluckman[1], E. Shyong Tai[2], S. Sendhil Velan[7,8]

[1]Singapore Institute for Clinical Sciences, A*STAR, Singapore; [2]Department of Medicine, Yong Loo Lin School of Medicine , National University of Singapore, Singapore; [3]Department of Endocrinology, Tan Tock Seng Hospital, Singapore; [4]Saw Swee Hock School of Public Health, National University of Singapore, Singapore; [5]Department of Paediatrics, Yong Loo Lin School of Medicine, National University of Singapore, Singapore; [6]Department of Obstetrics & Gynaecology, Yong Loo Lin School of Medicine, National University of Singapore, Singapore; [7]Singapore BioImaging Consortium, A*STAR, Singapore; [8]Clinical Imaging Research Centre, A*STAR, Singapore

1623. Visualizing and Quantifying Human Fat Digestion with IDEAL
Dian Liu[1], Helen Louise Parker[2], Jelena Curcic[1,2], Sebastian Kozerke[1], Andreas Steingoetter[1,2]
[1]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [2]Division of Gastroenterology and Hepatology, University Hospital Zurich, Zurich, Switzerland

1624. Quantification of Brown Adipose Tissue in DIXON Water-Fat Separation and T2* Mapping
Defeng Wang[1], Ka Long Ko[1], Steve CN Hui[1], Lin Shi[2,3], Winnie CW Chu[1]
[1]Dept of Imaging and Interventional Radiology, The Chinese University of Hong Kong, Shatin, NT, Hong Kong; [2]Dept of Medicine and Therapeutics, The Chinese University of Hong Kong, Shatin, NT, Hong Kong; [3]Chow Yuk Ho Technology Centre for Innovative Medicine, The Chinese University of Hong Kong, Shatin, NT, Hong Kong

1625. Fast 3T Whole Body MR Exam Utilizing 2 Point DIXON T1 & T2w and Streamlined Workflow Approach
Lloyd Estkowski[1], Maggie M. Fung[2], Ken-Pin Hwang[3], Ersin Bayram[3]
[1]Global MR Applications and Workflow, GE Healthcare, Menlo Park, CA, United States; [2]Global MR Applications and Workflow, GE Healthcare, New York City, NY, United States; [3]Global MR Applications and Workflow, GE Healthcare, Houston, TX, United States

1626. Improved Retinal Shape Detection Using High-Resolution MRI Compared to Partial Coherence Interferometry
Jan-Willem M. Beenakker[1,2], Mihai State[3], Denis P. Shamonin[4], Marrie van der Mooren[3], Berend C. Stoel[4], Andrew G. Webb[1], Gregorius PM Luyten[2], Patricia Piers[3]
[1]Department of Radiology, C.J.Gorter Center for High Field MRI, Leiden University Medical Center, Leiden, Zuid-Holland, Netherlands; [2]Department of Ophthalmology, Leiden University Medical Center, Leiden, Zuid-Holland, Netherlands; [3]AMO Groningen BV, Groningen, Netherlands; [4]Department of Radiology, devision of Image Processing, Leiden University Medical Center, Leiden, Zuid-Holland, Netherlands

1627. MRI of Aerated Beverages: Intragastric Behaviour and Role in Hunger Suppression
Kathryn Murray[1], Elisa Placidi[1], Ewoud Schuring[2], Caroline Hoad[1], Wieneke Koppenol[2], Luben Arnaudov[2], Wendy Blom[2], Susan Pritchard[1], Simeon Stoyanov[2], David Mela[2], Penny Gowland[1], Robin Spiller[3], Harry Peters[2], Luca Marciani[3]
[1]Sir Peter Mansfield Imaging Centre, Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom; [2]Unilever Research and Development, Unilever, Olivier van Noortlaan 120, 3133 AT Vlaardingen, Netherlands; [3]Nottingham Digestive Diseases Biomedical Research Centre, Nottingham University Hospitals, Nottingham, United Kingdom

1628. Comparison of True Technical Costs of MRI and CT
Alex Lewis[1], Andreas Loening[1], Shreyas Vasanawala[1]
[1]Department of Radiology, Stanford University, Stanford, CA, United States

1629. MRI-Compatible Motion Platform for Studying the Influence of Organ Motion on Body MRI
Joris Nofiele[1], Qing Yuan[1], Quinn Torres[1], Mohammad Kazem[2], Ken Tatebe[1], Ivan Pedrosa[1,3], Rajiv Chopra[1,3]
[1]Radiology, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Imaging Research, Sunnybrook Research Institute, Toronto, Ontatio, Canada; [3]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States

1630. Ratios of Visceral and Subcutaneous Fat Mass Are Linearly Correlated with Aging
In-Young Lee[1], Yunjung Lee[1], Jea Seung Kim[1], Hee-Sook Jun[1], Jong-Hee Hwang[1]
[1]Lee Gil Ya Cancer and Diabetes Institute, Gachon University, Incheon, Korea

Traditional Poster
MR-Guided Focused Ultrasound

Exhibition Hall Tuesday 10:00-12:00

1631. Real-Time 3D Spiral MR Thermometry
Samuel Fielden[1], Xue Feng[1], Wilson Miller[2], Kim Butts Pauly[3], Craig Meyer[1, 2]
[1]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [2]Radiology, University of Virginia, Charlottesville, VA, United States; [3]Radiology, Stanford University, Palo Alto, CA, United States

1632. Detecting Signal Changes in Heated Bone with a 3D Spiral Ultra-Short Echo Time Sequence
Samuel Fielden[1], John Mugler, III[2], Wilson Miller[2], Kim Butts Pauly[3], Craig Meyer[1, 2]
[1]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [2]Radiology, University of Virginia, Charlottesville, VA, United States; [3]Radiology, Stanford University, Palo Alto, CA, United States

1633. Fast Simultaneous Temperature and Displacement Imaging During HIFU Ablation in Swine Liver
Pierre Bour[1], Fabrice Marquet[1], Solenn Toupin[1, 2], Matthieu Lepetit-coiffé[3], Bruno Quesson[1]
[1]L'Institut de RYthmologie et de Modélisation Cardiaque, Bordeaux, Aquitaine, France; [2]SIEMENS-Healthcare, Saint-Denis, Île-de-France, France; [3]SIEMENS-Healthcare, Saint-Denis, Île-de-France, France

1634. MRI-Guided Transurethral Ultrasound Therapy of the Prostate Gland Using Real-Time Thermal Mapping: An Analysis of Technical Accuracy and Immediate Postinterventional Assessment of Tissue Destruction Via CE-MRI
Maya Barbara Müller-Wolf[1], Mathieu Burtnyk[2], Valentin Ionel Popeneciu[3], Gencay Hatiboglu[3], Michele Billia[4], Cesare Romagnoli[5], Joseph Chin[4], Sascha Pahernik[3], Heinz-Peter Schlemmer[6], Matthias C. Roethke[7]
[1]Radiology , German Cancer Research Center, Heidelberg, Baden-Wuerttemberg, Germany; [2]Profound Medical, Toronto, Ontario, Canada; [3]Urology, University Hospital Heidelberg, Heidelberg, Baden-Wuerttemberg, Germany; [4]Urology, Western University UWO London Victoria Hospital, London, Ontario, Canada; [5]Radiology, Western University UWO London Victoria Hospital, London, Ontario, Canada; [6]Radiology, German Cancer Research Center, Baden-Wuerttemberg, Germany; [7]Radiology, German Cancer Research Center, Heidelberg, Baden-Wuerttemberg, Germany

1635. MR Imaging for the Evaluation of Boiling Histotripsy Treatment or Thermal High Intensity Focused Ultrasound Treatment in Mouse Lymphoma
Martijn Hoogenboom[1], Dylan Eikelenboom[2], Martijn H. den Brok[2], Erik Dumont[3], Gosse J. Adema[2], Arend Heerschap[1], Jurgen J. Futterrer[1, 4]
[1]Department of Radiology and Nuclear medicine, Radboud University Medical Center, Nijmegen, Gelderland, Netherlands; [2]Department of Tumor Immunology, Radboud University Medical Center, Nijmegen, Gelderland, Netherlands; [3]Image Guided Therapy, Pessac, France; [4]MIRA Institute for Biomedical Technology and Technical Medicine, University of Twente, Enschede, Overijssel, Netherlands

1636. DCE-MRI Permeability Analysis in Focused Ultrasound-Induced Blood–Brain Barrier Opening: The Association with Mechanical Index
Wen Yen Chai[1, 2], Po Chun Chu[2], Chih Hung Tsai[2], Hao Li Liu[2]
[1]Department of Medical Imaging and Intervention, Chang Gung Memorial Hospital, Guishan, Taoyuan, Taiwan; [2]Department of Electrical Engineering, Chang Gung University, Guishan, Taoyuan, Taiwan

1637. Targeting Effects on the Volume and Gray-To-White-Matter Ratio of the Focused-Ultrasound Induced Blood-Brain Barrier Opening in Non-Human Primates *In Vivo*
Maria Eleni Karakatsani[1], Gesthimani Samiotaki[1], Matthew Downs[1], Vincent Ferrera[2], Elisa Konofagou[1, 3]
[1]Department of Biomedical Engineering, Columbia University, New York, NY, United States; [2]Department of Neuroscience, Columbia University, New York, NY, United States; [3]Department of Radiology, Columbia University, New York, NY, United States

1638. Correlation of Lesion Size to Thermal Dose Measured by MR Thermometry in MR-Guided Focused Ultrasound for the Treatment of Essential Tremor

Yuexi Huang[1], Nir Lipsman[2], Michael L. Schwartz[3], Vibhor Krishna[2], Francesco Sammartino[2], Andres M. Lozano[2], Kullervo Hynynen[1, 4]

[1]Sunnybrook Research Institute, Toronto, ON, Canada; [2]Division of Neurosurgery, Toronto Western Hospital, Toronto, ON, Canada; [3]Division of Neurosurgery, Sunnybrook Health Sciences Centre, Toronto, ON, Canada; [4]Department of Medical Biophysics, University of Toronto, Toronto, ON, Canada

1639. Impact of Gradient-Induced Eddy Currents on Multi-Shot EPI-Based Temperature Map Accuracy in a Transcranial MR Guided Focused Ultrasound Applicator

Silke M. Lechner-Greite[1], Nicolas Hehn[1], Beat Werner[2], Eyal Zadicario[3], Matthew Tarasek[4], Desmond T.B. Yeo[4]

[1]Diagnostics, Imaging and Biomedical Technologies Laboratory, GE Global Research Europe, Garching n. Munich, Germany; [2]Center for MR-Research, Children's Hospital Zurich, Zurich, Switzerland; [3]InSightec Ltd., Tirat Carmel, Israel; [4]Diagnostics, Imaging and Biomedical Technologies Laboratory, GE Global Research Niskayuna, Albany, NY, United States

1640. Expanding the Treatment Envelope for Transcranial MR-Guided Focused Ultrasound with a 256-Element Clinical Transducer

Raag D. Airan[1], Gregory T. Clement[2], Ari Partanen[3], Martin G. Pomper[1], Keyvan Farahani[1, 4]

[1]Radiology and Radiological Science, Johns Hopkins Medical Institutions, Baltimore, MD, United States; [2]Biomedical Engineering, Cleveland Clinic Lerner Research Institute, Cleveland, OH, United States; [3]Clinical Science MR Therapy, Philips Healthcare, Andover, MA, United States; [4]National Cancer Institute, National Institutes of Health, Bethesda, MD, United States

1641. Focal Position Determination in Breast MRgHIFU Using 3 Tracking Coils

Bryant T. Svedin[1, 2], Michael J. Beck, [13], J. Rock Hadley, [14], Robb Merrill[1, 4], Bradley D. Bolster Jr.[5], Dennis L. Parker[1, 4]

[1]Utah Center for Advanced Imaging Research, Salt Lake City, UT, United States; [2]Physics, University of Utah, Salt Lake City, UT, United States; [3]Electrical Engineering, University of Utah, UT, United States; [4]Radiology, University of Utah, Salt Lake City, UT, United States; [5]Siemens HealthCare, Salt Lake City, UT, United States

1642. Open-Source Small-Animal MR-Guided Focused Ultrasound System

Megan E. Poorman[1, 2], Vandiver L. Chaplain, [23], Ken Wilkens[2], Shantanu Majumdar[2], William A. Grissom[1, 2], Charles F. Caskey[1, 2]

[1]Biomedical Engineering, Vanderbilt University, Nashville, TN, United States; [2]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [3]Computational and Physical Biology, Vanderbilt University, Nashville, TN, United States

1643. Comparison of Magnetic Resonance Temperature Imaging for Magnetic Resonance Guided Focused Ultrasound Treatments at 3 and 1.5 T Field Strengths.

Emilee Minalga[1], Robb Merrill[1], Dennis L. Parker[1], Josh DeBever[1], J. Rock Hadley[1], Allison Payne[1]

[1]UCAIR, University of Utah, Salt Lake City, UT, United States

Traditional Poster
Thermotherapy & Thermometry

Exhibition Hall Tuesday 10:00-12:00

1644. MR Compatible Electrode for RF Hyperthermia with Capacitive Coupling: Feasibility Demonstration

Han-Joong Kim[1], Suchit Kumar[1], Jong-Hoon Han[1], Jong-Min Kim[1], Jun-Sik Yoon[1], Seung-Koo Lee[2], Chulhyun Lee[3], Chang-Hyun Oh[1]

[1]Korea University, Seoul, Korea; [2]Unionmedical Corporation, Uijeongbu, Gyeonggi-do, Korea; [3]The MRI Team, Korea Basic Science Institute, Cheongju, Chungcheongbuk-do, Korea

ISMRM MERIT AWARD magna cum laude

1645. A Combined Interventional High-Resolution Targeted Ablation, Thermometry and Imaging Probe

M.Arcan Erturk[1, 2], Shashank Sathyanarayana Hegde[1], Paul A. Bottomley[1]

[1]Radiology, Johns Hopkins University, Baltimore, MD, United States; [2]Center for Magnetic Resonance Research, University of Minnesota Medical School, MN, United States

1646. Comparison of Multi-Contrast MRI for Characterization of Irreversible Electroporation Ablation Zones in a Pig Liver Model with Histopathologic Correlation
Isabel Dregely[1], Kyung Sung[1], Ferdnand Osuagwu[1], Dong Jin Chung[1], Charles Lassman[2], David Lu[1], Holden H. Wu[1]
[1]Radiological Sciences, University of California Los Angeles, Los Angeles, CA, United States; [2]Pathology and Laboratory Medicine, University of California Los Angeles, Los Angeles, CA, United States

1647. Analysis of Respiratory-Induced 3D Deformation of Liver Based on Branching Structure of Portal Vein Obtained with Time-Resolved Volume Acquisitions
Etsuko Kumamoto[1], Tastuhiko Matsumoto[2], Daisuke Kokuryo[3], Kagayaki Kuroda[4, 5]
[1]Information Science and Technology Center, Kobe University, Kobe, Hyogo, Japan; [2]Graduate School of System Informatics, Kobe University, Kobe, Hyogo, Japan; [3]Molecular Imaging Center, National Institute of Radiological Sciences, Chiba, Japan; [4]Graduate School of Engineering, Tokai University, Hiratsuka, Kanagawa, Japan; [5]Center for Frontier Medical Engineering, Chiba University, Chiba, Japan

1648. Relationship Between Temperature and T2 in Subcutaneous Fat and Bone Marrow at 3T
Eugene Ozhinsky[1], Misung Han[1], Serena J. Scott[2], Chris J. Diederich[2], Viola Rieke
[1]Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [2]Radiation Oncology, University of California San Francisco, San Francisco, CA, United States

1649. *In Vivo* Chemical Shift-Compensated MR Thermometry
Pooja Gaur[1, 2], Beat Werner[3], Pejman Ghanouni[4], Rachelle Bitton[4], Kim Butts Pauly[4], William A. Grissom, [25]
[1]Chemical and Physical Biology, Vanderbilt University, Nashville, TN, United States; [2]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [3]Center for MR-Research, University Children's Hospital, Zurich, Switzerland; [4]Radiology, Stanford University, Stanford, CA, United States; [5]Biomedical Engineering, Vanderbilt University, Nashville, TN, United States

1650. Dynamic 3D MR Thermometry in Thoracic Vertebrae Using Controlled Aliasing in Volumetric Parallel Imaging (2D CAIPIRINHA)
Fuyixue Wang[1], Zijing Dong[1], Yuxin Hu[1], Feiyu Chen[1], Shuo Chen[2], Bingyao Chen[3], Jiafei Yang[3], Xing Wei[3], Shi Wang[2], Kui Ying[2]
[1]Department of Biomedical Engineering, Tsinghua University, Beijing, China; [2]Key Laboratory of Particle and Radiation Imaging, Ministry of Education, Department of Engineering Physics, Tsinghua University, Beijing, China; [3]Department of Orthopedics, First Affiliated Hospital of PLA General Hospital, Beijing, China

1651. Dynamical Model Parameter Adjustments in Model Predictive Filtering MR Thermometry
Henrik Odéen[1, 2], Dennis L. Parker[1]
[1]Utah Center for Advanced Imaging Research, Department of Radiology, University of Utah, Salt Lake City, UT, United States; [2]Department of Physics and Astronomy, University of Utah, UT, United States

1652. Using a Double Echo Steady State (DESS) Sequence to Monitor Thermal Treatments
Juan Plata[1, 2], Kristin Granlund[2], Brian Hargreaves[2], Kim Butts Pauly[2]
[1]Bioengineering, Stanford University, Stanford, CA, United States; [2]Radiology, Stanford University, Stanford, CA, United States

1653. Towards Accurate Temperature Mapping in Adipose and Aqueous Tissue with Joint T1 and PRFS Using Balanced SSFP
Mingming Wu[1, 2], Pauline Ferry[3], Tim Sprenger[1, 2], Desmond Teck Beng Yeo[4], Axel Haase[1], Silke Lechner-Greite[2]
[1]IMETUM, Technische Universität München, Garching, Germany; [2]GE Global Research, Garching, Germany; [3]IADI, Nancy, Lorraine, France; [4]GE Global Research, Niskayuna, NY, United States

1654. High Speed, High Sensitivity MR Thermometry Using a Balanced Steady-State Free Precession Pulse Sequence
Yuan Zheng[1], G. Wilson Miller[2]
[1]Physics, University of Virginia, Charlottesville, VA, United States; [2]Radiology and Medical Imaging, University of Virginia, Charlottesville, VA, United States

1655. 3D UTE MR Thermometry of Frozen Tissue During Cryoablation: Clinical Feasibility at 3T
Christiaan G. Overduin[1], Eva Rothgang[2], Jurgen J. Fütterer[1], Tom W.J. Scheenen[1]
[1]Radiology, Radboud University Medical Center, Nijmegen, Netherlands; [2]Siemens Corporate Research, Erlangen, Germany

Traditional Poster
MR-Guided Interventions

Exhibition Hall Tuesday 10:00-12:00

1656. Real-Time Spectral Decomposition Imaging: Moving from Minutes to Seconds
Ethan K. Brodsky[1, 2], Miles E. Olsen[2], Walter F. Block[1, 2]
[1]Medical Physics, University of Wisconsin, Madison, WI, United States; [2]Biomedical Engineering, University of Wisconsin, Madison, WI, United States

1657. A Body-Mounted MRI-Compatible Robot for Needle Interventions Such as Shoulder Arthrography
Reza Monfaredi[1, 2], Emmanuel Wilson[1], Bamshad Azizi Koutenaei[1], Raymond Sze[1], Karun Sharma[1], Kevin Cleary[1]
[1]Sheikh Zayed Institute, Children's National Medical Center, Washington, DC, DC, United States; [2]Industrial department, Azad University- South Tehran Branch, Tehran, Iran

1658. Empirical Investigation of Tools and Imaging Techniques for MRI-Guided Radiotherapy of Lung Cancer
Tatsuya J. Arai[1], Joris Nofiele[2], Yam Ki Cheung[1], Rajiv Chopra[2], Amit Sawant[1]
[1]Radiation Oncology, UT Southwestern Medical Center, Dallas, TX, United States; [2]Radiology, UT Southwestern Medical Center, Dallas, TX, United States

1659. Automated Classification of Vessel Disease Based on High-Resolution Intravascular Multi-Parametric Mapping MRI
Guan Wang[1, 2], M. Arcan Erturk[3], Shashank Sathyanarayana Hegde[2], Paul A. Bottomley[1, 2]
[1]Dept. of Electrical & Computer Engineering, Johns Hopkins University, Baltimore, MD, United States; [2]Russell H. Morgan Dept. of Radiology & Radiological Sciences, Johns Hopkins University, Baltimore, MD, United States; [3]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States

1660. Optimizing Accuracy and Precision of Micro-Coil Localization in Active MR Tracking Under Low SNR Conditions
Barret Daniels[1], Ronald Pratt[2], Randy Giaquinto[1, 2], Charles Dumoulin[1, 2]
[1]Biomedical Engineering, Univsersity of Cincinnati, Cincinnati, OH, United States; [2]Imaging Research Center, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States

1661. Spiral Imaging for Visualization of Commercial Nitinol Guidewires with Reduced Heating
Adrienne E. Campbell-Washburn[1], Toby Rogers[1], Burcu Basar[1, 2], Merdim Sonmez[1], Ozgur Kocaturk[1, 2], Robert J. Lederman[1], Michael S. Hansen[1], Anthony Z. Faranesh[1]
[1]Cardiovascular and Pulmonary Branch, Division of Intramural Research, National Heart Lung and Blood Institute, National Institutes of Health, Bethesda, MD, United States; [2]Institute of Biomedical Engineering, Bogazici University, Istanbul, Turkey

1662. Variable Echotimes in Radial Acquisitions to Achieve a Uniform Artifact for Passive MR Guidewires
Axel Joachim Krafft[1, 2], Simon Reiß[1], Klaus Duering[3], Michael Bock[1]
[1]Radiology - Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]German Cancer Consortium (DKTK), Heidelberg, Germany; [3]MaRVis Medical GmbH, Hannover, Germany

1663. isoPHASOR: Localizing Markers in a Variety of Scan Types Using Its Phase Saddles
Job G. Bouwman[1], Bram A. Custers[1], Chris J.G. Bakker[2], Peter R. Seevinck[1]
[1]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands; [2]Image Sciences Institute, University Medical Center, Utrecht, Netherlands

Traditional Poster
Relaxometry
Exhibition Hall Tuesday 13:30-15:30

1664. Accelerated and Motion-Robust *In Vivo* T_2 Mapping from Radially Undersampled Data Using Bloch-Simulation-Based Iterative Reconstruction
Noam Ben-Eliezer[1, 2], Daniel K. Sodickson[1, 2], Timothy M. Shepherd[1, 2], Graham C. Wiggins[1, 2], Kai Tobias Block[1, 2]
[1]Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States; [2]Center for Advanced Imaging Innovation and Research (CAI2R), Department of Radiology, New York University School of Medicine, New York, NY, United States

1665. Quantitative MR Imaging Method: All of the Main MR Parameters Can Be Obtained in Little More Than a Single Scan
Bruno Madore[1], W. Scott Hoge[1], Tai-Hsin Kuo[2], Cheng-Chieh Cheng[1]
[1]Brigham and Women's Hospital, Harvard Medical School, Boston, MA, United States; [2]Philips Healthcare, Taipei, Taiwan

1666. Paramagnetic Ion Phantom to Independently Tune T1 and T2
Kathryn E. Keenan[1], Karl A. Stupic[1], Elizabeth Horneber[2], Michael Boss[1], Stephen E. Russek[1]
[1]National Institute of Standards and Technology, Boulder, CO, United States; [2]University of Colorado, Boulder, CO, United States

1667. Time-Dependent Transverse Relaxation Reveals Statistics of Structural Organization in Microbead Samples
Alexander Ruh[1], Philipp Emerich[1], Harald Scherer[2], Dmitry S. Novikov[3], Valerij G. Kiselev[1]
[1]Dept. of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]Dept. of Inorganic and Analytical Chemistry, University Freiburg, Freiburg, Germany; [3]Bernard and Irene Schwartz Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States

1668. Effects of Formalin Fixation on MR Relaxation Times in the Human Brain
Christoph Birkl[1], Christian Langkammer[2], Nicole Golob-Schwarzl[3], Marlene Leoni[3], Johannes Haybaeck[3], Walter Goessler[4], Franz Fazekas[1], Stefan Ropele[1]
[1]Department of Neurology, Medical University of Graz, Graz, Austria; [2]MGH/HST Martinos Center for Biomedical Imaging, Harvard Medical School, Boston, MA, United States; [3]Department of Neuropathology, Institute of Pathology, Medical University of Graz, Austria; [4]Institute of Chemistry, Analytical Chemistry, University of Graz, Austria

1669. A Structurally Anthropomorphic Brain Phantom
Kyoko Fujimoto[1, 2], Trent V. Robertson[1], Vanessa Douet[3], David G. Garmire[1], V. Andrew Stenger, [13]
[1]Department of Electrical Engineering, University of Hawaii at Manoa, Honolulu, HI, United States; [2]Department of Medicine, John A. Burns School of Medicine, University of Hawaii, Honolulu, HI, United States; [3]Department of Medicine, John A. Burns School of Medicine,, University of Hawaii, Honolulu, HI, United States

1670. Single-Shot Multi-Slice T1 Mapping at High Spatial Resolution – Inversion-Recovery FLASH with Radial Undersampling and Iterative Reconstruction
Xiaoqing Wang[1], Volkert Roeloffs[1], Klaus-Dietmar Merboldt[1], Dirk Voit[1], Sebastian Schaetz[1], Jens Frahm[1]
[1]Biomedizinische NMR Forschungs GmbH am Max-Planck-Institut fuer biophysikalische Chemie, Göttingen, Germany

1671. Simultaneous T_1 and T_2 Mapping Using a Modified Multi-Echo Spin-Echo Sequence (MOMSE)
Andreas Petrovic[1], Rudolf Stollberger[2]

[1]Institute of Medical Engineering, Universtiy of Technology Graz, Graz, -, Austria; [2]Institute of Medical Engineering, University of Technology Graz, -, Austria

1672. A Min-Max CRLB Optimization Approach to Scan Selection for Relaxometry

Gopal Nataraj[1], Jon-Fredrik Nielsen[2, 3], Jeffrey A. Fessler[1, 2]
[1]Electrical Engineering and Computer Science, University of Michigan, Ann Arbor, MI, United States; [2]Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States; [3]Functional MRI Laboratory, University of Michigan, Ann Arbor, MI, United States

1673. A Simple Method (EMoS) for T1 Mapping Is More Accurate and Robust Than the Variable Flip Angle (VFA) Method

Sofia Chavez[1, 2]
[1]Centre for Addiction and Mental Health, Toronto, Ontario, Canada; [2]Psychiatry, University of Toronto, Toronto, Ontario, Canada

1674. Qualtification of Rapid Decay Species with Short TE Spin Echo Sequence

Eamon K. Doyle[1, 2], Jonathan M. Chia[3], Krishna Nayak, [14], John C. Wood, [12]
[1]Biomedical Engineering, University of Southern California, Los Angeles, CA, United States; [2]Cardiology, Children's Hospital of Los Angeles, Los Angeles, CA, United States; [3]Philips Healthcare, Cleveland, OH, United States; [4]Electrical Engineering, University of Southern California, Los Angeles, CA, United States

1675. Whole-Brain Multi-Parameter Mapping Using Dictionary Learning

Sampada Bhave[1], Sajan Goud Lingala[2], Casey P. Johnson[1], Vincent A. Magnotta[1], Mathews Jacob[1]
[1]University of Iowa, Iowa City, IA, United States; [2]Electrical Engineering, University of Southern California, Los Angeles, CA, United States

1676. Fast and Accurate Quantification of T1, T2 and Proton Density Using IR BSSFP with Slice Profile Correction and Model Based Reconstruction

Andreas Lesch[1], Andreas Petrovic[1], Tilman Johannes Sumpf[2], Christoph Stefan Aigner[1], Rudolf Stollberger[1]
[1]Department for Medical Engineering, Graz University of Technology, Graz, Styria, Austria; [2]Biomedizinische NMR Forschungs GmbH , Max-Planck-Institut für biophysikalische Chemie, Göttingen, Germany

1677. Inversion Group (IG) Fitting: A New Fitting Algorithm for Modified Look-Locker Inversion Recovery (MOLLI) That Allows for Arbitrary Inversion Groupings

Issac Y. Yang[1], Kai-Ho Fok[1], Bernd J. Wintersperger[2, 3], Marshall S. Sussman[2, 3]
[1]Faculty of Medicine, University of Toronto, Toronto, Ontario, Canada; [2]Department of Medical Imaging, University of Toronto, Toronto, Ontario, Canada; [3]Joint Department of Medican Imaging, University Health Network & Mt. Sinai Hospital, Toronto, Ontario, Canada

1678. Plug-N-Play Magnetic Resonance Fingerprinting (PnP- MRF)

Shivaprasad Ashok Chikop[1], Antharikshanagar Bellappa Sachin Anchan[1], Shaikh Imam[1], Amaresha Shridhar Konar[1], Rashmi Rao[1], Arush Honnedevasthana Arun[1], Sairam Geethanath[1]
[1]Medical Imaging Research Center, Dayananda Sagar Institutions, bangalore, Karnataka, India

1679. Super-Resolution T1 Mapping: A Simulation Study.

Gwendolyn Van Steenkiste[1], Dirk H.J. Poot[2, 3], Ben Jeurissen[1], Arnold J. den Dekker[1, 4], Jan Sijbers[1]
[1]iMinds-Vision Lab, University of Antwerp, Antwerp (Wilrijk), Antwerp, Belgium; [2]BIGR (Medical informatics and Radiology), Erasmus Medical Center Rotterdam, Rotterdam, Netherlands; [3]Imaging Science and Technology, Delft University of Technology, Delft, Netherlands; [4]Delft Center for Systems and Control, Delft University of Technology, Delft, Netherlands

1680. Removing SSFP Banding Artifacts from DESPOT2 Images Using the Geometric Solution
Tobias Charles Wood[1], Stephen J. Wastling[1], Gareth J. Barker[1]
[1]Neuroimaging, King's College London, London, United Kingdom

1681. Ultra-Low Field NMR Relaxometry: Calibration Method and T1-Dispersion Below 1000 Hz
Vasileios Zampetoulas[1], Lionel M. Broche[1], David J. Lurie[1]
[1]Aberdeen Biomedical Imaging Centre,School of Medicine&Dentistry, University of Aberdeen,Foresterhill, AB25 2ZD, Aberdeen, United Kingdom

1682. B_1^+ Field Mapping Improves Accuracy of T_1 Measurements in Phantoms and Normal Breast at 3.0 T
Jennifer G. Whisenant[1], Lori R. Arlinghaus[1], Richard D. Dortch[1], William A. Grissom[1], Gregory S. Karczmar[2], Thomas E. Yankeelov[1]
[1]Vanderbilt University, Nashville, TN, United States; [2]University of Chicago, Chicago, IL, United States

1683. Exponential T2 Fitting with Even Echoes Only or Skipping the First Echo: How Well Does It Work?
Kelly C. McPhee[1], Alan H. Wilman[2]
[1]Physics, University of Alberta, Edmonton, Alberta, Canada; [2]Biomedical Engineering, University of Alberta, Edmonton, Alberta, Canada

1684. Proton Density Mapping: Removing Receive-Inhomogeneity Using Multi-Coil Information and T1 Regularization
Aviv Mezer[1], Ariel Rokem[2], Trevor Hastie[2], Brian Wandell[2]
[1]Edmond and Lily Safra Center for Brain Sciences, The Hebrew University, Jerusalem, Israel; [2]Stanford university, CA, United States

1685. Bayesian Monte Carlo Analysis of McDESPOT
Mustapha Bouhrara[1], Richard G. Spencer[1]
[1]National Institute on Aging, NIH, BALTIMORE, MD, United States

1686. Compensating for Stimulated Echoes in Quantitative T2 Relaxometry
Dushyant Kumar[1, 2], Susanne Siemonsen[1, 3], Jens Fiehler[1], Jan Sedlacik[1]
[1]Neuroradiology, Universitätsklinikum Hamburg-Eppendorf, Hamburg, Germany; [2]Multiple Sclerosis Imaging Section (SeMSI),, Universitätsklinikum Hamburg-Eppendorf, Hamburg, Germany, Germany; [3]Multiple Sclerosis Imaging Section (SeMSI), Universitätsklinikum Hamburg-Eppendorf, Hamburg, Germany

1687. Optimization of Acquisition Parameters for Magnetic Resonance Fingerprinting
Amaresha Shridhar Konar[1], Rashmi R. Rao[1], Shaik Imam[1], Shivaprasad Chikop[1], Sachin Anchan[1], Sairam Geethanath[1]
[1]Medical Imaging Research Center, Dayananda Sagar College of Engineering, Bangalore, Karnataka, India

1688. Comparison of Indirect and Stimulated Echo Compensated T2 Relaxometry Techniques: Extended Phase Graph Vs Shinnar-Le Roux Based Modelling
Kelly C. McPhee[1], Alan H. Wilman[2]
[1]Physics, University of Alberta, Edmonton, Alberta, Canada; [2]Biomedical Engineering, University of Alberta, Edmonton, Alberta, Canada

1689. Optimizing and Comparing the Efficiencies of Relaxometry Sequences in Quantitative T1 and T2 Imaging
Yang Liu[1], John R. Buck[1], Shaokuan Zheng[2], Vasiliki N. Ikonomidou[3]
[1]Electrical and Computer Engineering, University of Massachusetts Dartmouth, North Dartmouth, MA, United States; [2]Department of Radiology, University of Massachusetts Medical School, Worcester, MA, United States; [3]Bioengineering, George Mason University, Fairfax, VA, United States

1690. Sources of Systematic Error in MRI Liver Fat Quantification
Mark Bydder[1], Gavin Hamilton[2], Ajinkya Desai[2], Elhamy R. Heba[2], Tanya Wolfson[2], Claude B. Sirlin[2]
[1]CRMBM UMR 7339, CNRS / Aix-Marseille Université, Marseille, France; [2]University of California San Diego, CA, United States

1691. Improving Noise Robustness of the Quantitative (Q)BOLD Model.
Jan Sedlacik[1], Dushyant Kumar[1], Jens Fiehler[1]
[1]University Medical Center Hamburg-Eppendorf, Hamburg, Germany

1692. MR Fingerprint Assessment of Capillary with Quadratic Coefficient and Falling Down Parameter
Feng Qi[1, 2], Limiao Jiang[1, 2], Quek Swee Tian[1], Ng Thian C.[1, 2]
[1]Diagnostic Radiology, National University of Singapore, Singapore, Singapore; [2]Clinical Imaging Research Cente, A*STAR-NUS, Singapore, Singapore

1693. Fast and Accurate Two-Component Relaxometry with EPG Simulations and Dictionary Searching
Pierre-Yves Baudin[1], Benjamin Marty[2, 3], Ericky C.A. Araujo[2, 3], Noura Azzabou[2, 3], Pierre G. Carlier[2, 3], Paulo Loureiro de Sousa[4]
[1]Consultants for Research in Imaging and Spectroscopy, Tournai, Belgium; [2]NMR Laboratory, Institute of Myology, Paris, France; [3]NMR Laboratory, CEA/I2BM/MIRCen, Paris, France; [4]ICube, Université de Strasbourg, CNRS, Strasbourg, France

1694. Rapid Calculation of Correction Parameters to Compensate for Imperfect RF Spoiling in Quantitative R1 Mapping
Martina F. Callaghan[1], Shaihan J. Malik[2], Nikolaus Weiskopf[1]
[1]Wellcome Trust Centre for Neuroimaging, UCL Institute of Neurology, London, United Kingdom; [2]Division of Imaging Sciences and Biomedical Engineering, King's College London, London, United Kingdom

1695. Performing Dynamic Contrast-Enhanced MRI Quality Assurance for Multi-Centre Trials Using a Multi-Compartment Phantom with Physiological T1s
Neil Peter Jerome[1], Vasia Papoutsaki[1], James A. d'Arcy[1], Harold G. Parkes[1], Nandita deSouza[1], Martin O. Leach[1], David J. Collins[1]
[1]Radiotherapy & Imaging, The Institute of Cancer Research, Sutton, London, United Kingdom

1696. Uncertainty Quantification of Multi-Site T1 Measurements with Polyvinylpyrrolidone (PVP) Phantom and Human Brain Using Wild Bootstrap Analysis
Congyu Liao[1], Meng Chen[1], Darong Zhu[2], Hongjian He[1], Song Chen[1], Qiuping Ding[1], Jianhui Zhong[1]
[1]Center for Brain Imaging Science and Technology, Zhejiang University, Hangzhou, Zhejiang, China; [2]Hangzhou First People's Hospital, Zhejiang, China

1697. The Optimal Curve-Fitting Models for Liver T2´ Measurements Iron Overload in β-Thalassemia Major Patients
Busakol Ngammuang[1], Kittichai Wantanajittikul[2], Monruedee Tapanya[1], Suchaya Silvilairat[3], Pimlak Charoenkwan[3], Suwit Saekho[1]
[1]Department of Radiological Technology, Faculty of Associated Medical Sciences, Chiang Mai University, Chiang Mai, Thailand; [2]Biomedical Engineering Center, Faculty of Engineering, Chiang Mai University, Chiang Mai, Thailand; [3]Department of Pediatrics, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

Traditional Poster
Quantitative Susceptibility Mapping (QSM)
Exhibition Hall Tuesday 13:30-15:30

1698. What Is the Lorentz Sphere Correction for the MRI Measured Field Generated by Tissue Magnetic Susceptibility: The Spatial Exclusivity of Source and Observer and the Cauchy Principal Value
Yi Wang[1], Dong Zhou[1], Pascal Spincemaille[1]
[1]Cornell University, New York, United States

1699. Oligodendrocytes and the Role of Iron in Magnetic Susceptibility Driven Frequency Shifts in White Matter
Tianyou Xu[1], Sean Foxley[1], Karla Miller[1]
[1]Oxford Centre for Functional Magnetic Resonance Imaging of the Brain, University of Oxford, Oxford, Oxfordshire, United Kingdom

1700. Lorentz Cavity Field in Media with Magnetic Structure
Alexander Ruh[1], Valerij G. Kiselev[1]
[1]Dept. of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany

1701. Correlation Between Paramagnetic Ions and Quantitative Susceptibility Values of Postmortem Brain Study
Jeam Haroldo Oliveira Barbosa[1, 2], Rafael Emídio[3], Ana Tereza Di Lorenzo Alho[3], Camila Fernandes Nascimento[3], André Henrique Fais Silva[1], Alexandre Valotta Silva[3], Maria Conception Garcia Otaduy[3], Maria da Graça Martin[3], Edson Amaro Junior[3], Oswaldo Baffa[1], Carlos Ernesto Garrido Salmon[1, 4]
[1]Department of Physics - FFCLRP, University of Sao Paulo, Ribeirao Preto, Select, Brazil; [2]CNRS, ICube, FMTS,, Université de Strasbourg, Strasbourg, Bas-Rhin, France; [3]Department of Radiology - FM, University of Sao Paulo, Sao Paulo, Brazil; [4]University of Nottingham, Sir Peter Mansfield Magnetic Resonance Center, Nottingham , Bas-Rhin, United Kingdom

1702. Detection and Quantification of Microbleeds on Fixed Brain Specimens
Shunshan Li[1], Mark J. Fisher[2], Ronald C. Kim[3], David Cribbs[4], Mark J. Hamamura[1], Vitaly Vasilevko[4], Annlia P. Hill[2], Min-Ying Su[1]
[1]Tu&Yuen Center for Functional Onco-Imaging, University of California, Irvine, CA, United States; [2]Department of Neurology, University of California, Irvine, CA, United States; [3]Department of Pathology, University of California, Irvine, CA, United States; [4]Institute for Memory Impairments and Neurological Disorders, University of California, Irvine, CA, United States

1703. Estimation of Blood Oxygenation Using Quantitative Susceptibility Mapping
Alexey Dimov[1, 2], Thanh Nguyen[2], Zhe Liu[1, 2], Kofi Deh[2], Jingwei Zhang[1, 2], Martin Prince[2], Yi Wang[1, 2]
[1]Biomedical Engineering, Cornell University, Ithaca, NY, United States; [2]Radiology, Weill Cornell Medical College, New York, NY, United States

1704. Susceptibility and Cross-Sectional Area Quantifications of Small Veins in Human Brain
Ching-Yi Hsieh[1], Yu-Chung Norman Cheng[1], Jaladhar Neelavalli[1], E. Mark Haacke[1]
[1]Wayne State University, Detroit, MI, United States

1705. MRI Susceptometry Measurements of Murine Brown and White Adipose Tissue
Henry H. Ong[1], Robert A. Horch[1, 2], John C. Gore[1], E. Brian Welch[1]
[1]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States; [2]Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States

1706. MR-Based R2* and Quantitative Susceptibility Mapping (QSM) of Liver Iron Overload: Comparison with SQUID-Based Biomagnetic Liver Susceptometry
Samir D. Sharma[1], Bjoern P. Schoennagel[2], Jin Yamamura[2], Peter Nielsen[2], Regine Grosse[2], Hendrik Kooijman[3], Roland Fischer[2, 4], Diego Hernando[1], Gerhard Adam[2], Peter Bannas[1], Scott R. Reeder[1, 5]

[1]Radiology, University of Wisconsin, Madison, WI, United States; [2]University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [3]Philips Healthcare, Hamburg, Germany; [4]UCSF Benioff Children's Hospital Oakland, Oakland, CA, United States; [5]Medical Physics, University of Wisconsin, Madison, WI, United States

1707. Measurement of Brain Iron and Calcium Using MR QSM and CT: Validation Using Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES)
Jingwei Zhang[1, 2], Cynthia Wisnieff[1, 2], Becky Schur[3], Lu Zhengrong[3], David Pitt[4], Yi Wang[1, 2]
[1]Biomedical Engineering, Cornell University, New York, United States; [2]Radiology, Weill Cornell Medical College, New York, United States; [3]Biomolecular Engineering, Case Western Reserve University, OH, United States; [4]Neurology, Yale School of Medicine, CT, United States

ISMRM MERIT AWARD magna cum laude

1708. 2D-Segmented, Multi-TE 3D-EPI for High-Resolution R_2* and Quantitative Susceptibility Mapping at 7 Tesla
Rüdiger Stirnberg[1], Julio Acosta-Cabronero[2], Benedikt A. Poser[3], Tony Stöcker[1, 4]
[1]German Center for Neurodegenerative Diseases (DZNE), Bonn, Germany; [2]German Center for Neurodegenerative Diseases (DZNE), Magdeburg, Germany; [3]Faculty of Psychology and Neuroscience, Maastricht University, Maastricht, Netherlands; [4]Department of Physics and Astronomy, University of Bonn, Bonn, Germany

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1709. Wave-CAIPI and TGV for Fast Sub-Millimeter QSM at 7 Tesla
Christian Langkammer[1], Berkin Bilgic[1], Celine Louapre[1], Costanza Gianni[1], Sindhuja T. Govindarajan[1], Kawin Setsompop[1], Caterina Mainero[1]
[1]MGH/HST Martinos Center for Biomedical Imaging, Harvard Medical School, Boston, MA, United States

1710. Rapid Phase Imaging with 3D Echo-Planar Imaging (EPI) for Quantitative MRI – a Simulation Study on Image Artifacts
Paul Polak[1], Robert Zivadinov[1, 2], Ferdinand Schweser[1, 2]
[1]Department of Neurology, Buffalo Neuroimaging Analysis Center, State University of New York at Buffalo, Buffalo, NY, United States; [2]Molecular and Translational Imaging Center, MRI Center, Clincal and Translational Research Center, Buffalo, NY, United States

1711. Improving Quantitative Susceptibility and R2* Mapping by Applying Retrospective Motion Correction
Xiang Feng[1], Alexander Loktyushin[2], Andreas Deistung[1], Juergen R. Reichenbach[1]
[1]Medical Physics Group, Institute of Diagnostic and Interventional Radiology, Jena University Hospital - Friedrich Schiller University Jena, Jena, Germany; [2]Empirical Inference, Max Planck Institute for Intelligent Systems, Tübingen, Germany

1712. Image Quality Improvement Using Short Range Finite Difference in QSM Reconstruction
Maximilian Maerz[1], Dong Zhou[2], Yan Zhang[2, 3], Pascal Spincemaille[2], Lars Ruthotto[1], Yi Wang[2]
[1]Department of Mathematics and Computer Science, Emory University, Atlanta, GA, United States; [2]Weill Cornell Medical College, New York, NY, United States; [3]Department of Radiology, Tongji Hospital, Huazhong University of Science and Technology, Wuhan, Hubei, United States

1713. Optimizing the Data Acquisition Strategy for Quantitative Susceptibility Mapping in the Liver
Samir D. Sharma[1], Diego Hernando[1], Debra E. Horng, [12], Scott B. Reeder[1, 2]
[1]Radiology, University of Wisconsin, Madison, WI, United States; [2]Medical Physics, University of Wisconsin, Madison, WI, United States

1714. Interleaved 3D Multi-Slab Echo Shift Sequence for Fast T2* Weighted Imaging
Yajun Ma[1], Wentao Liu[1], Weinan Tang[1], Jia-Hong Gao[1]
[1]Center for MRI, Peking University, Beijing, China

1715. Limitations of Accelerated QSM by FOV Restriction to Deep Gray Matter
Ahmed M. Elkady[1], Hongfu Sun[1], Alan H. Wilman[1]

[1]Dept. of Biomedical Engineering, University of Alberta, Edmonton, AB, Canada

1716. **Ferumoxytol-Enhanced Plural Contrast Imaging of the Human Brain**
Samantha J. Holdsworth[1], Thomas Christen[1], Kristen Yeom[1], Jae Mo Park[1], Greg Zaharchuk[1], Michael E. Moseley[1]
[1]Department of Radiology, Stanford University, Stanford, CA, United States

1717. **Inference at the Cluster Level from the Relationship Between QSM and Age**
Julio Acosta-Cabronero[1], Arturo Cardenas-Blanco[1], Peter J. Nestor[1]
[1]German Center for Neurodegenerative Diseases (DZNE), Magdeburg, Saxony-Anhalt, Germany

1718. **QSM Standardisation Routine for Unbiased Whole-Brain Analysis**
Julio Acosta-Cabronero[1], Matthew TJ Betts[1], Arturo Cardenas-Blanco[1], Shan Yang[2], Oliver Speck[2], Peter J. Nestor[1]
[1]German Center for Neurodegenerative Diseases (DZNE), Magdeburg, Saxony-Anhalt, Germany; [2]Biomedical Magnetic Resonance (BMMR), Otto-von-Guericke University, Magdeburg, Saxony-Anhalt, Germany

1719. **Automated Segmentation of Midbrain Structures Using Quantitative Susceptibility Mapping Images**
Benjamín Garzón[1], Grégoria Kalpouzos[1], Rouslan Sitnikov[2]
[1]Aging Research Center, Karolinska Institute and Stockholm University, Stockholm, Sweden; [2]MRI Research Centre, Karolinska University Hospital, Stockholm, Sweden

1720. **Reproducibility of Quantitative Susceptibility Mapping (QSM) and R2* in the Human Brain**
Joon Yul Choi[1], Yoonho Nam[1], Jingu Lee[1], Jongho Lee[1]
[1]Department of Electrical and Computer Engineering, Seoul National University, Seoul, Korea

1721. **Anatomically Dependent Variations in Magnetic Susceptibility Produces Spectral Asymmetries in High Spectral and Spatial Resolution MRI of Post-Mortem Mouse Brain**
Sean Foxley[1], Miriam Domowicz[2], Nancy Schwartz[2], Gregory S. Karczmar[3]
[1]FMRIB Centre, University of Oxford, Oxford, OXON, United Kingdom; [2]Department of Pediatrics, University of Chicago, IL, United States; [3]Department of Radiology, University of Chicago, IL, United States

1722. **Quantification of Labeled Cell Clusters in a Rat Brain *In Vivo* Using MRI**
Paul Kokeny[1], Xie He[2], Saifeng Liu[3], Ching-Yi Hsieh[4], Quan Jiang[5, 6], Yu-Chung Norman Cheng[1], E. Mark Haacke[1, 4]
[1]School of Biomedical Engineering, Wayne State University, Detroit, MI, United States; [2]School of Physics, Wayne State University, Detroit, MI, United States; [3]School of Biomedical Engineering, McMaster Univeristy, Hamilton, Ontario, Canada; [4]Department of Radiology, Wayne State University, Detroit, MI, United States; [5]Department of Neurology, Henry Ford Health System, Detroit, MI, United States; [6]Department of Radiology, Henry Ford Health System, Detroit, MI, United States

1723. **A Dixon Method for Positive Contrast Imaging of Very Small Superparamagnetic Iron Oxide Nanoparticles in MRI**
Dirk Krüger[1], Silvia Lorrio González[1], René M. Botnar[1]
[1]Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom

1724. **Susceptibility Quantification for Ferritin and Fe_3O_4 Nanoparticles: Observation of Hyperfine Shift in Phase Images and Comparison Between Phase Measurement and CISSCO**
He Xie[1], Yu-Chung Norman Cheng[2], Ching-Yi Hsieh[2], Paul Kokeny[3], E.Mark Haacke[2]
[1]Physics and Astronomy, Wayne State University, Detroit, MI, United States; [2]Radiology, Wayne State University, Detroit, MI, United States; [3]Biomedical Engineering, Wayne State University, Detroit, MI, United States

1725. Ultrashort Echo Time Quantitative Susceptibility Mapping (UTE-QSM) of Cortical Bone
Qun He[1], Zhe Liu[2], Tian Liu[2], Yi Wang[2], Jiang Du[1]
[1]Radiology, UC, San Diego, San Diego, CA, United States; [2]Biomedical Engineering, Cornell University, Ithaca, NY, United States

1726. A Fully Flow Compensated Dual Echo Sequence:The Role of Acceleration and Background Gradient Effects on Flow Compensation
Dongmei Wu[1], Sagar Buch[2], Saifeng Liu[2], E. Mark Haacke[1, 3]
[1]Shanghai Key Laboratory of Magnetic Resonance, East China Normal University, Shanghai, China; [2]School for Biomedical Engineering, McMaster University, Hamilton, Ontario, Canada; [3]Department of Radiology, Wayne State University School of Medicine, Detroit, MI, United States

1727. SWI of the Cervical-Spinal Cord with Respiration Noise Correction Using Navigator Echo
Hongpyo Lee[1], Yoonho Nam[2], Dongyeob Han[1], Sung-Min Gho[1], Dong-Hyun Kim[1]
[1]Electrical & Electronic Engineering, Yonsei University, Seodaemun-gu, Soeul, Korea; [2]Electrical & Computer Engineering, Soeul National University, Gwanak-gu, Soeul, Korea

1728. Optimization of Inter-Echo Variance Channel Combination Technique for Susceptibility Weighted Imaging at 3T and 7T
Zahra Hosseini[1], Junmin Liu[2], Maria Drangova[2, 3]
[1]Biomedical Engineering Graduate Program, Western University, London, Ontario, Canada; [2]Imaging Research Laboratories, Robarts Research Institute, London, Ontario, Canada; [3]Medical Biophysics, Western University, London, Ontario, Canada

1729. Dipole Filtering, Decomposition and Quantification with 3D Radial Acquisition
Curtis A. Corum[1], Lauri J. Lehto[2], Djaudat S. Idiyatullin[1], Olli Gröhn[2], Michael Garwood[1]
[1]Center for Magnetic Resonance Research, Radiology, University of Minnesota, Minneapolis, MN, United States; [2]Department of Neurobiology, Biomedical Imaging Unit, A. I. Virtanen Institute for Molecular Sciences, University of Eastern Finland, Kuopio, Northern Savonia, Finland

1730. Improved Contrast in Multi-Echo Susceptibility-Weighted Imaging by Using a Non-Linear Echo Combination
Zhaolin Chen[1], Guillaume Gilbert[2], Miha Fuderer[1]
[1]Clinical Excellence and Research, R&D, Philips Healthcare, Best, Noord-Brabant, Netherlands; [2]MR Clinical Science, Philips Healthcare, Montreal, Canada

1731. Artefact Removal in High Phase Gradient Regions in Susceptibility Weighted Images.
Amanda Ching Lih Ng[1], Shawna Farquharson[2], Sonal Josan[3], Roger J. Ordidge[1]
[1]Dept of Anatomy and Neuroscience, The University of Melbourne, The University of Melbourne, VIC, Australia; [2]Imaging, The Florey Institute of Neuroscience and Mental Health, Melbourne, VIC, Australia; [3]Siemens Healthcare, Melbourne, VIC, Australia

1732. Magnetic Susceptibility (QSM) of Thalamic Sub-Nuclear Groups in Multiple Sclerosis
Ferdinand Schweser[1, 2], Devika Rattan[1], Jesper Hagemeier[1], Paul Polak[1], Michael G. Dwyer[1], Christopher R. Magnano[1], Robert Zivadinov[1, 2]
[1]Buffalo Neuroimaging Analysis Center, Dept. of Neurology, School of Medicine and Biomedical Sciences, State University of New York at Buffalo, Buffalo, NY, United States; [2]MRI Molecular and Translational Imaging Center, Buffalo CTRC, State University of New York at Buffalo, Buffalo, NY, United States

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1733. Magnetic Susceptibility in Gray Matter Is Associated with Age-Related Neuropathology: an *Ex-Vivo* QSM Study in a Community Cohort
Arnold Moya Evia Jr. [1], David A. Bennett[2, 3], Julie A. Schneider[2, 3], Aikaterini Kotrotsou[4], Robert J. Dawe[2], Konstantinos Arfanakis[1, 2]
[1]Illinois Institute of Technology, Chicago, IL, United States; [2]Rush Alzheimer's Disease Center, IL, United States; [3]Rush University Medical Center, IL, United States; [4]MD Anderson Cancer Center, TX, United States

1734. Susceptibility Mapping in Parkinson's Disease Patients at 3T
Johannes Lindemeyer[1], Ana-Maria Oros-Peusquens[1], Kathrin Reetz[1, 2], N. Jon Shah[1, 2]
[1]Institute of Neuroscience and Medicine 4, INM-4, Medical Imaging Physics, Forschungszentrum Jülich GmbH, Jülich, Germany; [2]Faculty of Medicine, Department of Neurology, RWTH Aachen University, JARA, Aachen, Germany

1735. Quantitative Susceptibility Mapping of the Squirrel Monkey at 3T and 11.7T: Application to a Model of Parkinson's Disease
Mathieu David Santin[1, 2], Alexandra Petiet[1, 2], Elodie Laffrat[1, 2], Stéphane Lehéricy[1, 2], Chantal François[2], Stéphane Hunot[2]
[1]Centre de NeuroImagerie de Recherche (CENIR), Paris, France; [2]Institut du Cerveau et de la Moelle épinière, Inserm U 1127, CNRS UMR 7225, Sorbonne Universités, UPMC Univ Paris 06 UMR S 1127, Paris, France

1736. Quantitative Susceptibility Mapping (QSM) Indicates Possible Iron Deficiency in the Thalamus and Dentate Nucleus in Restless Legs Syndrome (RLS)
Xu Li[1, 2], Hongjun Liu[1, 2], Richard P. Allen[3], Christopher J. Earley[3], Richard A.E. Edden[1, 2], Peter B. Barker[1, 2], Tiana E. Cruz[3], Peter C.M. van Zijl[1, 2]
[1]F.M. Kirby Research Center, Kennedy Krieger Institute, Baltimore, MD, United States; [2]Radiology, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [3]Neurology, Johns Hopkins University School of Medicine, Baltimore, MD, United States

1737. Measuring Venous Blood Oxygenation Using Quantitative Susceptibility Mapping: A Study Using Acetazolamide Challenge in Patients with Chronic Stenosis of Major Arteries
Deqiang Qiu[1], Fadi Nahab[2], Seena Dehkharghani[1]
[1]Radiology and Imaging Sciences, Emory University, Atlanta, GA, United States; [2]Neurology, Emory University, GA, United States

1738. Quantifying Peripheral Vascular Calcifications with Quantitative Susceptibility Mapping
Huan Tan[1], Tian Liu[2], Yi Wang[3], Robert R. Edelman[4, 5]
[1]Surgery, University of Chicago, Chicago, IL, United States; [2]MedImageMetric LLC, New York, NY, United States; [3]Radiology, Weill Cornell Medical College, New York, NY, United States; [4]Radiology, NorthShore University HealthSystem, Evanston, IL, United States; [5]Radiology, Northwestern University Feinberg School of Medicine, Chicago, IL, United States

1739. Can Susceptibility Weighted with Quantitative Phase MR Imaging Be Diagnostic in Differentiation of Haemorrhagic from Calcified Female Pelvic Lesion? - A Preliminary Study
sakshi khurana[1], Rakesh Kumar Gupta[1], Mukta Kapila[2], Swati Mittal[2], Manavita Mahajan[2], Ritu Tyagi[1], kirti verma[1]
[1]Radiology, fortis memorial research institute, Gurgaon, Haryana, India; [2]gynaecology, fortis memorial research institute, Gurgaon, Haryana, India

Traditional Poster
Magnetization Transfer & CEST

Exhibition Hall Tuesday 13:30-15:30

1740. Optimization of Selective Inversion Recovery Magnetization Transfer Imaging for Clinical Applications
Richard D. Dortch[1, 2], Ke Li[1, 2], Daniel F. Gochberg[1, 2], John C. Gore[1, 2], Seth A. Smith[1, 2]
[1]Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [2]Vanderbilt University Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States

1741. B_1-Sensitivity Analysis of QMT
Mathieu Boudreau[1], Nikola Stikov[1], G. Bruce Pike[2]
[1]McConnell Brain Imaging Center, Montreal Neurological Institute, McGill University, Montreal, Quebec, Canada; [2]Hotchkiss Brain Institute, Faculty of Medicine, University of Calgary, Calgary, Alberta, Canada

1742. Magnetization Transfer from Inhomogeneously Broadened Lines (IhMT): Sequence Optimization for Preclinical Investigation at Very High Magnetic Field (11.75T)
Valentin H. Prevost[1], Olivier M. Girard[1], Gopal Varma[2], David C. Alsop[2], Guillaume Duhamel[1]
[1]CRMBM CNRS UMR 7339, Aix-Marseille University, Marseille, France; [2]Departement of radiology, BIDMC, Harvard Medical School, Boston, MA, United States

1743. Modulation of Inter-Slice Frequency Offsets for Magnetization Transfer Ratio Imaging
Sul-Li Lee[1], Seung Hong Choi[2], Sung-Hong Park[1]
[1]Department of Bio and Brain Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Korea; [2]Department of Radiology, Seoul National University College of Medicine, Korea

1744. Initial Experience Using Magnetization Transfer with Iterative Decomposition of Water and Fat with Echo Asymmetry and Least-Squares Estimation (MT-IDEAL) in the Abdomen.
David ML Lilburn[1], Annette S. Cooper[1], Philip Murphy[2], Christopher DJ Sinclair[3], Scott I. Semple[1, 4], Robert L. Janiczek[2]
[1]Clinical Research Imaging Centre, University of Edinburgh, Edinburgh, East Lothian, United Kingdom; [2]Experimental Medicine Imaging, GlaxoSmithKline, Uxbridge, Middlesex, United Kingdom; [3]Institute of Neurology, University College London, London, United Kingdom; [4]BHF Centre for Cardiovascular Science, University of Edinburgh, Edinburgh, East Lothian, United Kingdom

1745. Multi-Parameter Mapping of *post-Mortem* Lumbar Spinal Cord Tissue in Multiple Sclerosis
Marco Battiston[1], Marios C. Yiannakas[1], Jia Newcombe[2], Claudia A M Wheeler-Kingshott[1], Rebecca S. Samson[1]
[1]NMR Research Unit, Department of Neuroinflammation, Queen Square MS Centre, UCL Institute of Neurology, London, England, United Kingdom; [2]NeuroResource Tissue Bank, UCL Institute of Neurology, London, England, United Kingdom

1746. Cross-Relaxation Parameter Quantification in Cortical Bone from Repeated Binomial Excitations
Khaoula Bouazizi-Verdier[1], Geneviève Guillot[1]
[1]IR4M, UMR8081, CNRS, Univ. Paris-Sud, Orsay, France

1747. Assessment of Membrane Fluidity Using Nuclear Overhauser Enhancement Mediated Magnetization Transfer
Xiao-Yong Zhang[1], Jingping Xie[1], Hua Li[1], Junzhong Xu[1], John C. Gore[1], Zhongliang Zu[1]
[1]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States

1748. Bound Water in Reconstructed Skin Samples: Quantification by NMR
Geneviève Guillot[1], Sarah Risquez[1], Chih-Ying Wang[1], Jean-Baptiste Galey[2], Marion Ghibaudo[2], Bernard Querleux[2]
[1]CNRS Univ Paris-Sud, IR4M UMR8081, ORSAY, France; [2]L'Oreal Research & Innovation, AULNAY-SOUS-BOIS, France

1749. Magnetization Transfer Imaging of Suicidal Patients with Major Depressive Disorder
Ziqi Chen[1], Huawei Zhang[1], Zhiyun Jia[1, 2], Jingjie Zhong[3], Xiaoqi Huang[1], Mingying Du[1], Lizhou Chen[1], Weihong Kuang[4], John A. Sweeney[5], Qiyong Gong[1]
[1]Huaxi MR Research Center (HMRRC), Department of Radiology,West China Hospital of Sichuan University, Chengdu, Sichuan, China; [2]Department of Nuclear Medicine, West China Hospital of Sichuan University, Chengdu, Sichuan, China; [3]Department of Neurology, West China Hospital of Sichuan University, Chengdu, Sichuan, China; [4]Department of Psychiatry, State Key Lab of Biotherapy, West China Hospital of Sichuan University, Chengdu, Sichuan, China; [5]Departments of Psychiatry and Pediatrics, University of Texas Southwestern, TX, United States

1750. Eliminating MT Contribution in Z-Spectra Using Dual Band Macromolecular Background Suppression (DBMS)
Simon Shah[1], Nicolas Geades[1], Andrew Peters[1], Penny Gowland[1], Olivier Mougin[1]
[1]Sir Peter Mansfield Imaging Centre, School of Physics and Astronomy, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

1751. Spiral-CEST Encoding with Spectral and Spatial B0 Correction
Sugil Kim[1, 2], Jaeseok Park[3]
[1]Department of Brain and Cognitive Engineering, Korea University, Seoul, Korea; [2]Center for Neuroscience Imaging Research, Institute for Basic Science (IBS), Sungkyunkwan University, Suwon, Korea; [3]Biomedical Imaging and Engineering Lab., , Department of Global Biomedical Engineering, Sungkyunkwan University, Suwon, Korea

1752. Retrospective Motion Correction in CEST MRI Data Using Time Domain Analysis
Nirbhay N. Yadav[1, 2], Kannie W. Y. Chan[1, 2], Monica Pearl[1], Piotr Walczak[1], Miroslaw Janowski[1, 3], Peter C. M. van Zijl[1, 2], Michael T. McMahon[1, 2]
[1]The Russell H. Morgan Department of Radiology and Radiological Science, The Johns Hopkins University, Baltimore, MD, United States; [2]FM Kirby Research Center, Kennedy Krieger Institute, Baltimore, MD, United States; [3]NeuroRepair Department, MMRC, PAS, Warsaw, Poland

1753. A Multi-Parametric Multi-Echo Saturation (MMS) Method Enabling CEST Fingerprinting
Xiaolei Song[1, 2], Xiaowei He, Jiadi Xu, [2], Nikita Oskolkov, Nirbhy Yadav, [2], Peter C.M. van Zijl, Michael T. McMahon
[1] The Russell H. Morgan Department of Radiology and Radiological Science, The Johns Hopkins University, Baltimore, MD, United States; [2]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States

1754. Quantitative CEST (QCEST) Using Ω–plots in the Case of Trains of Gaussian–shaped Saturation Pulses
Jan-Eric Meissner[1, 2], Moritz Zaiss[1], Eugenia Rerich[1], Peter Bachert[1]
[1]Division of Medical Physics in Radiology, German Cancer Research Center, Heidelberg, Baden-Württemberg, Germany; [2]Neurooncologic Imaging, Division of Radiology, German Cancer Research Center, Heidelberg, Baden-Württemberg, Germany

1755. Quantitative Assessment of Amide Proton Transfer (APT) and Nuclear Overhauser Enhancement (NOE) Imaging with Extrapolated Semi-Solid Magnetization Transfer Reference (EMR) Signals - An Accurate and Straightforward Measurement Approach
Hye-Young Heo[1], Yi Zhang[2], Shanshan Jiang[2], Dong-Hoon Lee[2], Jinyuan Zhou[2]
[1]Russell H Morgan Department of Radiology and Radiological Science, Johns Hopkins University , Baltimore, MD, United States; [2]Russell H Morgan Department of Radiology and Radiological Science, Johns Hopkins University, Baltimore, MD, United States

1756. Optimal Sampling Schedule for PARACEST Agents and Analysis of Its Performance
Li Liang[1], Jing Yuan[2], Jiadi Xu[3], Heather T. Ma[1, 4]
[1]Department of Electronic and Information Engineering, Harbin Institute of Technology Shenzhen Graduate School, Shenzhen, Guangdong, China; [2]Medical physics and research department, Hong Kong Sanatorium & Hospital, Hong Kong; [3]F. M. Kirby Research Center, Kennedy Krieger Institute, Baltimore, MD, United States; [4]Radiology Department, Johns Hopkins University, Baltimore, MD, United States

1757. Improved Diagnosis of Tumor Tissues with QUESPOWR MRI
Edward A. Randtke[1], Mark D. Pagel[1], Julio Cárdenas-Rodríguez[1]
[1]Biomedical Engineering, University of Arizona, Tucson, AZ, United States

1758. Quantum Chemical Prediction and Experimental Validation of the Characteristics of DiaCEST MRI Contrast Agents
Luis A. Montano[1], Mark D. Pagel[2, 3], Julio Cárdenas-Rodríguez[2]
[1]Chemistry and Biochemistry, University of Arizona, Tucson, AZ, United States; [2]Biomedical Engineering, University of Arizona, Tucson, AZ, United States; [3] Arizona Cancer Center , University of Arizona, Tucson, AZ, United States

1759. Salicylic Acid Based CEST Agents for Assessing Brain Perfusion Territory and Blood-Brain Barrier Permeability
Xiaolei Song[1, 2], Piotr Walczak[1, 2], Xing Yang, Xiaowei He, [3], Jeff W.M. Bulte, [2], Monica Pearl, Peter C.M. van Zijl, [2], Martin Pomper, Michael T. McMahon, [2], Mirosław Janowski, [4]

[1] The Russell H. Morgan Department of Radiology and Radiological Science, The Johns Hopkins University, Baltimore, MD, United States; [2]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States; [3]School of Information Sciences and Technology, Northwest University, Xi'an, Shaanxi, China; [4]NeuroRepair Department, MMRC, PAS, Warsaw, Poland

1760. Iopamidol CEST for PH Mapping on a 7T Scanner: Phantom and Normal Mice Kidneys *In Vivo* Study

Wei Hu[1], Phillip Zhe Sun[2], Renhua Wu[3]
[1]the Second Affiliated Hospital of Shantou University Medical College, Shangtou, GuangDong, China; [2]Athinoula A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital and Harvard Medical School, Charlestown, MA, United States; [3]Shantou University Medical College, Shantou, Guangdong, China

1761. Topiramate Induced Intracellular Acidification in Brain Tumors: *In-Vivo* Detection Using Chemical Exchange Saturation Transfer Magnetic Resonance Imaging

Kamini Yogesh Marathe[1, 2], Nevin McVicar[1, 2], Alex Li[2], Mojmir Suchy[3], Miranda Bellyou[2], Susan Meakin[2, 4], Robert Bartha[1, 2]
[1]Medical Biophysics, Western University, London, Ontario, Canada; [2]Centre for Functional and Metabolic Mapping, Robarts Research Institute, London, Ontario, Canada; [3]Chemistry, Western University, London, Ontario, Canada; [4]Biochemistry, Western University, London, Ontario, Canada

1762. Sensitivity of CEST MRI for Absolute PH Measurement in Brain Metastases

Kevin Ray[1], James Larkin[1], Yee Kai Tee[2, 3], Alexandr Khrapitchev[1], Michael Chappell[3], Nicola Sibson[1]
[1]CRUK and MRC Oxford Institute for Radiation Oncology, Department of Oncology, University of Oxford, Oxford, United Kingdom; [2]Department of Mechatronics and Biomedical Engineering, Faculty of Engineering and Science, Universiti Tunku Abdul Rahman, Kuala Lumpur, Malaysia; [3]Department of Engineering Science, Institute of Biomedical Engineering, University of Oxford, Oxford, United Kingdom

1763. Quantitative Measurements of Amide Proton Transfer (APT) Signals and Tissue PH in Acute Ischemic Stroke

Dong-Hoon Lee[1], Xiaoguang Liu[2], Kai Zhang[1], Yi Zhang[1], Hye-Young Heo[1], Wenxiao Li[1], Raymond C. Koehler[2], Jinyuan Zhou[1]
[1]Division of MR Research, Department of Radiology, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Department of Anesthesiology, Johns Hopkins University School of Medicine, Baltimore, MD, United States

1764. ^{31}P MRS and Creatine CEST: A Method to Monitor Creatine Kinase Metabolism in a Perfused Heart Model

Kevin D'Aquilla[1], Rong Zhou[1], Hari Hariharan[1], Neil Wilson[1], Ravinder Reddy[1]
[1]Center for Magnetic Resonance and Optical Imaging, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States

1765. Glutamate CEST MRI in MPTP Mouse Model of Parkinson's Disease

Puneet Bagga[1], Rachelle Crescenzi[1], Guruprasad Krishnamoorthy[1], Ravi Prakash Reddy Nanga[1], Sidyarth Garimall[1], Kevin D'Aquilla[1], Damodara Reddy[1], Joel H. Greenberg[2], John A. Detre[2], Hari Hariharan[1], Ravinder Reddy[1]
[1]Department of Radiology, University of Pennsyvania, Philadelphia, PA, United States; [2]Department of Neurology, University of Pennsyvania, Philadelphia, PA, United States

1766. GlucoCEST as Method for Early Detection of Renal Allograft Rejection

Annika Busch[1], Dominik Kentrup[2], Helga Pawelski[2], Nirbhay N. Yadav[3, 4], Guanshu Liu[3, 4], Peter C.M. van Zijl[3, 4], Stefan Reuter[2], Verena Hoerr[1, 5]
[1]Department of Clinical Radiology, University Hospital Muenster, Muenster, Germany; [2]Department of Medicine D - Experimental Nephrology, University Hospital Muenster, Muenster, Germany; [3]Russel H. Morgan Department of Radiology and Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [4]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Research Institute, Baltimore, MD, United States; [5]Institute of Medical Microbiology, Jena University Hospital, Jena, Germany

1767. Dynamic Glucose Enhanced (DGE) MRI for Imaging Brain Cancer
Xiang Xu[1, 2], Kannie WY Chan, [12], Linda Knutsson[3], Dmitri Artemov[1, 4], Jiadi Xu, [12], Guanshu Liu, [12], Yoshi Kato[1, 4], Bachchu Lal[5, 6], John Laterra[5, 6], Michael T McMahon, [12], Peter van Zijl, [12]
[1]Russell H. Morgan Department of Radiology and Radiological Science, Johns Hopkins Medicine, Baltimore, MD, United States; [2]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute Johns Hopkins Medicine, Baltimore, MD, United States; [3]Department of Medical Radiation Physics,, Lund University, Lund, Sweden; [4]Division of Cancer Imaging Research and JHU In Vivo Cellular Molecular Imaging Center, Johns Hopkins Medicine, MD, United States; [5]Department of Neurology, Kennedy Krieger Institute, MD, United States; [6]Department of Neuroscience, Kennedy Krieger Institute, MD, United States

1768. Cardiac CEST Imaging of Diffuse Fibrosis
Scott William Thalman[1, 2], Zhengshi Yang[1], Andrea Mattingly[1], Moriel Vandsburger[1, 3]
[1]Saha Cardiovascular Research Center, University of Kentucky, Lexington, KY, United States; [2]Department of Biomedical Engineering, University of Kentucky, Lexington, KY, United States; [3]Department of Physiology, University of Kentucky, Lexington, KY, United States

1769. Breath-Hold CEST-MRI of Liver Cirrhosis: A Clinical Feasibility Study
Xin Chen[1], Weibo Chen[2, 3], Guangbin Wang[1], Jianhua Lu[4], Jinyuan Zhou[5], Guang Jia[4, 6], Jianqi Li[3]
[1]Shangdong Medical Imaging Research Institute, Shangdong University, Jinan, Shandong, China; [2]Philips Healthcare, Shanghai, China; [3]Shanghai Key Laboratory of Magnetic Resonance and Department of Physics, East China Normal University, Shanghai, China; [4]Department of Physics and Astronomy, Louisiana State University, Baton Rouge, LA, United States; [5]Johns Hopkins University, Baltimore, MD, United States; [6]Pennington Biomedical Research Center, Baton Rouge, LA, United States

1770. CEST and FLEX MRI for Detection of CNS Graft Rejection
Sujith V. Sajja[1, 2], Guanshu Liu[1, 3], Nirbhay Yadav[1, 3], Jiadi Xu[3], Antje Arnold[1, 2], Anna Jablonska[1, 2], Michael McMahon[1, 3], Peter van Zijl[1, 3], Jeff Bulte[1, 2], Piotr Walczak[1, 4], Miroslaw Janowski[1, 5]
[1]Dept. of Radiology and Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Cellular Imaging Section and Vascular Biology Program, Institute for Cell Engineering, Johns Hopkins University, Baltimore, MD, United States; [3]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States; [4]Department of Radiology, University of Warmia and Mazury, Olsztyn, Poland; [5]NeuroRepair Department, Polish Academy of Sciences, Warsaw, Poland

1771. Effects of Water Proton Concentration and Water T1 Changes on APT and NOE Imaging Signals in Gliomas
Dong-Hoon Lee[1], Hye-Young Heo[1], Kai Zhang[1], Yi Zhang[1], Shanshan Jiang[1], Jinyuan Zhou[1]
[1]Division of MR Research, Department of Radiology, Johns Hopkins University School of Medicine, Baltimore, MD, United States

1772. Amide Proton Transfer Imaging in Hemorrhagic Brain Lesions at 3T
Sung Soo Ahn[1], Yoon Seong Choi[1], Ha-Kyu Jeong[2], Jinyuan Zhou[3], Yansong Zhao[4], Seung-Koo Lee[1]
[1]Radiology, Yonsei University College of Medicine, Seoul, Korea; [2]Philips Korea, Seoul, Korea; [3]Radiology, Johns Hopkins University, Baltimore, MD, United States; [4]Philips Healthcare, Cleveland, OH, United States

1773. Isolated Amide Proton CEST Contrast at 7 T Correlates with Contrast–enhanced T_1–weighted Images of Tumor Patients
Johannes Windschuh[1], Steffen Goerke[1], Jan-Eric Meissner[1], Alexander Radbruch[2, 3], Peter Bachert[1], Moritz Zaiss[1]
[1]Division of Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Baden-Württemberg, Germany; [2]Department of Neuroradiology, University of Heidelberg Medical Center, Heidelberg, Baden-Württemberg, Germany; [3]Department of Radiology, German Cancer Research Center (DKFZ), Heidelberg, Baden-Württemberg, Germany

1774. Frequency-Encoded MRI-CEST Agents Based on Paramagnetic Liposomes/RBC Aggregates
Giuseppe Ferrauto[1], Enza Di Gregorio[1], Simona Baroni[1], Silvio Aime[1]
[1]Molecular Biotechnology and Health Science, Molecular Imaging Center-University of Torino (IT), Torino, Italy

Traditional Poster
RF Engineering

Exhibition Hall Tuesday 16:00-18:00

1775. A System for in Situ S-Parameter Measurements of MR Transmit Arrays
Gerd Weidemann[1], Frank Seifert[1], Werner Hoffmann[1], Rainer Seemann[1], Patrick Waxmann[1], Bernd Ittermann[1]
[1]Physikalisch-Technische Bundesanstalt , Braunschweig und Berlin, Germany

1776. 7T Coil Decoupling in Near-Magnet Power Amplifier
Ashraf Abuelhaija[1], Klaus Solbach[2]
[1]Duisburg-Essen University, Duisburg, Select a state, Germany; [2]Duisburg-Essen University, Duisburg, Germany

1777. An Open 4ch. Transmit / 16 Ch. Receive Coil for High Resolution Occipital and Temporal Visual Cortex Imaging at 7T
Shubharthi Sengupta[1], Gregor Adriany[2], Valentin G. Kemper[1], Jan Zimmermann[3], Rainer Goebel[1], Alard Roebroeck[1]
[1]Dept. of Cognitive Neuroscience, Maastricht University, Maastricht, Netherlands; [2]Dept. of Radiology, University of Minnesota, MN, United States; [3]New York University, NY, United States

1778. A 32-Channel Intracranial and Extracranial Vascular Array for Three Dimension Arterial Wall MR Imaging at 3T
Xiaoqing Hu[1], Lei Zhang[1], Chao Zou[1], Huabin Zhu[2], Xiaoliang Zhang[3], Yiu-cho Chung[1], Xin Liu[1], Hairong Zheng[1], Ye Li[1]
[1]Lauterbur Research Center for Biomedical Imaging, Shenzhen Institutes of Advanced Technology of Chinese Academy of Sciences, Shenzhen, Guangdong, China; [2]Suzhou Medcoil Healthcare Co.,Ltd, Suzhou, Jjiangsu, China; [3]Department of Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States

1779. Determination of the Optimal Number of Coil Elements: A Semi-Theoretical Approach
Mark Schuppert[1], Karl-Friedrich Kreitner, Stefan Fischer[1], Simon Wein[1], Boris Keil[2], Lawrence L. Wald[2, 3], Laura M. Schreiber[1, 4]
[1]Section of Medical Physics, Department of Radiology, Johannes Gutenberg University Medical Center, Mainz, Germany; [2]A.A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Charlestown, MA, United States; [3]Harvard Medical School, Boston, MA, United States; [4]Department of Cellular and Molecular Imaging, Comprehensive Heart Failure Center, Wuerzburg, Germany

1780. Design Optimization and Evaluation of a 64-Channel Cardiac Array Coil at 3T
Robin Etzel[1, 2], Xueming Cao[1, 3], Choukri Mekkaoui[1], David E. Sosnovik[1], Timothy G. Reese[1], Mark Schuppert[4], Laura M. Schreiber, [45], Martin Fiebich[2], Lawrence L. Wald[1], Boris Keil[1]
[1]A.A. Martinos Center for Biomedical Imaging, Dept. of Radiology, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA, United States; [2]Mittelhessen University of Applied Sciences, Institute for Medical Physics and Radiation Protection, Giessen, Germany; [3]Medical Physics, Department of Radiology, University Medical Center Freiburg, Freiburg, Germany; [4]Department of Radiology, Johannes Gutenberg University Medical Center, Section of Medical Physics, Mainz, Germany; [5]Comprehensive Heart Failure Center, Department of Cellular and Molecular Imaging, Wuerzburg, Germany

1781. B_1^+ Homogenization Capabilities at 9.4T from a Simulation Approach
Jörg Felder[1], N. Jon Shah[1, 2]
[1]Institute of Neuroscience and Medicine, Forschungszentrum Jülich, Jülich, NRW, Germany; [2]Faculty of Medicine, Department of Neurology, JARA, RWTH Aachen University, Aachen, NRW, Germany

1782. Evaluating the SNR Performance of Using Dielectric Pads with Multiple Channel RF Coils at 7T
Bei Zhang[1], Zahi A. Fayad[1], Junqian Xu[1], Bernd Stoeckel[2], Priti Balchandani[1]
[1]Translational and Molecular Imaging Institute, Icahn School of Medicine at Mount Sinai, New York, United States; [2]Siemens Medical Solution, New York, United States

1783. Transmit Volume Coil-Receive Surface Coil for Proton Operating at 14 Tesla
Masoumeh Dehghani M. [1], *Arthur Magill W.* [2], *Yves Pilloud*[1], *Nicolas Kunz*[2], *Rolf Gruetter*[1, 2]
[1]Laboratory for Functional and Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Vaud, Switzerland; [2]Centre d'Imagerie Biomédicale, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Vaud, Switzerland

1784. Design and Development of General Propose Transmit-Receive (TR) Switch for a Linear, Quadrature and Dual Tuned Coils
Bijaya Thapa[1], *Joshua Kaggie*[1], *Nabraj Sapkota*[1], *Eun Kee Jeong*[1, 2]
[1]Dept. of Physics and Astronomy, Utah Center for Advanced Imaging Research, University of Utah, Salt Lake City, UT, United States; [2]Dept. of Radiology, Korea University, Seoul, Korea

1785. A Low Cost Signal Modulator for a Field Programmable Gate Array Based Parallel Transmit System
Benson Yang[1], *Clare McElcheran*[2], *Fred Tam*[1], *Simon Graham*[1, 2]
[1]Physical Sciences, Sunnybrook Research Institute, Toronto, ON, Canada; [2]Medical Biophysics, The University of Toronto, Toronto, ON, Canada

1786. Frequency Translation for ^{1}H Decoupled Multichannel ^{13}C Spectroscopy
Stephen E. Ogier[1], *Steven M. Wright*[1, 2]
[1]Electrical and Computer Engineering, Texas A&M University, College Station, TX, United States; [2]Biomedical Engineering, Texas A&M University, College Station, TX, United States

1787. Phase Correction with Asynchronous Digitizers
John C. Bosshard[1], *Steven M. Wright*[1]
[1]Department of Electrical & Computer Engineering, Texas A&M University, College Station, TX, United States

1788. A Novel Dsm Based All-Digital IQ Modulator for a Highly Efficient MRI Transmitter
Filiz Ece Sagcan[1], *Bulent Sen*[1], *Aylin Bayram*[1]
[1]Power Amplifier Technologies, ASELSAN A.S., Ankara, Turkey

1789. Wi-Fi Tuning/detuning Switch for Inductively Coupled Wireless Phased Array Coil for Intraoperative MRI Applications
Seunghoon Ha[1], *Haoqin Zhu*[1], *Labros Petropoulos*[1]
[1]R&D, IMRIS Inc., Minnetonka, MN, United States

1790. Comparisons of RF Signal Tuning and Matching Networks
Sung-Min Sohn[1], *Lance DelaBarre*[1], *J. Thomas Vaughan*[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States

1791. Cryogenic Receive-Only 7 Tesla Coil for MRI of Hyperpolarized 13C
Jarek Wosik[1, 2], *Krzysztof Nesteruk*[3], *I-Chih Tan*[4], *Kuang Qin*[1], *James A. Bankson*[5]
[1]Electrical and Computer Engineering, University of Houston, Houston, TX, United States; [2]Texas Center for Superconductivity, University of Houston, Houston, TX, United States; [3]Institute of Physics Polish Academy of Sciences, Warsaw, Poland; [4]Center for Molecular Imaging, The University of Texas Health Science Center, Houston, TX, United States; [5]Department of Imaging Physics, The University of Texas M. D. Anderson Cancer Center, Houston, TX, United States

1792. Materials for Printed MRI Surface Coils: Towards Better Image Quality and Coil Flexibility
Balthazar Pierre Lechene[1], *Anita Flynn*[1], *Joseph Corea*[1], *Michael Lustig*[1], *Ana Claudia Arias*[1]
[1]Electrical Engineering and Computer Science, University of California Berkeley, Berkeley, CA, United States

1793. A Single Channel Spiral Volume Coil for *In Vivo* Imaging of the Whole Human Brain at 6.5 MT
Cristen LaPierre[1, 2], Mathieu Sarracanie[1, 2], David E J Waddington[1, 3], Matthew S. Rosen[1, 2]
[1]MGH/A.A. Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [2]Department of Physics, Harvard University, Cambridge, MA, United States; [3]ARC Centre of Excellence for Engineered Quantum Systems, School of Physics, University of Sydney, Sydney, NSW, Australia

1794. High Spatial Resolution RF Coil for Brain Imaging of Small Monkeys at 11.7 T
Helmar Waiczies[1], Alexandra Petiet[2], Elodie Laffrat[3, 4], Darius Lysiak[1], Stephane Hunot[3, 4], Thoralf Niendorf[1], Jan Rieger[1]
[1]MRI.TOOLS GmbH, Berlin, Germany; [2]Center for Neuroimaging Research, Brain and Spine Institute, ICM, Paris, France; [3]Inserm U 1127, CNRS UMR 7225, Sorbonne Universités, UPMC Univ Paris, Paris, France; [4]Institut du Cerveau et de la Moelle épinière, ICM, Paris, France

1795. Parallel-Plate Waveguide for Subject-Insensitive RF Transmission
Hai Lu[1], Shumin Wang[1]
[1]Auburn University, Auburn, AL, United States

1796. Improvement of Signal-To-Noise Ratio Using Graphene-Based Surface RF Coils on 3T MRI
Hsuan-Han Chiang[1], Ming-Jye Chen[1], Chien-Cheng Kuo[2], You-Yin Chen[3], Changwei W. Wu[4], Li-Wei Kuo[1]
[1]Institute of Biomedical Engineering and Nanomedicine, National Health Research Institutes, Miaoli County, Taiwan; [2]Graduate Institute of Energy Engineering/Thin Film Technology Center, National Central University, Taoyuan County, Taiwan; [3]Department Biomedical Engineering, National Yang-Ming University, Taipei, Taiwan; [4]Graduate Institute of Biomedical Engineering, National Central University, Taoyuan County, Taiwan

1797. MEMS Reconfigurable Coils
Selaka B. Bulumulla[1], Eric Fiveland[1], Keith Park[1], Joseph Iannotti[1]
[1]GE Global Research, Niskayuna, NY, United States

1798. Self-Selecting, Cable-Free MRI RF Coils
Oliver Heid[1], Jürgen Heller[1], Yong Wu[2], Xiaoyu Yang[2], Hiroyuki Fujita[2]
[1]CT NTF HTC, Siemens AG, Erlangen, Bavaria, Germany; [2]Quality Electrodynamics, Mayfield Village, OH, United States

1799. B1+, SAR, and Temperature Distributions in the Breast with Different Tissue Ratio: FDTD Simulations and Experimental RF Field and Temperature Measurements at 7T
Junghwan Kim[1, 2], Narayan Krishnamurthy[1], Yujuan Zhao[1], Tiejun Zhao[3], Kyongtae Ty Bae[1, 2], Tamer Ibrahim[1, 2]
[1]Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States; [2]Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [3]Siemens Medical Solution USA, Inc, Pittsburgh, PA, United States

1800. Numerical Comparison of a Dedicated Paediatric Radiofrequency Array with Existing Adult Coil Designs
Gemma R. Cook[1], Martin J. Graves[1, 2], Fraser J. Robb[3], David J. Lomas[1]
[1]Department of Radiology, University of Cambridge, Addenbrooke's Hospital, Cambridge, United Kingdom; [2]MRIS, Cambridge University Hospitals NHS Foundation Trust, Addenbrooke's Hospital, Cambridge, United Kingdom; [3]GE Healthcare Coils, Aurora, OH, United States

1801. 7T Head Coil with Two Independent T/R Channels
Zhiyong Zhai[1], Michael Morich[1]
[1]Philips Healthcare, Cleveland, OH, United States

1802. Multi-Channel MOSFET Amplifiers for Parallel Excitation in 7T Animal MRI System
Yizhe Zhang[1], Yan Liu[1], Bingyao Sun[1], Xiaoliang Zhang[2], Xiaohua Jiang[1]

[1]Department of Electrical Engineering, Tsinghua University, Beijing, China; [2]Department of Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States

1803. Balanced Feed Lines with Bridged Shield Gaps for RF Coil Arrays
Roland Müller[1], Mikhail Kozlov[1], Harald E. Möller[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Saxony, Germany

1804. Characterization of B0 and B1 Maps in 3D Printer Materials at 9.4T
Hedok Lee[1, 2], Andrew Ravin[1]
[1]Anesthesiology , State University of New York at Stony Brook, Stony Brook, NY, United States; [2]Radiology, State University of New York at Stony Brook, Stony Brook, NY, United States

1805. Modular Extensions to MRI Systems Architecture with Example Application of Pulse Sequence Independent Real-Time Scan Plane Control
J. Andrew Derbyshire[1], Peter A. Bandettini[1]
[1]fMRI Core, National Institute of Mental Health, NIH, Bethesda, MD, United States

1806. Impact of Matching Capacitors in SAR Evaluation for a 7T Endo-Rectal Coil
Jinfeng Tian[1], Lance Delabarre[1], Greg Metzger[1], J. Thomas Vaughan[1]
[1]U. of Minnesota, Minneapolis, MN, United States

1807. On the Electrodynamic Constraints and Antenna Array Design for Human *In Vivo* MR Up to 70 Tesla and EPR Up to 3GHz
Lukas Winter[1], Thoralf Niendorf[1, 2]
[1]Berlin Ultrahigh Field Facility (B.U.F.F.), Max-Delbrück Center for Molecular Medicine, Berlin, Germany; [2]Experimental and Clinical Research Center (ECRC), a joint cooperation between the Charité and the Max-Delbrueck Center for Molecular Medicine, Berlin, Germany

1808. Hybrid Monopole/loop Coil Array for Human Head Parallel MR Imaging at 7T
Xinqiang Yan[1, 2], Xiaoliang Zhang[3], Long Wei[2], Yuqian Liu[2], Rong Xue[1]
[1]State Key Laboratory of Brain and Cognitive Science, Beijing MRI Center for Brain Research, Institute of Biophysics, Chinese Academy of Sciences, Beijing, China; [2]Key Laboratory of Nuclear Analysis Techniques, Institute of High Energy Physics, Chinese Academy of Sciences, Beijing, China; [3]Department of Radiology and Biomedical Imaging, University of California San Francisco and UCSF/UC Berkeley Joint Graduate Group in Bioengineering, San Francisco, CA, United States

1809. Geometry Optimization of 7T Dual-Row Transmit Arrays
Mikhail Kozlov[1], Roland Müller[1], Harald Möller[1]
[1]MPI Leipzig, Leipzig, Saxony, Germany

1810. Impact of Different Meander Sizes on the RF Transmit Performance and Decoupling of Micro Strip Line Elements at 7T
Stefan H. G. Rietsch[1, 2], Harald H. Quick[1, 2], Stephan Orzada[1]
[1]Erwin L. Hahn Institute for MR Imaging, Essen, Germany; [2]High Field and Hybrid MR Imaging, University Hospital Essen, Essen, Germany

1811. 2nd Prototype of an Automatic Tune and Match RF Transceive Coil: Design and Evaluation
ISMRM MERIT AWARD magna cum laude
Sung-Min Sohn[1], Lance DelaBarre[1], Anand Gopinath[2], J. Thomas Vaughan[1, 2]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States; [2]Department of Electrical and Computer Science Engineering, University of Minnesota, MN, United States

1812. RF Instrumentation for Same-Breath Triple-Nuclear Lung MR Imaging of ^{1}H and Hyperpolarized ^{3}He and ^{129}Xe at 1.5T
Madhwesha Rao[1], Juan Parra-Robles[1], Helen Marshall[1], Neil Stewart[1], Guilhem Collier[1], Jim Wild[1]
[1]University of Sheffield, Sheffield, South Yorkshire, United Kingdom

1813. Investigation of Flexible Transmit/Receive Coil Concepts on B1+ Performance at 3T
Christoph Leussler[1], Christian Findeklee[1], Peter Vernickel[1], Kay Nehrke[1], Peter Börnert[1]
[1]Philips GmbH Innovative Technologies, Research Laboratories , Hamburg, Germany

1814. Novel Splittable N-Tx/2N-Rx Transceiver Phased Array to Optimize Both SNR and Transmit Efficiency at 9.4 T
Nikolai I. Avdievich[1], Ioannis A. Giapitzakis[1], Anke Henning[1, 2]
[1]Max Planck Institute for Biological Cybernetics, Tübingen, Germany; [2]Institute for Biomedical Engineering, UZH and ETH Zurich, Zurich, Switzerland

1815. An Interface to Connect a 16-Channel Transmit Array to an 8-Channel Parallel Transmit System
Shajan G[1], Jens Hoffmann[1], Klaus Scheffler[1, 2], Rolf Pohmann[1]
[1]Max Planck Institute for Biological Cybernetics, Tuebingen, Baden Wuerttemberg, Germany; [2]Department of Biomedical Magnetic Resonance, University Hospital, Tuebingen, Baden Wuerttemberg, Germany

1816. An On-Coil Current-Source Amplifier with Integrated Real-Time Optical Monitoring of B1 Amplitude and Phase
Natalia Gudino[1], Qi Duan[1], Jacco A. de Zwart[1], Joe Murphy-Boesch[1], Peter van Gelderen[1], Jeff H. Duyn[1]
[1]Advanced MRI section, LFMI, NINDS, National Institutes of Health, Bethesda, MD, United States

1817. On-Coil Power Monitor with a High Directivity Coupler
Sung-Min Sohn[1], Anand Gopinath[2], J. Thomas Vaughan[1, 2]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States; [2]Department of Electrical and Computer Science Engineering, University of Minnesota, Minneapolis, MN, United States

1818. A Digital Power Amplifier for 1.5 T
Redi Poni[1, 2], Taner Demir[1, 2], Ergin Atalar, [2]
[1]Electrical and Electronics Engineering, Bilkent University, Ankara, Turkey; [2]UMRAM, Ankara, Turkey

1819. Optimization of Parallel RF Transmission Enabled by Concurrent Recording of RF and Gradient Fields
Mustafa Cavusoglu[1], Benjamin E. Dietrich[1], David O. Brunner[1], Klaas P. Pruessmann[1]
[1]Biomedical Engineering, ETH Zurich, Zurich, Switzerland

1820. Prediction of RF Preamplifier Noise Temperature Variations in a Magnetic Field
ISMRM MERIT AWARD magna cum laude
Cameron M. Hough[1], Russell L. Lagore[2], Cecilia Possanzini[3], Nicola De Zanche[1]
[1]Department of Oncology, University of Alberta, Edmonton, Alberta, Canada; [2]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States; [3]Philips Healthcare, Best, Netherlands

1821. An Integrated Negative Resistance Current Amplifier to Enhance the Sensitivity of a Weakly Coupled Local Detector
Chunqi Qian[1], Qi Duan[1], Stephen Dodd[1], Alan Koretsky[1], Joseph Murphy-Boesch[1]
[1]NIH, Bethesda, MD, United States

1822. The RTL-SDR USB Dongle: A Versatile Tool in the RF Lab
Roland Müller[1], Torsten Schlumm[1], André Pampel[1], Harald E. Möller[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Saxony, Germany

1823. Converting Digital MRI Receivers Built for 1.5T Into 7T Receivers Using Surface Acoustic Wave Filters
Mark Gosselink[1], Andrea Anzellotti[2], Giel Mens[2], Marco Boutelje[2], Bart Voermans[2], Hans Hoogduin[1], Peter R. Luijten[1], Cecilia Possanzini[2], Dennis W.J. Klomp[1]
[1]University Medical Center Utrecht, Utrecht, Netherlands; [2]Philips Healthcare, Best, Netherlands

1824. High Performance Probe for *In Vivo* Overhauser MRI
David E J Waddington[1, 2], Mathieu Sarracanie[1, 3], Najat Salameh[1, 3], Matthew S. Rosen[1, 3]
[1]MGH/A.A. Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [2]ARC Centre of Excellence for Engineered Quantum Systems, School of Physics, University of Sydney, Sydney, NSW, Australia; [3]Department of Physics, Harvard University, Cambridge, MA, United States

1825. Quadrifilar Helical Antenna as a Whole-Body Traveling-Wave RF Coil for 3T and 7T MRI
Branislav M. Notaros[1], Milan M. Ilic[1], Alexey A. Tonyushkin[2], Nada J. Sekeljic[1], Pranav Athalye[1]
[1]Department of Electrical and Computer Engineering, Colorado State University, Fort Collins, CO, United States; [2]Radiology Dept., Massachusetts General Hospital, Harvard Medical School, Boston, MA, United States

1826. Feasibility of a New Actuator Type for Magnetic Resonance Elastography Based on Transient Air Pressure Impulses
Jürgen Braun[1], Sebastian Hirsch[2], Tassilo Heinze[3], Ingolf Sack[2]
[1]Department of Medical Informatics, Charité - Universitätsmedizin Berlin, Berlin, Germany; [2]Department of Radiology, Charité - Universitätsmedizin Berlin, Berlin, Germany; [3]SPL Spindel und Präzisionslager GmbH, Sachsen, Germany

Traditional Poster
MR-PET, Gradients & Other Hardware

Exhibition Hall Tuesday 16:00-18:00

1827. Incorporation of TOF Information Reduces Artifacts in Simultaneous TOF PET/MR Scanning
Edwin G.W. ter Voert[1], Helen Davison, [12], Felipe de Galiza Barbosa[1, 3], Martin Huellner[1, 4], Patrick Veit-Haibach[1, 3], Gaspar Delso[5]
[1]Department of Medical Imaging, Division of Nuclear Medicine, University Hospital Zurich, Zurich, Switzerland; [2]Department of Medical Physics, Royal United Hospitals Bath NHS Foundation Trust, Bath, Somerset, United Kingdom; [3]Department of Diagnostic and Interventional Radiology, University Hospital Zurich, Zurich, Switzerland; [4]Department of Medical Imaging, Clinic of Neuroradiology, University Hospital Zurich, Zurich, Switzerland; [5]GE Healthcare, Waukesha, WI, United States

1828. Integrated PET/MR: Attenuation Correction and Implementation of a 16-Channel RF-Coil for Breast Imaging
Mark Oehmigen[1], Maike Lindemann[1], Titus Lanz[2], Sonja Kinner[3], Harald H. Quick[1, 4]
[1]High Field and Hybrid MR Imaging, University Hospital Essen, Essen, Germany; [2]Rapid Biomedical GmbH, Rimpar, Germany; [3]Institute for Diagnostic and Interventional Radiology and Neuroradiology, University Hospital Essen, Essen, Germany; [4]Erwin L. Hahn Institute for MR Imaging, University Duisburg-Essen, Essen, Germany

1829. Hybrid PEM/MRI, a New Approach for High Resolution Breast Imaging
Farouk Nouizi[1], Jaedu Cho[1], Alex Luk, Edward anashkin[2], Pavel Stepanov[2], Val zavarzin[2], Irving weinberg[2], Lydia Min-Ying Su[1], Gultekin Gulsen, Orhan Nalcioglu
[1]Radiology, University of California Irvine, Irvine, CA, United States; [2]Weinberg Medical Physics, LLC, Bethesda, MD, United States

1830. Novel Coil Design for a Simultaneous PET-MR System
Saikat Saha[1], Kyle Reiser[2]

[1]GE Healthcare, Waukesha, WI, United States; [2]GE Healthcare, WI, United States

1831. Investigation of Acoustic Noise Reduction Method for MRI-LINAC Hybrid System
Yaohui Wang[1], Feng Liu[1], Ewald Weber[1], Stuart Crozier[1]
[1]School of Information Technology and Electrical Engineering, The University of Queensland, Brisbane, Queensland, Australia

1832. Novel Approaches in the Coupled Circuit Simulation of Eddy Currents Induced by Cylindrical Gradient Coils
Md. Shahadat Hossain Akram[1], Koki Matsuzawa[1], Yasuhiko Terada[1], Katsumi Kose[1]
[1]Institute of Applied Physics, University of Tsukuba, Tsukuba, Ibaraki, Japan

1833. A Novel Acoustic Quiet Coil for Neonatal MRI System
ISMRM MERIT AWARD magna cum laude
Christopher M. Ireland[1, 2], Randy O. Giaquinto[2], Jean A. Tkach[2], Ronald G. Pratt[2], Charles L. Dumoulin[2]
[1]Department of Biomedical Engineering, University of Cincinnati, Cincinnati, OH, United States; [2]Imaging Research Center, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States

1834. A Straightforward Direct Optimization Method for Designing Biplanar Gradient Coils Using Artificial Bee Colony Algorithm
Yasuhiko Terada[1], Kazunori Ishizawa[1], Katsumi Kose[1]
[1]Institue of Applied Physics, University of Tsukuba, Tsukuba, Ibaraki, Japan

1835. Impact of Gradient Nonlinearity on the Accuracy of NMR Field Camera Readouts
Paul Chang[1, 2], Martin Eschelbach[1], Roland Syha[3], Klaus Scheffler[1], Anke Henning[1, 4]
[1]Max Planck Institute for Biological Cybernetics, Tuebingen, Baden-Wuerttemberg, Germany; [2]Graduate School of Neural & Behavioural Sciences, University of Tuebingen, Tuebingen, Baden-Wuerttemberg, Germany; [3]Diagnostic and Interventional Radiology, University Hospital Tuebingen, Tuebingen, Baden-Wuerttemberg, Germany; [4]Institute for Biomedical Engineering, UZH and ETH Zurich, Zurich, Switzerland

1836. Optimization of Matrix Gradient Coil Switching for a Limited Number of Amplifiers
Stefan Kroboth[1], Kelvin Layton[1], Feng Jia[1], Sebastian Littin[1], Huijun Yu[1], Maxim Zaitsev[1]
[1]Medical Physics, University Medical Center Freiburg, Freiburg, BW, Germany

1837. Comparison of Gradient Induced Heating Around an Active Implantable Medical Device
ISMRM MERIT AWARD magna cum laude
Shogo Horinouchi[1], Etsuko Kumamoto[2], Kagayaki Kuroda[3, 4]
[1]Graduate School of System Informatics, Kobe University, Kobe, Hyogo, Japan; [2]Information Science and Technology Center, Kobe University, Kobe, Japan; [3]Graduate School of Engineering, Tokai University, Hiratsuka, Japan; [4] Center for Frontier Medical Engineering, Chiba University, Chiba, Japan

1838. Sub-Ppb/K Temperature Drift of NMR Field Probes Using Intrinsic Magnetostatic Compensation
ISMRM MERIT AWARD magna cum laude
Simon Gross[1], Christoph Barmet[1, 2], Klaas Paul Pruessmann[1]
[1]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [2]Skope Magnetic Resonance Technologies, Zurich, Switzerland

1839. Design of Sample-Immersed Microcoil (SIM) Probes and Their Magnetic Field Monitoring Capabilities
ISMRM MERIT AWARD magna cum laude
Eric Michel[1], Daniel Hernandez[1], Min Hyoung Cho[1], Soo Yeol Lee[1]
[1]Kyung Hee University, Suwon, Gyeonggi-Do, Korea

1840. Assessment of the Aging Human Skin with a Unilateral NMR Scanner
Elad Bergman[1], Yifat Sarda[1], Noa Ritz[2], Edmond Sabo[2], Reuven Bergman[2], Uri Nevo[1]

[1]Biomedical Engineering, Tel Aviv University, Tel Aviv, Israel, Israel; [2]Departments of Dermatology and Pathology, Rambam Health Care Campus and The Bruce Rappaport Faculty of Medicine, Technion, Haifa, Israel, Israel

1841. A Novel 31-Channel Imaging Grid Coil
Wolfgang Loew[1], Nathan Lamba[2], Randy Giaquinto[1], Matthew Lanier[1], Lacey Sickinger[1], Brynne Williams[1], Christopher Ireland[1], Yu Li[1], Charles Dumoulin[1]
[1]Imaging Research Center, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States; [2]Ohio State University, OH, United States

1842. Low Eddy Current RF Shield Design for MR System
Saikat Saha[1]
[1]GE Healthcare, Waukesha, WI, United States

1843. Development of a Digital MRI Console Using General Purpose Digital Instruments and Board Computers
Makoto Tsuda[1], Daiki Tamada[1], Yasuhiko Terada[1], Katsumi Kose[1]
[1]University of Tsukuba, Tsukuba, Ibaraki, Japan

1844. Optimizing the Current-Mode Class D (CMCD) Amplifier for Decoupling in PTX Arrays
Michael Twieg[1], Mark A. Griswold[1, 2]
[1]Department of Electrical Engineering and Computer Science, Case Western Reserve University, Cleveland, OH, United States; [2]Department of Radiology, Case Western Reserve University, Cleveland, OH, United States

1845. Quench Propagation Study for Magnesium Diboride (MgB2) MRI Magnets
Charles Randall Poole[1], Tanvir Baig[1], Robert Deissler[1], Robert W. Brown[1], Michael A. Martens[1]
[1]Department of Physics, Case Western Reserve University, Cleveland, OH, United States

1846. Bias Field Correction on 7T Using Novel 3D Edge Detector and High-Order Legendre Polynomial Approximation.
Artem Mikheev[1], Henry Rusinek[1]
[1]Radiology, NYU Langone Medical Center, New York, NY, United States

ISMRM MERIT AWARD magna cum laude

1847. Magnetohydrodynamic Design of Radiofrequency Powered Microscopic Endocapsules in 3T MRI
T. Stan Gregory[1], Kevin J. Wu[1], Jasper Yu[1], James Brent Box[1], Rui Cheng[1], Leidong Mao[1], Guoyi Tang[2], Zion Tsz Ho Tse[1]
[1]College of Engineering, The University of Georgia, Athens, GA, United States; [2]Advanced Materials Institute, Tsinghua University, Shenzhen, Guangdong, China

Traditional Poster
Safety in MRI
Exhibition Hall Tuesday 16:00-18:00

1848. Use of a NURBS-Based, Full-Body Anatomy and FEA Model to Evaluate RF-Induced Heating During MR Imaging
Alan Leewood[1], Sharath Gopal[1], Kerim Genc[2], Steve Cockram[3], Philippe Young[3], Jeff Crompton[4], Josh Thomas[4]
[1]MED Institute, Inc., West Lafayette, IN, United States; [2]Simpleware Ltd, VA, United States; [3]Simpleware Ltd, Devon, United Kingdom; [4]AltaSim Technologies, LLC, OH, United States

1849. Rapid SAR Assessment of Electrically Thin Implantable Devices Using an Analytical Approach: Proof-Of-Principle for RF Heating of Coronary Stents at 7.0 T

Lukas Winter[1], Eva Oberacker[1], Celal Özerdem[1], Yiyi Ji[1], Florian von Knobelsdorff-Brenkenhoff[1, 2], Gerd Weidemann[3], Frank Seifert[3], Thoralf Niendorf[1, 2]
[1]Berlin Ultrahigh Field Facility (B.U.F.F.), Max-Delbrück Center for Molecular Medicine, Berlin, Germany; [2]Experimental and Clinical Research Center (ECRC), a joint cooperation between the Charité and the Max-Delbrueck Center for Molecular Medicine, Berlin, Germany; [3]Physikalisch Technische Bundesanstalt (PTB), Braunschweig and Berlin, Germany

1850. On the Subjective Acceptance During Cardiovascular Magnetic Resonance Imaging at 7.0 Tesla
Sabrina Klix[1], Antje Els[1], Katharina Paul[1], Andreas Graessl[1], Celal Oezerdem[1], Oliver Weinberger[1], Lukas Winter[1], Christof Thalhammer[1], Till Huelnhagen[1], Jan Rieger[1], Heidrun Mehling[2], Jeanette Schulz-Menger[2, 3], Thoralf Niendorf[1, 2]
[1]Berlin Ultrahigh Field Facility (B.U.F.F.), Max Delbrück Center for Molecular Medicine (MDC), Berlin, Germany; [2]) Experimental and Clinical Research Center (ECRC), a joint cooperation between the Charité Medical Faculty and the Max-Delbrueck-Center, Berlin, Germany; [3]HELIOS Klinikum Berlin-Buch, Dept. of Cardiology and Nephrology, Berlin, Germany

1851. Derived MRI Induced Maximum Torque (ASTM F2213) from Measured MRI Induced Maximum Force (Per ASTM F2052)
Richard Williamson[1], Michael Childers[1], Tushar Dharampal[1], Shiloh Sison[1], Amber Durica[1], Gabriel Mouchawar[1], John Nyenhuis[2]
[1]St. Jude Medical, Sylmar, CA, United States; [2]Purdue University, West Lafayette, IN, United States

1852. RF Current Measurements in Implanted Wires in Phantoms by Fiber Optic Current Clamps
Gerd Weidemann[1], Frank Seifert[2], Werner Hoffmann[2], Bernd Ittermann[2]
[1]Physikalisch-Technische Bundesanstalt , Braunschweig und Berlin, Germany; [2]Physikalisch-Technische Bundesanstalt, Braunschweig und Berlin, Germany

1853. Quantitative MR System Evaluation Using the KRMP-4 Phantom - Comparison with the ACR Phantom
Jong-Min Kim[1], Jang-Gyu Cha[2], Ji-Young Hwang[3], Seung-Eun Jung[4], Hyunn-Kyoon Lim[5], Do-wan Kim[6], Kwang-Su Kim[6], Sung-Jin Kang[2], Han-Joong Kim[1], Suchit Kumar[1], Junyong Park[7], Chulhyun Lee[7], Chang-Hyun Oh[1]
[1]Electronic and information engineering, Korea University, Seongbuk-Gu, Seoul, Korea; [2]Department of Radiology, Soonchunhyang University Bucheon Hospital, Seoul, Korea; [3]Department of Radiology, Ewha Women's University Mokdong Hospital, Seoul, Korea; [4]Department of Radiology, The Catholic University of Korea St. Mary's Hospital, Seoul, Korea; [5]Korea Research Institute of Standards and Science, Daejeon, Korea; [6]Korean Institute of Accreditation of Medical Imaging, Seoul, Korea; [7]The MRI Team, Korea Basic Science Institute, Chungcheongbuk-do, Korea

1854. RF Heating on a Vagus Nerve Stimulation Device During Head Imaging in a 3T Transmit Body Coil Using a Numerical Analysis
Mélina Bouldi[1, 2], Olivier David[1, 3], Stephan Chabardes, [34], Alexandre Krainik, [24], Jan M. Warnking[1, 3]
[1]Université Grenoble Alpes, Grenoble Institut des Neurosciences, Grenoble, Rhône-Alpes, France; [2]U836, Inserm , Grenoble, Rhône-Alpes, France; [3]U836, Inserm, Grenoble, Rhône-Alpes, France; [4]CHU de Grenoble, Rhône-Alpes, France

1855. Local SAR Estimation Via Electrical Properties Tomography: Physical Phantom Validations at 7T
Xiaotong Zhang[1], Jiaen Liu[1], Pierre-Francois Van de Moortele[2], Bin He[1, 3]
[1]Department of Biomedical Engineering, University of Minnesota, Minneapolis, MN, United States; [2]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States; [3]Institute for Engineering in Medicine, University of Minnesota, Minneapolis, MN, United States

1856. Retrospective Analysis of Data in RF Heating Tests of Small Passive Medical Implants
Ting Song[1], Maria Ida Iacono[1], Leonardo M. Angelone[1], Sunder Rajan[1]
[1]Center for Devices and Radiological Health, U.S. Food and Drug Administration, Silver Spring, MD, United States

1857. Heating of Lead Electrodes Disconnected from Sacral Stimulator During Routine Lumbar and Pelvic MRI at 1.5T with Receive-Only Coil
Pallab K. Bhattacharyya[1], Howard Goldman[2], Mark J. Lowe[1], Adrienne Quirouet[2], Stephen E. Jones[1]
[1]Imaging Institute, Cleveland Clinic, Cleveland, OH, United States; [2]Glickman Urological Institute, Cleveland Clinic, Cleveland, OH, United States

1858. Quantification of Ultrasonic Motor Behaviour in MRI
Peyman Shokrollahi[1], Wendong Wang[2], Adam C. Waspe[3], James M. Drake[3], Andrew A. Goldenberg[1]
[1]Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada; [2]School of Mechanical Engineering, Northwestern Polytechnical University, Xi'an, Shaanxi, China; [3]Hospital for Sick Children, Toronto, ON, Canada

1859. Optical E-Field Measurements in the MR Environment with High Spatial Resolution
Simon Reiß[1], Andreas Bitzer[2], Michael Bock[1]
[1]Radiology - Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]Biolab Technology AG, Zürich, Switzerland

1860. Correlation of Improved Local SAR Deposition with Reduced Shading Close to Hip Implants
Thomas Lottner[1, 2], Mathias Nittka[1], Theresa Bachschmidt[1, 3], Heiko Meyer[1], Wolfgang Nitz[1, 2]
[1]Siemens Healthcare, Erlangen, Germany; [2]University of Regensburg, Regensburg, Germany; [3]Experimental Physics 5, University of Würzburg, Würzburg, Germany

1861. MR Safety Investigation of RF Heating of a Generic Wire-Shaped Device Immersed to a Human Body Simulating Medium at 63.58 MHz (1.5 T MRI-Equivalent)
Mahdi Abbasi[1, 2], Gregor Schaefers[1], Amin Douiri[1], Daniel Erni[2]
[1]MR:comp GmbH, Gelsenkirchen, NRW, Germany; [2]General and Theoretical Electrical Engineering (ATE), University of Duisburg-Essen, Duisburg, NRW, Germany

1862. Mathematical Tools to Define SAR Margins for Phased Array Coil *In-Vivo* Applications Given E-Field Uncertainties
Guillaume Ferrand[1], Michel Luong[1], Alexis Amadon[2], Nicolas Boulant[2]
[1]DSM/IRFU/SACM, CEA-Saclay, Gif-sur-Yvette, France; [2]DSV/I2BM/Neurospin, CEA-Saclay, Gif-sur-Yvette, France

1863. Effect of Anisotropy on the Accuracy of Quantitative Conductivity Imaging. a Numerical Study
Nahla M H Elsaid[1], Adrian I. Nachman[2, 3], Weijing Ma[2], Tim P. DeMonte[4], Michael L G Joy, [12]
[1]IBBME, University of Toronto, Toronto, Ontario, Canada; [2]Electrical and Computer Engineering, University of Toronto, Toronto, Ontario, Canada; [3]Department of Mathematics, University of Toronto, Toronto, Ontario, Canada; [4]FieldMetrica Inc., Toronto, Ontario, Canada

1864. RF Safety Assessment of Simultaneous EEG-fMRI at 7T MR
Özlem Ipek[1], Joao Jorge[2, 3], Frederic Grouiller[4], Wietske van der Zwaag[1], Lijing Xin[2], Rolf Gruetter[2, 5]
[1]CIBM-AIT, EPFL, Lausanne, Vaud, Switzerland; [2]LIFMET, EPFL, Lausanne, Vaud, Switzerland; [3]Bioengineering, University of Lisbon, Lisbon, Portugal; [4]CIBM, Geneva University Hospital, Geneva, Switzerland; [5]Radiology, University of Lausanne, Lausanne, Vaud, Switzerland

1865. A Method for the Measurement of the RF Power Radiated by 7T Transmit Coils
Gerd Weidemann[1], Frank Seifert[1], Werner Hoffmann[1], Harald Pfeiffer[1], Bernd Ittermann[1]
[1]Physikalisch-Technische Bundesanstalt , Braunschweig und Berlin, Germany

1866. Ultra High Resolution 3D Gradient Recalled Echo with Reduced FOV Spiral Selective Excitation.
Malek I. Makki[1]
[1]MRI Research, University Children Hospital Zurich, Zurich, Switzerland

1867. Hearing Loss in Dogs After Routine Neurological MRIs
Rebecca Krimins[1, 2], Larry Gainsburg[3], Amanda Lauer[4], Meiyappan Solaiyappan[2], Dara Kraitchman[1, 2]
[1]Center for Image-Guided Animal Therapy, Johns Hopkins University, Baltimore, MD, United States; [2]Russell H. Morgan Department of Radiology and Radiological Science, Johns Hopkins University, Baltimore, MD, United States; [3]Mid-Atlantic Veterinary Neurology and Neurosurgery, Catonsville, MD, United States; [4]Department of Otolaryngology and Center for Hearing and Balance, Johns Hopkins University, Baltimore, MD, United States

1868. Improved MR Thermometry in the Presence of Non-Water Proton Signals
Jacco A. de Zwart[1], Peter van Gelderen[1], Qi Duan[1], Natalia Gudino[1], Cem M. Deniz[2], Leeor Alon[2], Jeff H. Duyn[1]
[1]Advanced MRI, LFMI, NINDS, National Institutes of Health, Bethesda, MD, United States; [2]Dept. of Radiology & Sackler Institute of Graduate Biomedical Sciences, NYU School of Medicine, New York, NY, United States

1869. Are MR Manufacturer-Reported Specific Absorption Rate Values on Clinical MRI Systems Correct?
Youngseob Seo[1], Min-Jae Kang[1]
[1]Center for Medical Metrology, Korea Research Institute of Standards and Science, Daejeon, Korea

1870. Spatially Localized Tissue Fingerprinting (STiF)
Shivaprasad Ashok Chikop[1], Antharikshanagar Bellappa Sachin Anchan[1], Arush Arun Honnedevasthana[1], Shaikh Imam[1], Sairam Geethanath[1]
[1]Medical Imaging Research Center, Dayananda Sagar Institutions, Bangalore, Karnataka, India

1871. Reducing the Peak SAR Surrounding Implanted Lead Tips in 3T MRI Using a High-Dielectric Helmet Former: A Numerical Feasibility Study
Zidan Yu[1], Sherman Xuegang Xin, [12], Christopher Collins[1]
[1]Bernard and Irene Schwartz Center for Biomedical Imaging, New York University School of Medicine, New York, United States; [2]Biomedical Engineering, Southern Medical University, Guangzhou, Guangdong, China

1872. Globally Applicable MR Safety Program for Medical Students
Steffen Sammet[1, 2], Christina Louise Sammet[3, 4]
[1]Department of Radiology, University of Chicago Medical Center, Chicago, IL, United States; [2]Department of Radiology, The Ohio State University, Columbus, OH, United States; [3]Department of Radiology, Ann & Robert H. Lurie Children's Hospital of Chicago, Chicago, IL, United States; [4]Department of Radiology, Northwestern University, Chicago, IL, United States

1873. Faster B1 Field and SAR Estimation in Parallel Transmit Arrays Without Tuning Using Voltage Sources
Hongbae Jeong[1], Konstantinos Papoutsis[1], Peter Jezzard[1], Aaron T. Hess[2]
[1]FMRIB Centre, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]Department of Cardiovascular Medicine, University of Oxford, Oxford, Oxfordshire, United Kingdom

1874. MRI in Patients with Cardiac Implantable Electronic Devices, Our Institutional Experience
Iva Petkovska[1], Bobby Kalb[1], John Hur[1], Peter Ott[2], Kusum Lata[2], Parinita Dherange[2], Isabel Oliva[1], Shannon Urbina[1], Hina Arif[1], Surya Chundru[1], James Costello[1], Diego Martin[1]
[1]Medical Imaging, University of Arizona, Tucson, AZ, United States; [2]Sarver Heart Center, University of Arizona, Tucson, AZ, United States

1875. Is Pacemaker Lead-Tip Heating Greater at 1.5T or 3T?
Deborah Anne Langman[1], Eric Aliotta[1, 2], Dan Margolis[1], J. Paul Finn[1, 2], Daniel B. Ennis[1, 2]
[1]Radiological Sciences, UCLA, Los Angeles, CA, United States; [2]Biomedical Physics IDP, UCLA, Los Angeles, CA, United States

1876. **RF Safety Evaluation of a Breast Expander Implant at 3.0T**
BuSik Park[1], Amir Razjouyan[2], Leonardo Angelone[2], Sunder s. Rajan[3]
[1]FDA/CBER, Silver Spring, MD, United States; [2]FDA/CDRH/OSEL, MD, United States; [3]Div. of Biomedical Physics, FDA/CDRH, Silver Spring, MD, United States

Traditional Poster
Molecular Imaging

Exhibition Hall Wednesday 10:00-12:00

1877. **Roemer-Optimal Reconstruction of Hyperpolarized 13C Cardiac Images with an 8 Channel Coil**
William Dominguez-Viqueira[1], Benjamin Geraghty[2, 3], Justin Y.C. Lau[2, 3], Albert P. Chen[4], Charles H. Cunningham[2, 5]
[1]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, Ontario , Canada; [2]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada; [3]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [4]GE Healthcare, Toronto, Ontario, Canada; [5]Medical Biophyscis, University of Toronto, Toronto, Ontario, Canada

1878. **^{19}F-Hyperpolarized Structures as Markers for the Improved Detection of Amyloid Plaques**
Ute Bommerich[1, 2], Thomas Trantzschel[1], Markus Plaumann[1], Denise Lego[2], Gerd Buntkowsky[3], Grit Sauer[3], Torsten Gutmann[3], Joachim Bargon[4], Johannes Bernarding[1]
[1]Institute for Biometrics and Medical Informatics, Otto von Guericke University Magdeburg, Magdeburg, Saxony-Anhalt, Germany; [2]Special Lab Non-invasive Brain Imaging, Leibniz Institute for Neurobiology, Magdeburg, Saxony-Anhalt, Germany; [3]Eduard-Zintl-Institute for Inorganic Chemistry, Technical University Darmstadt, Hesse, Germany; [4]Institute for Physical and Theoretical Chemistry, University Bonn, North Rhine-Westphalia, Germany

1879. **PHIP Hyperpolarization of Linear and Branched Fluorinated Alkanes as Well as Their Interaction with Cyclodextrins**
Markus Plaumann[1], Thomas Trantzschel[1], Jan Wüstemann[1], Denise Lego[2], Grit Sauer[3], Torsten Gutmann[3], Joachim Bargon[4], Gerd Buntkowsky[3], Johannes Bernarding[1], Ute Bommerich[1, 2]
[1]Department for Biometrics and Medical Informatics, Otto-von-Guericke University Magdeburg, Magdeburg, Saxony-Anhalt, Germany; [2]Special Lab Non-Invasive Brain Imaging, Leibniz Institute for Neurobiology, Magdeburg, Saxony-Anhalt, Germany; [3]Eduard-Zintl-Institute for Inorganic Chemistry, Technical University Darmstadt, Darmstadt, Hesse, Germany; [4]Institute of Physical and Theoretical Chemistry, University Bonn, Bonn, North Rhine-Westphalia, Germany

1880. **Speeding Up Dynamic Spiral Chemical Shift Imaging with Incoherent Sampling and Low-Rank Matrix Completion: Application in Hyperpolarized ^{13}C Metabolic Imaging**
Stephen DeVience[1], Dirk Mayer[1]
[1]Diagnostic Radiology, University of Maryland School of Medicine, Baltimore, MD, United States

1881. **The Effects of Acute and Chronic Up-Regulation of Pyruvate Dehydrogenase on Myocardial Metabolism**
Lucia F. Giles[1], Vicky Ball[1], Damian J. Tyler[1]
[1]Department of Physiology, Anatomy and Genetics, University of Oxford, Oxford, Oxfordshire, United Kingdom

1882. **Generation of Hyperpolarized Bicarbonate in Large Concentrations to Image PH**
Rajat K. Ghosh[1], Mehrdad Pourfathi[1], Stephen J. Kadlecek[1], Rahim R. Rizi[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States

1883. **Hyperpolarized [2-^{13}C]Dihydroxyacetone: Monitoring Hepatic Gluconeogenesis in Real-Time**
Karlos X. Moreno[1], Santhosh Satapati[1], Ralph J. DeBerardinis[2], Shawn C. Burgess[1], Craig R. Malloy[1], Matthew E. Merritt[1]
[1]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States; [2]Children's Medical Center Research Institute, UT Southwestern Medical Center, Dallas, TX, United States

1884. Partial-Volume Correction for Metabolic Imaging with Hyperpolarised [1-13C]Pyruvate
Rolf F. Schulte[1], Martin A. Janich[1], Ulrich Koellisch[1, 2], Markus Durst[1, 2], Florian Wiesinger[1], Eliane Ferral[2], Markus Schwaiger[2], Axel Haase[2], Marion I. Menzel[1]
[1]GE Global Research, Munich, Germany; [2]Technical University, Munich, Germany

1885. Hyperpolarized Ketone Body Metabolism in the *In Vivo* Rat Heart
Angus Z. Lau[1, 2], Jack J. Miller[2, 3], Damian J. Tyler[1, 2]
[1]Department of Cardiovascular Medicine, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]Department of Physiology, Anatomy, and Genetics, University of Oxford, Oxford, Oxfordshire, United Kingdom; [3]Department of Physics, University of Oxford, Oxford, Oxfordshire, United Kingdom

1886. Development of Hyperpolarized 13C-MRS Probes for Oxidative Stress Measurement
Arif Wibowo[1], Jae Mo Park, Ralph Hurd[2], Graham F Sommer[3], Chaitan Khosla[4], Daniel M Spielman
[1]arifw@stanford.edu, Stanford, CA, United States; [2]GE healthcare, CA, United States; [3]Diagnostic Radiology, Stanford University, CA, United States; [4]Chemistry and ChEM-H, Stanford University, CA, United States

1887. Quantitative Analysis for Hyperpolarized ^{13}C-Pyruvate Imaging: Comparison of Methods on a Clinical System.
Charlie J. Daniels[1], Mary A. McLean[2], Nicholas McGlashan[1], Martin J. Graves[1], Fraser J. Robb[3], David J. Lomas[1], Rolf F. Schulte[4], Kevin M. Brindle[2], Ferdia A. Gallagher[1, 2]
[1]Department of Radiology, University of Cambridge, Cambridge, United Kingdom; [2]Cancer Research UK Cambridge Institute, University of Cambridge, Cambridge, United Kingdom; [3]USA Instruments Inc., Aurora, OH, United States; [4]GE Global Research, Munich, Germany

1888. 31P Dynamic Nuclear Polarization Applied to Phosphonates for MRS/MRI Applications.
Roha Afzal[1, 2], Gary V. Martinez[1], Robert J. Gillies[1]
[1]Cancer Imaging and Metabolism, H.Lee Moffitt Cancer Centre, Tampa, FL, United States; [2]Chemical and Biomedical Engineering, University of South Florida, Tampa, FL, United States

1889. Hepatic Metabolism of Hyperpolarized [1-^{13}C]Pyruvate in the Zucker Rat
Jian-Xiong Wang[1, 2], Leila Fidelino[3], Karlos Moreno[3], A. Dean Sherry[3, 4], Craig Malloy[3, 5], Matthew E. Merritt[1, 6]
[1]AIRC, UT Southwestern Medical Center, Dallas, TX, United States; [2]Radiology, UT Southwestern Medical Center, Dallas, TX, United States; [3]AIRC, UT Southwestern Medical Center, TX, United States; [4]Chemistry, University of Texas at Dallas, TX, United States; [5]Internal Medicine, UT Southwestern Medical Center, TX, United States; [6]Radiology, UT Southwestern Medical Center, Dallas, United States

1890. Low Cell Number Perfusion Bioreactor System for Hyperpolarized MRS in a MRI Setting
Lotte Bonde Bertelsen[1], Simon Lauritsen[1], Christoffer Laustsen[1], Preben Daugaard[1], Xiaolu Zhang[1], Hans Stødkilde-Jørgensen[1]
[1]The MR Research Centre, Department of Clinical Medicine, Aarhus University, Aarhus University Hospital, Aarhus, Denmark

1891. Investigation of Metabolic Changes in STZ Induced Diabetic Rats with Hyperpolarized [1-13C]Acetate
Ulrich Koellisch[1], Christoffer Laustsen[2], Thomas S. Nørlinger[2], Concetta V. Gringeri[3], Marion I. Menzel[4], Rolf F. Schulte[4], Axel Haase[1], Hans Stødkilde-Jørgensen[2]
[1]Institute of Medical Engineering, Technische Universität München, Munich, Germany; [2]MR Research Centre, Aarhus University, Aarhus, Denmark; [3]Nuklearmedizinische Klinik und Poliklinik, Technische Universität München, Germany; [4]GE Global Research, Munich, Germany

1892. ^{19}F-MRI Applications of PERFECTA at 7T: Characterization Studies on Phantoms and on *In Vitro* Fibroblasts and T Cells.
Alfonso Mastropietro[1], Chiara Cordiglieri[2], Ilaria Tirotta[3, 4], Francesca Baldelli Bombelli[3, 4], Fulvio Baggi[2], Giuseppe Resnati[3, 4], Pierangelo Metrangolo[3, 4], Maria Grazia Bruzzone[5], Ileana Zucca[1]

[1]Scientific Direction Unit, Fondazione IRCCS Istituto Neurologico C. Besta, Milan, Italy; [2]Neurology IV Unit, Fondazione IRCCS Istituto Neurologico C. Besta, Milan, Italy; [3]Laboratory of Nanostructured Fluorinated Materials (NFMLab), Department of Chemistry, Materials, and, Politecnico di Milano, Milan, Italy; [4]Fondazione Centro Europeo Nanomedicina, Milan, Italy; [5]Neuroradiology Unit, Fondazione IRCCS Istituto Neurologico C. Besta, Milan, Italy

1893. Chemical Exchange Sensitive Spin-Lock MRI of 3-O-Methyl-D-Glucose Transport in Brain
Hunter Mehrens[1], Tao Jin[1], Seong-Gi Kim[1, 2]
[1]Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [2]Center for Neuroscience Imaging Research, Institue for Basic Science, SKKU, Suwon, Korea

1894. New PARACEST MRI Contrast Agents Based on the DOTMA Scaffold
Mojmir Suchy[1], Alex X. Li[2], Robert Bartha[2], Robert H. E. Hudson[1]
[1]Department of Chemistry, University of Western Ontario, London, Ontario, Canada; [2]Centre for Functional and Metabolic Mapping, University of Western Ontario, London, Ontario, Canada

1895. Enriching Fluorine Nanoparticles with Saturated Phosphoethanolamines to Improve Dendritic Cell Detection by ^{19}F Magnetic Resonance *In Vivo*
Sonia Waiczies[1], Stefano Lepore[1], Min-Chi Ku[1], Helmar Waiczies[1, 2], Conrad Martin[1], Susanne Drechsler[1], Karl Sydow[3], Margitta Dathe[3], Andreas Pohlmann[1], Thoralf Niendorf[1]
[1]Berlin Ultrahigh Field Facility (B.U.F.F.), Max Delbrück Center for Molecular Medicine, Berlin, Germany, Germany; [2]MRI.Tools GmbH, Berlin, Germany; [3]Leibniz-Institut für Molekulare Pharmakologie, Berlin, Germany

1896. Detecting Nanodiamonds with DNP
David E J Waddington[1, 2], Mathieu Sarracanie[1, 3], Huiliang Zhang, [34], David Reilly[2], Ronald L. Walsworth, [34], Matthew S. Rosen[1, 3]
[1]MGH/A.A. Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [2]ARC Centre of Excellence for Engineered Quantum Systems, School of Physics, University of Sydney, Sydney, NSW, Australia; [3]Department of Physics, Harvard University, Cambridge, MA, United States; [4]Harvard-Smithsonian Center for Astrophysics, Cambridge, MA, United States

1897. High Relaxivity MRI Contrast Agents Based on a Closo-Borane Platform
Shatadru Chakravarty[1, 2], Lixin Ma[1], Lalit N. Goswami[1], Satish S. Jalisatgi[1], M. Frederick Hawthorne[1]
[1]Radiology, International Institute of Nano and Molecular Medicine-University of Missouri-Columbia, Columbia, MO, United States; [2]Radiology, Michigan State University, East Lansing, MI, United States

1898. Vesicles Assembled from New Dendrimeric Amphiphiles and Their Applicative Potential as MRI-Based Theranostic Nanocarriers
Miriam Filippi[1], Deyssy Patrucco[1], Jonathan Martinelli[2], Lorenzo Tei[2], Mauro Botta[2], Enzo Terreno[1, 3]
[1]Department of Molecular Biotechnology and Health Sciences, Molecular Imaging Center, University of Turin, Turin, To, Italy; [2]Department of Sciences and Technological Innovation, University of Eastern Piedmont 'A. Avogadro', Alessandria, Al, Italy; [3]Center for Preclinical Imaging, University of Turin, Colleretto Giacosa, To, Italy

1899. Improved Liposomes-Based Ca(II) Responsive MRI Contrast Agents
Francesca Garello[1], Sandip Vibhute[2], Serhat Gunduz[2], Nikos K. Logothetis[2], Goran Angelovski[2], Enzo Terreno[1]
[1]University of Torino, Torino, Italy; [2]Max Planck Institute for Biological Cybernetics, TŸbingen, Germany

1900. Organic Radical Contrast Agents Based on Polyacetylenes Containing 2,2,6,6-Tetramethylpiperidine 1-Oxyl (TEMPO): Targeted MR /optical Bimodal Imaging of Folate Receptor Expressing HeLa Tumors *In Vitro* and *In Vivo*
Lixia Huang[1], Chenggong Yan[2], Danting Cui[2], Xiang Liu[2], Xiaodan Lu[2], Yichen Yan[3], Xiangliang Tan[2], Jun Xu[4], Yingjie Mei[5], Xinwei Lu[3], Yikai Xu[2], Ruiyuan Liu[3]
[1]Department of Medical Imaging Center, Nanfang Hospital, Southern Medical University,, Guangzhou, Guangdong, China; [2]Department of Medical Imaging Center, Nanfang Hospital, Southern Medical University, Guangzhou, Guangdong, China; [3]School of

Pharmaceutical Sciences, Southern Medical University, Guangzhou, Guangdong, China; [4]Department of Hematology, Nanfang Hospital, Southern Medical University, Guangzhou, Guangdong, China; [5]Philips Healthcare, Guangzhou, Guangdong, China

1901. Detection of Matrix Metalloproteinases Using an "on/off" ^{19}F MR Probe

Alex John Taylor[1], James Lee Krupa[2], Huw Williams[3], Dorothee P. Auer[1], Simon R. Johnson, Neil R. Thomas[2], Henryk Michael Faas[1]
[1]Sir Peter Mansfield Imaging Centre, School of Medicine, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]School of Chemistry, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [3]Centre for Biomolecular Sciences, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

1902. Perfluoro-15-Crown-5-Ether-Loaded Hollow Mesoporous Silica Spheres for 19F *In Vivo* MRI

Ina Vernikouskaya[1, 2], Alexander Pochert[3], Mika Linden[3], Volker Rasche[1, 2]
[1]Internal Medicine II, University Hospital of Ulm, Ulm, Baden-Wuerttemberg, Germany; [2]Small Animal MRI, University of Ulm, Ulm, Baden-Wuerttemberg, Germany; [3]Inorganic Chemistry II, University of Ulm, Ulm, Baden-Wuerttemberg, Germany

1903. Multifunctional Gd2O3-Loaded Nanoprobe for Targeted Molecular MR Imaging

Xiang Liu[1], Xiaodan Lu[1], Chenggong Yan[1], Danting Cui[1], Yichen Yan[2], Xinwei Lu[2], Queenie Chan[3], Jun Xu[4], Yikai Xu[1], Ruiyuan Liu[2]
[1]Department of Medical Imaging Center, Nanfang Hospital, Southern Medical University, Guangzhou, Guangdong, China; [2]School of Pharmaceutical Sciences, Southern Medical University, Guangzhou, Guangdong, China; [3]Philips Healthcare, HongKong, China; [4]Department of Hematology, Nanfang Hospital, Southern Medical University, Guangzhou, Guangdong, China

1904. Facilitating the EPR Effect and Improving Tumor Penetration and Nanoparticle Delivery with Ultrafine Iron Oxide Nanoparticle as Observed Via Its Dual-Contrast Effect

Jing Huang[1, 2], Liya Wang[1, 2], Hui Wu[1, 2], Lily Yang[3], Hui Mao[1, 2]
[1]Laboratory of Functional-Molecular Imaging and Nanomedicine, Emory University School of Medicine, Atlanta, GA, United States; [2]Radiology and Imaging Sciences, Emory University School of Medicine, Atlanta, GA, United States; [3]Surgery, Emory University, Atlanta, GA, United States

1905. Theranostic Prospects of Gadolinium-Based Mesoporous Silica Nanoparticle Probes for Functional MRI

Veronika Mamaeva[1, 2], Tina Pavlin[3, 4], Didem Sen Karaman[5], Diti Desai[5], Melanie Ostermann[1], Jessica Rosenholm[5], Emmet McCormack[1, 2]
[1]Department of Clinical Science, Hematology Section, University of Bergen, Bergen, Norway; [2]Department of Internal Medicine, Hematology Section, Haukeland University Hospital, Bergen, Norway; [3]Department of Biomedicine, Molecular Imaging Center, University of Bergen, Bergen, Norway; [4]Department of Radiology, Haukeland University Hospital, Bergen, Norway; [5]Laboratory of Physical Chemistry, Åbo Akademi University, Turku, Finland

1906. Brain Redox Imaging Using Nitroxide Contrast Agents in Pentylenetetrazol-Kindled Mice with EPR Imaging

Hirotada G. Fujii[1], Miho C. Emoto[1], Mayumi Yamato[2], Ken-ichi Yamada[2]
[1]Center for Medical Education, Sapporo Medical University, Sapporo, Hokkiado, Japan; [2]Faculty of Pharmaceutical Sciences, Kyushu University, Fukuoka, Japan

1907. A NIR830-Bevacizumab-Conjugated Iron Oxide Nanoparticle Probe for Vascular Endothelial Growth Factor (VGEF) Targeted MRI

Run Lin[1, 2], Jing Huang[1], Liya Wang[1], Yuancheng Li[1], Prieto Ventura Veronica E[1], Kevin Kim[1], Hui Mao[1]
[1]Department of Radiology and Imaging Sciences, Emory University School of Medicine, Atlanta, GA, United States; [2]Department of Radiology, the First Affiliated Hospital of Sun Yat-Sen University, Guangzhou, Guangdong, China

1908. Probing Gq-GPCR Signaling in Rat Primary Motor Cortex with Pharmacogenetic fMRI

Manasmita Das[1], Heather K. Decot[1], Yu-Chieh Kao[1], Oyarzabal Esteban[1], Yen-Yu Ian Shih[1]
[1]Biomedical Research Imaging Center, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States

1909. Engineering of a MRI Theranostic Agent for Detection and Treatment of Cerebrovascular Amyloid
Jens T. Rosenberg[1, 2], Kristen MJ Ahlschwede[3, 4], Edward K. Agyare[5], Geoffery L. Curran[4], Samuel C. Grant[1, 2], Karunya K. Kandimalla[3, 4]
[1]National High Magnetic Field Laboratory, Florida State University, Tallahassee, FL, United States; [2]Chemical & Biomedical Engineering, Florida State University, Tallahassee, FL, United States; [3]Pharmaceutics and Brain Barriers Research Center, University of Minnesota, Minneapolis, MN, United States; [4]Neurology, Neuroscience and Biochemistry/Molecular Biology, Mayo Clinic College of Medicine, Rochester, MN, United States; [5]College of Pharmacy and Pharmaceutical Science, Florida A&M University, Tallahassee, FL, United States

1910. An EDB Fibronectin Specific Contrast Agent for Molecular Imaging of Cancer Metastasis
Zheng Han[1], Zhuxian Zhou[1], Maneesh Gujrati[1], Zheng-Rong Lu[1]
[1]Department of Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States

1911. Improving Tumor Targeting and MRI of Pancreatic Cancer Using IGF-1R Targeted "Stealth" Iron Oxide Nanoparticles
Yuancheng Li[1, 2], Hongyu Zhou[3], Run Lin[1, 2], Liya Wang[1, 2], Jing Huang[1, 2], Hui Wu[1, 2], Lily Yang[3], Hui Mao[1, 2]
[1]Laboratory of Functional-Molecular Imaging and Nanomedicine, Emory University School of Medicine, Atlanta, GA, United States; [2]Department of Radiology and Imaging Sciences, Emory University School of Medicine, Atlanta, GA, United States; [3]Department of Surgery, Emory University School of Medicine, Atlanta, GA, United States

1912. Paramagnetic Micelles Targeting VCAM-1 Receptors for Imaging Inflamed Endothelium by MRI
Amerigo Pagoto[1], Rachele Stefania[2], Francesca Garello[2], Francesca Arena[2], Giuseppe Digilio[3], Silvio Aime[2], Enzo Terreno[2]
[1]University of Torino, Torino, Italy; [2]University of Torino, Italy; [3]University of Eastern Piedmont, Italy

1913. Functional Brain Mapping in ADHD Rats Using Manganese-Enhanced MRI
Chieh-Yin Chang[1], Chi-Ru Lai[1], Bor-Show Tzang[2], Vincent Chin-Hung Chen[3], Yeu-Sheng Tyan[1, 4], Jun-Cheng Weng[1, 4]
[1]School of Medical Imaging and Radiological Sciences, Chung Shan Medical University, Taichung, Taiwan; [2]Institute of Biochemistry and Biotechnology, Chung Shan Medical University, Taichung, Taiwan; [3]Department of Psychiatry, Chung Shan Medical University Hospital, Taichung, Taiwan; [4]Department of Medical Imaging, Chung Shan Medical University Hospital, Taichung, Taiwan

1914. Manganese Accumulations in Brain and Toenails Reflect Different Time Periods of Exposure
Chien-Lin Yeh[1, 2], Eric Ward[1], Sandy Snyder[1], Frank Rosenthal[1], Ulrike Dydak[1, 2]
[1]School of Health Sciences, Purdue University, West Lafayette, IN, United States; [2]Radiology and Imaging Sciences, Indiana University School of Medicine, Indianapolis, IN, United States

1915. Adult Neurogenesis and Olfactory Activity Regulate Olfactory Bulb Volume
Nikorn Pothayee[1], Diana Cummings[2], Timothy Schoenfeld[3], Heather Cameron[3], Leonardo Belluscio[2], Alan Koretsky[1]
[1]Laboratory of functional and molecular imaging, NINDS, NIH, Bethesda, MD, United States; [2]Developmental neural plasticity section, NINDS, NIH, Bethesda, MD, United States; [3]Neuroplasticity Section, NIMH, NIH, Bethesda, MD, United States

1916. Distinction Between Pro and Anti-Inflammatory Macrophages Using MRI Relaxometry and Quantitative Susceptibility Mapping
Wassef Khaled[1], Benjamin Leporq[1], Jing Hong Wan[1], Philippe Garteiser[1], Simon Auguste Lambert[1], Nathalie Mignet[2], Bich-Thuy Doan[2], Simona Manta[2], Sophie Lotersztajn[1], Bernard Edgar Van Beers[1]
[1]Center of research on inflammation, Paris 7 University; INSERM U1044, Paris, France; [2]Chemical, Genetic and Imaging Pharmacology Laboratory; CNRS UMR 8151; INSERM U1022, Faculty of Pharmacy, Paris Descartes University, Sorbonne Paris Cité, Chimie-ParisTech, Paris, France

1917. A Novel Assay for the *In Vivo* Detection of Reactive Oxygen Species Using MRI
Gary Stinnett[1], Kelly Ann Moore[1], Errol Loïc Samuel[2], Ming Ge[3], Brett Graham[3], James Tour[2], Robia G. Pautler[1]
[1]Molecular Physiology and Biophysics, Baylor College of Medicine, Houston, TX, United States; [2]Department of Chemistry, Rice University, Houston, TX, United States; [3]Molecular and Human Genetics, Baylor College of Medicine, Houston, TX, United States

1918. Non-Invasive Analysis of the Degree of Inflammatory Areas by *In Vivo* Time Course MRI Using Long Circulating Nanoparticles in Myocardial Inflammation Rat Model
Hyeyoung Moon[1], Jongeun Kang[2], Hyunseung Lee[1], Kwan Soo Hong[1, 2]
[1]Division of MR research, Korea Basic Science Institute, Cheongju, Chungcheongbuk-do, Korea; [2]Graduate School of Analytical Science and Technology, Chungnam National University, Daejeon, Korea

1919. Morphological and Quantitative Imaging of Iron Using MP-RAGE and UTE Sequences
Wen Hong[1], Qun He[2], Hongda Shao[2], Jiang Du[2]
[1]Radiology, China-Japan friendship hospital, Beijing, China; [2]Radiology, UC, San Diego, San Diego, CA, United States

1920. Characterization of Perfluorocarbon Relaxation Times and Optimization of Fluorine-19 MRI at 3 Tesla
Roberto Colotti[1, 2], Christine Gonzales[3], Juerg Schwitter[3], Ruud B. van Heeswijk[1, 2]
[1]Department of Radiology, University Hospital (CHUV) and University of Lausanne (UNIL), Lausanne, Switzerland; [2]Center for Biomedical Imaging (CIBM), Lausanne, Switzerland; [3]Division of Cardiology and Cardiac MR Center, Department of Internal Medicine, University Hospital of Lausanne (CHUV), Lausanne, Switzerland

1921. Disentangling Different Gadolinium Concentrations: A Comparison Between High Field and Very Low Field MRI.
Allegra Conti[1], Massimo Caulo[1, 2], Angelo Galante[3], Vittorio Pizzella[1, 2], Gian Luca Romani[1, 2], Stefania Della Penna[1, 2]
[1]Department of Neuroscience, Imaging and Clinical Sciences, G. D'Annunzio Univ. of Chieti and Pescara, Chieti, CH, Italy; [2]Institute for Advanced Biomedical Technologies (ITAB), G. D'Annunzio Univ. of Chieti and Pescara, Chieti, CH, Italy; [3]MESVA, Department of Life, Health & Environmental Sciences, L'Aquila University, L'Aquila, AQ, Italy

1922. Design of Implantable Alginate MRI PH Sensors for Cell Transplantation
Nikita Oskolkov[1, 2], Xiaolei Song[1, 2], Kannie W.Y. Chan[1, 2], Jeff W.M. Bulte[1, 2], Michael T. McMahon[1, 2]
[1]The Russell H. Morgan Department of Radiology and Radiological Science, Johns Hopkins School of Medicine, Baltimore, MD, United States; [2]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States

1923. Iron Retention in Nonproliferative Cancer Cells Allows for Tracking by MRI: An *In Vivo* Assay for Studying Cancer Cell Dormancy
Donna H . Murrell[1, 2], Fiona Dickson[1], Amanda M. Hamilton[1], Paula J. Foster[1, 2]
[1]Imaging, Robarts Research Institute, London, Ontario, Canada; [2]Medical Biophysics, Western University, London, Ontario, Canada

1924. Tracking and Quantification of T-Cells Labelled with Iron Oxide Nanoparticles Using Positive Contrast
Jinjin Zhang[1], Sidath C. Kumarapperuma[2], Katie Hurley[3], Hattie L. Ring[3], Michael Garwood[1]
[1]Center for Magnetic Resonance Research, Department of Radiology, University of Minnesota, Minneapolis, MN, United States; [2]Department of Medicinal Chemistry, University of Minnesota, MN, United States; [3]Department of Chemistry, University of Minnesota, MN, United States

1925. Labeling of Human Peripheral Blood Mononuclear Cells with a Fluorine-19 Perfluorocarbon Agent Permits Their *In Vivo* Detection Using Cellular MRI and Allows for Cancer Vaccine Formulation Comparisons
Corby Fink[1, 2], Jeffrey Gaudet, [23], Paula Foster, [23], Gregory Dekaban[1, 2]
[1]Microbiology and Immunology, Western University, London, Ontario, Canada; [2]Robarts Research Institute, London, ON, Canada; [3]Medical Biophysics, Western University, London, ON, Canada

1926. MR Molecular Imaging of Homing of Integrin-Linked Kinase-Overexpressing Mesenchymal Stem Cells After Transplantation Via Coronary in Swine Acute Myocardial Infarction Model

Dan Mu[1], Hong Ming Yu[2], Bin Zhu[3], Biao Xu[4], Wei Bo Chen[5]
[1]Drum Tower Hospital, Nanjing, Jiangsu, China; [2]Drum Tower Hospital, Jiangsu, China; [3]Radiology, Drum Tower Hospital, Nanjing, Jiangsu , China; [4]cardiology, Drum Tower Hospital, Jiangsu, China; [5]Philips Healthcare, Shanghai, China

1927. MRI Detection of Brain Metastases Labeled with Iron Oxide Nanoflowers

Emily Alexandria Waters[1], Luke Vistain[2], Liang Mu[3], Madhavi Puchalapalli[4], Chad Haney[1], Basma El Haddad[4], Brandon Parker[3], Thomas Meade[5], Jennifer Koblinski[4]
[1]Center for Advanced Molecular Imaging, Northwestern University, Evanston, IL, United States; [2]Interdisciplinary Biological Sciences Program, Northwestern University, Evanston, IL, United States; [3]Northwestern University, IL, United States; [4]Pathology, Virginia Commonwealth University, Richmond, VA, United States; [5]Chemistry, Northwestern University, Evanston, IL, United States

1928. *In Vivo* Quantification of Human Natural Killer Cells by ^{19}F MRI

Kai D. Ludwig[1], Myriam Bouchlaka[2], Jeremy Gordon[1], Christian Capitini[2], Sean B. Fain[1, 3]
[1]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States; [2]Pediatrics and Carbone Cancer Center, University of Wisconsin-Madison, Madison, WI, United States; [3]Radiology and Biomedical Engineering, University of Wisconsin-Madison, WI, United States

1929. Tracking Iron Labeled Stem Cells in Bone Injury Model Using MRI

May A. Taha[1], Roman Krawetz[2], Derrick E. Rancourt[2], John R. Matyas[3], Jeff F. Dunn[1]
[1]Department of Radiology, Calgary, Alberta, Canada; [2]Department of Biochemistry & Molecular Biology, Alberta, Canada; [3]Department of Comparative Biology and Experimental Medicine, Faculties of Medicine and Veterinary Medicine, University of Calgary, Alberta, Canada

1930. Comparison of Iron-Related MR Susceptibility and Transverse Relaxation Rates in the P19 Cell Model

Linshan Liu[1, 2], Neil Gelman[1, 2], Rebecca McGirr[1], R. Terry Thompson[1, 2], Frank S. Prato[1, 2], Lisa Hoffman[1, 2], Donna E. Goldhawk[1, 2]
[1]Imaging program, Lawson Health Research Institute, London, Ontario, Canada; [2]Medical Biophysics, Western University, London, Ontario, Canada

1931. Fluorine-19 Labelling of Stromal Vascular Fraction Cells for Clinical Imaging Applications

Laura C. Rose[1], Guan Wang[1], Brooke M. Helfer[2], Charles F. O'Hanlon[2], Amnon Bar-Shir[1], Dara L. Kraitchman[1], Ricardo L. Rodriguez[3], Jeff WM Bulte[1]
[1]Johns Hopkins University, Baltimore, MD, United States; [2]Research & Development, Celsense Inc, PA, United States; [3]CosmeticSurg LLC, Luthersville, MD, United States

1932. RRx-001 Oxidation of Redox Sensitive Protein Thiols in Tumors Measured by Gd-LC7-SH Enhanced MRI in Preclinical Tumor Models

Natarajan Raghunand[1], Jan Scicinski[2], Bryan Oronsky[2], Bhumasamudram Jagadish[3], Eugene A. Mash[3], Ronald L. Korn[4]
[1]Cancer Imaging & Metabolism, Moffitt Cancer Center, Tampa, FL, United States; [2]RadioRx Pharmaceuticals, Mountain View, CA, United States; [3]Dept. of Chemistry & Biochemistry, The University of Arizona, Tucson, AZ, United States; [4]Imaging Endpoints LLC, Scottsdale, AZ, United States

1933. Non-Invasive Assessment of Hyperthermic Ultrasound Enhanced Tumor Drug Delivery with CE-MRI

Nadia Rose Ayat[1], Rebecca Schur[1], Zheng-Rong Lu[1]
[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States

1934. Eight Channel Tx/Rx RF Coil Array for $^{1}H/^{19}F$ MR of the Human Knee and Fluorinated Drugs at 7.0 T
Yiyi Ji[1], Helmar Waiczies[1, 2], Lukas Winter[1], Pavla Neumanova[1], Daniela Hofmann[1], Jan Rieger[1, 2], Ralf Mekle[3], Sonia Waiczies[1], Thoralf Niendorf[1, 4]
[1]Berlin Ultrahigh Field Facility (B.U.F.F.), Max Delbrück Center for Molecular Medicine, Berlin, Germany; [2]MRI.TOOLS GmbH, Berlin, Germany; [3]Medical Physics, Physikalisch-Technische Bundesanstalt, Berlin, Germany; [4]Experimental and Clinical Research Center, a joint cooperation between the Charité Medical Faculty and the Max Delbrück Center, Berlin, Germany

1935. Initial Evaluation of an MR-Hyperthermia Activated Thermosensitive Drug Delivery System
Matthew Tarasek[1], Amanda Aleong[2, 3], Jinzi Zheng[2, 3], Yannan Dou[4], Christine Allen[3, 4], David Jaffray[3, 4], Tom Foo[1], Desmond T.B. Yeo[1]
[1]MRI, GE Global Research, Niskayuna, NY, United States; [2]Princess Margaret Cancer Centre, Toronto, Canada; [3]Techna Institute, University Health Network, Toronto, Canada; [4]University of Toronto, Toronto, Canada

1936. Functionalized Mesoporous Silica Iron Oxide Nanoparticles for Thermal Therapy and T_1 Contrast
Hattie L. Ring[1, 2], Katie R. Hurley[2], Michael Etheridge[3, 4], Jinjin Zhang[1, 5], Nathan D. Klein[2], Connie Chung, [34], Qi Shao[4], John C. Bischof, [34], Christy L. Haynes[2], Michael Garwood[1, 6]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States; [2]Chemistry, University of Minnesota, Minneapolis, MN, United States; [3]Mechanical Engineering, University of Minnesota, Minneapolis, MN, United States; [4]Biomedical Engineering, University of Minnesota, Minneapolis, MN, United States; [5]Physics, University of Minnesota, Minneapolis, MN, United States; [6]Radiology, University of Minnesota, Minneapolis, MN, United States

1937. Quantitative Treatment Response Mapping in Asthma Patients Using ^{3}He Ventilation MRI
Felix C. Horn[1], Helen Marshall[1], Richard Kay[2], Christopher E. Brightling[3], Juan Parra-Robles[1], Jim M. Wild[1]
[1]Academic Radiology, Sheffield University, Sheffield, South Yorkshire, United Kingdom; [2]Novartis, Switzerland; [3]University of Leicester, United Kingdom

1938. NanoIron Phantom to Validate *In-Vivo* Iron Mapping
Stephen E. Russek[1], Kathryn E. Keenan[1], Karl Stupic[1], Michael A. Boss[1], Zydrunas Gimbutas[1], Andrew M. Dienstfrey[1], Robert J. Usselman[2]
[1]NIST, Boulder, CO, United States; [2]University of Montana, Bozeman, MT, United States

1939. Machine Learning and Computer Vision Based Quantification of Cell Number in MRI-Based Cell Tracking
Muhammed Jamal Afridi[1], Matt Latourette[2], Margaret F. Bennewitz[3], Arun Ross[1], Xiaoming Liu[1], Erik M. Shapiro[2]
[1]Department of Computer Science and Engineering, Michigan State University, East Lansing, MI, United States; [2]Department of Radiology, Michigan State University, East Lansing, MI, United States; [3]Vascular Medicine Institute, University of Pittsburgh, Pittsburgh, PA, United States

Traditional Poster
MRS Acquisition Methods

Exhibition Hall Wednesday 10:00-12:00

1940. Natural Abundance of Glycogen and Lipids in Human Calf Muscle Measured Before and After Exercise by ^{13}C MRS at 7T
Eulalia Serés Roig[1], Rolf Gruetter[1, 2]
[1]Laboratory of Functional and Metabolic Imaging (LIFMET), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Vaud, Switzerland; [2]Department of Radiology, Universities of Lausanne and Geneva, Vaud, Switzerland

1941. Quantum Coherence Spectroscopy to Measure 1D ^{1}H-[^{13}C]-Lipid Signals
Lucas Lindeboom[1, 2], Robin A. de Graaf[3], Christine I. Nabuurs, [24], Matthijs KC Hesselink[4], Joachim E. Wildberger[2], Patrick Schrauwen[1], Vera B. Schrauwen-Hinderling[1, 2]
[1]Department of Human Biology, Maastricht University Medical Center, Maastricht, Netherlands; [2]Department of Radiology, Maastricht University Medical Center, Maastricht, Netherlands; [3]Department of Diagnostic Radiology, Magnetic Resonance Research Center, Yale University School of Medicine, New Haven, CT, United States; [4]Department of Human Movement Sciences, Maastricht University Medical Center, Maastricht, Netherlands

1942. *In Vivo* MR Spectroscopy of Human Breast Tissue: Composition of Lipids at Clinical Field Strength (3 T).
Amandine COUM[1, 2], Lobna OULDAMER[3, 4], Laurent BARANTIN[5], Fanny NOURY[1, 2], Anne VILDE[6], Aymeric SAINT-HILAIRE[6], Philippe BOUGNOUX, [47], Giulio GAMBAROTA[1, 2]
[1]LTSI, Université de Rennes 1, Rennes, France; [2]INSERM UMR 1099, Rennes, France; [3]Department of Gynecology, CHU Tours, Tours, France; [4]INSERM U1069, Université François-Rabelais, Tours, France; [5]INSERM U930, Université François-Rabelais, Tours, France; [6]Department of Radiology, CHU Tours, Tours, France; [7]Department of Oncology, CHU Tours, Tours, France

1943. A Novel Broadband Coil for Multinuclear Spectroscopy
Hai Lu[1], Shumin Wang[1]
[1]Auburn University, Auburn, AL, United States

1944. The Effect of the Chemical Shift Displacement Artefact on J-Modulation in the STEAM Sequence
Carolina Campanha Fernandes[1], Emma Louise Hall[2], Chen Chen[2], Peter Gordon Morris[2], Carlos Garrido Salmon[2, 3]
[1]Sir Peter Mansfield Imaging Centre , University of Nottingham, Nottingham, United Kingdom; [2]Sir Peter Mansfield Imaging Centre, University of Nottingham, Nottingham, United Kingdom; [3]Department of Physics, University of Sao Paulo, Ribeirao Preto, Brazil

1945. Influence of Different TE on Reliability of Brain Metabolites Quantification in High Field 1H MRS
Veronika Rackayova[1], Cristina Cudalbu[2], Lijing Xin[1], Nicolas Kunz[3], Jana Starcukova[4], Zenon Starcuk, Jr. [4], Rolf Gruetter[1, 2]
[1]Laboratory of Functional and Metabolic Imaging, Center for Biomedical Imaging, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Vaud, Switzerland; [2]Centre d'Imagerie Biomedicale (CIBM), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Vaud, Switzerland; [3]Centre d'Imagerie Biomedicale (CIBM-AIT), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Vaud, Switzerland; [4]Institute of Scientific Instruments of the Academy of Sciences of the Czech Republic, Brno, Czech Republic

1946. Requirements for Optimal B_0 Shimming for a Spectroscopy Voxel in the Frontal Cortex at Ultra-High Fields
Ariane Fillmer[1], Anke Henning, [12]
[1]Institute for Biomedical Engineering, UZH and ETH Zurich, Zurich, Switzerland; [2]Max Planck Institute for Biological Cybernetics, Tuebingen, Germany

1947. Long Echo Time *In-Vivo* Spectroscopy Without J-Modulation
Clark Lemke[1], Aaron Hess[2], Jamie Near[3], Stuart Clare[1], Peter Jezzard[1], Uzay Emir[1]
[1]FMRIB, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]OCMR, University of Oxford, Oxford, Oxfordshire, United Kingdom; [3]Douglas Institute, McGill University, Verdun, Quebec, Canada

1948. A Method to Obtain 2D High Resolution MRS Under Inhomogeneous Magnetic Fields
Liangjie Lin[1], Zhiliang Wei[1], Jian Yang[1], Yanqin Lin[1], Zhong Chen[1]
[1]Electronic Science, Xiamen University, Xiamen, Fujian, China

1949. Quantitation Error in ^{1}H MRS Caused by B_1 Inhomogeneity and Chemical Shift Displacement at High B_0 Field
Hidehiro Watanabe[1], Nobuhiro Takaya[1], Fumiyuki Mitsumori[1]
[1]Center for Environmental Measurement and Analysis, National Institute for Environmental Studies, Tsukuba, Ibaraki, Japan

1950. Comparison of GABA+ and Macromolecular-Suppressed GABA Measurements
Ashley D. Harris[1, 2], Nicolaas AJ Puts[1, 2], Peter B. Barker[1, 2], Richard A. E. Edden[1, 2]
[1]The Russell H Morgan Department of Radiology and Radiological Sciences, The John Hopkins School of Medicine, Baltimore, MD, United States; [2]F.M. Kirby Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States

1951. Measuring Glutathione Using 1H MR Spectroscopy at 3T: MEGA-PRESS Vs. STEAM
Felix Raschke[1], Ralph Noeske[2], Dorothee P. Auer[1], Dineen Rob[1]
[1]Sir Peter Mansfield Imaging Centre, School of Medicine, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]GE Healthcare, Berlin, Germany MR Application and Workflow Development, Berlin, Germany

1952. Glutathione Cannot Be Quantified Reliably from Short Echo PRESS Spectra
Faezeh Sanaei Nehzad[1], Adriana Anton[2], Bill Deakin[2], Stephen Williams[1]
[1]Center for Imaging Science, University of Manchester, Manchseter, United Kingdom; [2]Neuroscience and Psychiatry Unit, University of Manchester, Manchester, United Kingdom

1953. Measuring GABA Using 1H MR Spectroscopy at 3T: A Comparison of Techniques
Felix Raschke[1], Antonio Napolitano[2], Ralph Noeske[3], Dineen Rob[1], Dorothee P. Auer[1]
[1]Sir Peter Mansfield Imaging Centre, School of Medicine, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]Enterprise Risk Management, Unity of Imaging Research, Bambino Gesù Children's Hospital, Rome, Italy; [3]GE Healthcare, Berlin, Germany MR Application and Workflow Development, Berlin, Germany

1954. Glutathione Measurement Using Short-TE ^{1}H MRS at 3T: Accuracy and Precision Assessment
Lijing Xin[1, 2], Rolf Gruetter[3, 4]
[1] Laboratory for Functional and Metabolic Imaging (LIFMET) , École polytechnique fédérale de Lausanne, Lausanne, Vaud, Switzerland; [2]Department of Psychiatry, Lausanne University Hospital, Lausanne, Vaud, Switzerland; [3]Laboratory for Functional and Metabolic Imaging (LIFMET), École polytechnique fédérale de Lausanne, Lausanne, Vaud, Switzerland; [4]Department of Radiology, University of Lausanne and Geneva, Vaud, Switzerland

1955. 2D Correlated MRS as a Quantitative Method to Asses Liver Fatty Acid Composition of Ob/ob Mouse
Dimitri Martel[1], Jean Baptiste Langlois[2], Denis Friboulet[1], Olivier Beuf[1], Helene Ratiney[1]
[1]CREATIS; CNRS UMR 5220; INSERM U1044; Université Lyon 1; INSA Lyon, Villeurbanne, France; [2]CERMEP- Imagerie du Vivant, Bron, France

1956. Quantification of Individual and Group Uncertainty of Gamma-Aminobutyric Acid Concentration in Different Brain Regions Using Residual Bootstrap Analysis
Song Chen[1], Meng Chen[1], Congyu Liao[1], Linfei Wen[1], Darong Zhu[2], Xu Yan[3], Keith Heberlein[4], Jianhui Zhong[1]
[1]Center for Brain Imaging Science and Technology, Department of Biomedical Engineering, Zhejiang University, Hangzhou, Zhejiang, China; [2]Hangzhou First People's Hospital, Hangzhou, Zhejiang, China; [3]MR Collaboration NE Asia, Siemens Healthcare, Shanghai, China; [4]Siemens Medical Solutions USA, Inc, Malvern, PA, United States

1957. Editing Efficiency for Macromolecule-Suppressed and Unsuppressed J-Edited GABA Spectroscopy
Georg Oeltzschner[1, 2], Pallab K. Bhattacharyya[3, 4]
[1]Department of Diagnostic and Interventional Radiology, Medical Faculty, University Dusseldorf, Düsseldorf, Germany; [2]Institute of Clinical Neuroscience and Medical Psychology, Medical Faculty, Heinrich-Heine-University Düsseldorf, Düsseldorf, Germany; [3]Imaging Institute, Cleveland Clinic, Cleveland, OH, United States; [4]Cleveland Clinic Lerner College of Medicine - CWRU, Cleveland, OH, United States

1958. Resolution-Enhanced MRS of Red Bone Marrow Fat Via Intermolecular Double-Quantum Coherences in Human Knees
Jianfeng Bao[1, 2], Yuchuan Zhuang[1], Yanqin Lin[2], Zhong Chen[2], Jianhui Zhong[1]
[1]University of Rochester, Rochester, NY, United States; [2]Xiamen University, Xiamen, Fujian, China

1959. Accelerating NMR Spectroscopy with Low Rank Constraint on Time Domain Signal
Xiaobo Qu[1], Maxim Mayzel[2], Jian-Feng Cai[3], Zhong Chen[1], Vladislav Orekhov[2]
[1]Department of Electronic Science, Xiamen University, Xiamen, Fujian, China; [2]Swedish NMR Centre, University of Gothenburg, Gothenburg, Sweden; [3]Department of Mathematics, University of Iowa, Iowa City, IA, United States

1960. Six Fucose-α(1−2) Sugars and α-Fucose Assigned in Human Brain Using *In Vivo* L-COSY
Scott Gregory Quadrelli[1], Alexander Lin[2], Saadallah Ramadan[1], Carolyn Mountford[1, 3]
[1]Centre for MR in Health, The University of Newcastle, Callaghan, NSW, Australia; [2]Center for Clinical Spectroscopy, Brigham & Women's Hospital - Harvard Medical School, Boston, MA, United States; [3]Center for Clinical Spectroscopy, Brigham & Women's Hospital - Harvard Medical School, Boston, NSW, Australia

Traditional Poster
MRS Processing & Quantification

Exhibition Hall Wednesday 10:00-12:00

1961. Design of MRI-MRS Fused Phantom for Quantitative Evaluation of Metabolites and Enhanced Quality Assurance Testing
Kyu-Ho Song[1], Sang-Young Kim[1], Do-Wan Lee[1], Jin-Young Jung[1], Hyeon-Man Baek[2], Bo-Young Choe[1]
[1]Department of Biomedical Engineering, Research Institute of Biomedical Engineering, Seoul, Korea; [2]Center for Magnetic Resonance Research, Korea Basic Science Institute, Chungbuk, Korea

1962. The Effect of Software Processing Pipelines on 7T MRS Metabolite Quantification
Lotte C. Houtepen[1], Remmelt R. Schür[1], Vincent O. Boer[2], Bart van de Bank[3], Tom Scheenen[3], Anouk Marsman[4], Christiaan H. Vinkers[1], Dennis W.J. Klomp[2]
[1]Psychiatry, University Medical Center Utrecht, Utrecht, Netherlands; [2]Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [3]Radiology, Radboud University Nijmegen Medical Centre, Nijmegen, Gelderland, Netherlands; [4]Russell H. Morgan Department of Radiology and Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, United States

1963. Magnetic Resonance Spectroscopy Data De-Noising Using Semi-Classical Signal Analysis Approach: Application to *In-Vitro* MRS Data.
Meriem Taous Laleg[1], Zineb Kaisserli[1], Rick Achten[2, 3], Hacene Serrai[2, 3]
[1]King Abdullah University of Sciences and Engineering, Jeddah, Saudi Arabia; [2]University of Gent, Gent, Belgium; [3]universitair Ziukenhuis Gent, Gent, Belgium

1964. One-Class Classifier for Accurate Brain Tissue Classification from Noisy 1H-MRS Spectra
Keyvan Ghassemi[1, 2], Mohammadreza Khanmohammadi Khorami[1], Hamidreza Saligheh Rad[2, 3]
[1]Chemistry Department, Faculty of Science,, Imam Khomeini International University, Qazvin, Iran; [2]Quantitative MR Imaging and Spectroscopy Group, Research Center for Molecular and Cellular Imaging, Tehran University of Medical Sciences, Tehran, Iran; [3]Department of Medical Physics and Biomedical Engineering, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran

1965. The Influence of Macromolecule Baseline on ^{1}H Magnetic Resonance Spectroscopic Imaging Reproducibility
Rebecca Birch[1, 2], Andrew C. Peet[2, 3], Hamid Dehghani[4], Martin Wilson[2, 3]
[1]PSIBS Doctoral Training Centre, University of Birmingham, Birmingham, West Midlands, United Kingdom; [2]Department of Oncology, Birmingham Children's Hospital NHS Foundation Trust, Birmingham, West Midlands, United Kingdom; [3]School of Cancer Sciences, University of Birmingham, Birmingham, West Midlands, United Kingdom; [4]School of Computer Science, University of Birmingham, Birmingham, West Midlands, United Kingdom

1966. Correction for Tissue Fractions in GABA-Edited MRS
Ashley D. Harris[1, 2], Nicolaas AJ Puts[1, 2], Richard A. E. Edden[1, 2]
[1]The Russell H Morgan Department of Radiology and Radiological Sciences, The John Hopkins School of Medicine, Baltimore, MD, United States; [2]F.M. Kirby Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States

1967. MRS Data Quantification Through the KBDM: Reducing the Effect of Noise by Using Multiple Signal Truncations
Danilo Mendes Dias Delfino da Silva[1], Thales Sinelli Lima[1], Alberto Tannús[1], Claudio José Magon[1], Fernando Fernandes Paiva[1]

[1]Department of Physics and Interdisciplinary Science, Sao Carlos Institute of Physics, University of Sao Paulo, Sao Carlos, Sao Paulo, Brazil

1968. A Lorentzian-Function-Sparsity Approach for Fast High-Dimensional Magnetic Resonance Spectroscopy
Boyu Jiang[1], Xiaoping Hu[2], Hao Gao[1, 3]
[1]School of Biomedical Engineering, Shanghai Jiao Tong University, Shanghai, China; [2]Department of Biomedical Engineering, Emory University and Georgia Institute of Technology, Atlanta, GA, United States; [3]Department of Mathematics, Shanghai Jiao Tong University, Shanghai, Shanghai, China

1969. Simple Method for Automatic Frequency and Phase Alignment of *In-Vivo* MR Spectra
Evita C. Wiegers[1], Bart Philips[1], Hanne M. M. Rooijackers[2], Alan J. Wright[3], Arend Heerschap[1], Marinette van der Graaf[1, 4]
[1]Radiology and Nuclear Medicine, Radboud University Medical Center, Nijmegen, Gelderland, Netherlands; [2]Internal Medicine, Radboud University Medical Center, Nijmegen, Gelderland, Netherlands; [3]Cancer Research UK Cambridge Institute, University of Cambridge, Cambridge, United Kingdom; [4]Pediatrics, Radboud University Medical Center, Nijmegen, Gelderland, Netherlands

1970. Water Sidebands Removal in Spectral Fitting
Jan Willem van der Veen[1], Stefano Marenco[2], Jun Shen[1]
[1]Magnetic Resonance Spectroscopy Core, NIH, NIMH, Bethesda, MD, United States; [2]CTNB, NIH, NIMH, Bethesda, MD, United States

1971. A New Algorithm for the Fusion of MRSI & MRI on the Brain Tumour Diagnosis
Xin Liu[1], Yuqian Li[1], Yiming Pi[1], Sofie Van Cauter[2], Yi Yao[3, 4], Jiunjie Wang[5]
[1]School of Electronic Engineering, University of Electronic Science and Technology of China, Chengdu, China; [2]Department of Radiology, University Hospitals Leuven, Belgium; [3]School of Communication and Information Engineering, University of Electronic Science and Technology of China, Chengdu, China; [4]National Key Laboratory of Science and Technology on Communications, China; [5]Department of Medical Imaging and Radiological Sciences, ChangGung University, Taiwan

1972. Joint Estimation of Spectral Parameters from MR Spectroscopic Imaging Data
Qiang Ning[1], Chao Ma[2], Zhi-Pei Liang[1, 2]
[1]Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana-Champaign, Urbana, IL, United States

1973. Multimodal Post-Processing Software for MRSI Data Evaluation
Michal Považan[1], Bernhard Strasser[1], Gilbert Hangel[1], Stephan Gruber[1], Siegfried Trattnig[1], Wolfgang Bogner[1]
[1]MRCE, Department of Biomedical Imaging and Image-guided therapy, Medical University Vienna, Vienna, Austria

1974. Test-Retest Quantitation of Absolute Metabolite Concentrations with Partial Volume Correction Using Different Segmentation Methods
Ahmad Seif Kanaan[1, 2], André Pampel[1], Kirsten Müller-Vahl[2], Harald E. Möller[1]
[1]Nuclear Magnetic Resonance, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Sachsen, Germany; [2]Department of Psychiatry, Social Psychiatry and Psychotherapy, Medical School of Hannover, Hannover, Niedersachsen, Germany

1975. Absolute Metabolite Quantification of ^{31}P MRS Spectra in the Rat Brain *In Vivo* at 17.2 Tesla Using LCModel
Alfredo Liubomir Lopez Kolkovsky[1], Fawzi Boumezbeur[1]
[1]Neurospin, I2BM, Commissariat à l'Energie Atomique, Gif-sur-Yvette, Essonne, France

1976. Don't Use Relative Cramer Rao Lower Bounds for Elimination of Low Quality Data!
Roland Kreis[1], Sreenath Pruthviraj Kyathanahally[1]
[1]Depts. Radiology and Clinical Research, University Bern, Bern, Switzerland

1977. **Necessity of Tissue Volume Composition Correction for Internal Referencing**
Niklaus Zoelch[1], Andreas Hock[1, 2], Milan Scheidegger[1, 2], Lea Hulka[2], Boris Quednow[2, 3], Anke Henning[1, 4]
[1]Institute for Biomedical Engineering, UZH and ETH Zurich, Zurich, Switzerland; [2]Department of Psychiatry, Psychotherapy and Psychosomatics Hospital of Psychiatry, University of Zurich, Zurich, Switzerland; [3]Zurich Center for Integrative Human Physiology, University of Zurich, Zurich, Switzerland; [4]Max Planck Institute for Biological Cybernetics, Tuebingen, Germany

1978. **Comparison of Different Methods for Combination of Multichannel Spectroscopy Data**
Ioannis Angelos Giapitzakis[1], Anke Henning[1, 2]
[1]Max Planck Institute for Biological Cybernetics, Tuebingen, Baden-Wuerttemberg, Germany; [2]Institute for Biomedical Engineering, UZH and ETH Zurich, Zurich, Switzerland

Traditional Poster
MRS Animal Cells

Exhibition Hall Wednesday 10:00-12:00

1979. **Mapping Stimulus-Evoked Glutamate and Lactate Changes in the Mouse Brain Using Spectroscopic Imaging**
Aline Seuwen[1], Aileen Schröter[1], Markus Rudin[1, 2]
[1]Institute for Biomedical Engineering, ETH & University of Zürich, Zürich, Switzerland; [2]Institute for Pharmacology and Toxicology, University of Zürich, Zürich, Switzerland

1980. **High Glutamine C57BL/6 Mice**
Ivan Tkac[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States

1981. ***In Vivo* Longitudinal Measurements of Brain Energy Metabolism in Chronic Hepatic Encephalopathy in a Rat Model Using 31P MRS and 1H MRS**
Veronika Rackayova[1], Bernard Lanz[1], Corina Berset[2], Rolf Gruetter[1, 2], Valérie A. McLin[3], Olivier Braissant[4], Cristina Cudalbu[2]
[1]Laboratory of Functional and Metabolic Imaging, Center for Biomedical Imaging, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Vaud, Switzerland; [2]Centre d'Imagerie Biomedicale (CIBM), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Vaud, Switzerland; [3]Swiss Center for Liver Disease in Children, Department of Pediatrics, University Hospitals Geneva, Geneva, Switzerland; [4]Service of Biomedicine, University Hospital of Lausanne, Lausanne, Vaud, Switzerland

1982. **Influence of Short-Term Intermittent Ethanol Exposure and Abstinence on Cerebral Neurometabolite Concentrations Determined by *Ex Vivo* 11.7-T Proton Nuclear Magnetic Resonance Spectroscopy**
Do-Wan Lee[1, 2], Jung-Whan Min[3], Jung-Hoon Lee[1, 4], Kyu-Ho Song[1], Bo-Young Choe[1]
[1]Department of Biomedical Engineering, and Research Institute of Biomedical Engineering, The Catholic University of Korea College of Medicine, Seoul, Korea; [2]Asan Institute for Life Sciences, Asan Medical Center, Seoul, Korea; [3]Department of Radiological Science, The Shingu University College of Korea, Seongnam, Korea; [4]Department of Radiology, Kyunghee Medical Center, Seoul, Korea

1983. **1H-MRS of Human Pancreas Grafts: Relaxation Times and Metabolite Concentrations**
Jan Weis[1], Lina Carlbom[1], Lars Johansson[1], Alireza Biglarnia[2], Olle Korsgren[3], Håkan Ahlström[1]
[1]Department of Radiology, Oncology and Radiation Science, Uppsala University, Uppsala, Sweden; [2]Department of Surgical Sciences, Uppsala University, Uppsala, Sweden; [3]Department of Immunology, Genetics and Pathology, Uppsala University, Uppsala, Sweden

1984. **Optimized Protocol and Evaluation of Referencing Methods in Quantitative 1H NMR Lipid Analysis**
Santosh Kumar Bharti[1], Zaver Bhujwalla[2]
[1]Div. of Cancer Imaging Research, The Russell H. Morgan Dept. of Radiolog and Radiological science , Johns Hopkins University, School of Medicine, Baltimore, MD, United States; [2]Div. of Cancer Imaging Research, The Russell H. Morgan Dept. of Radiolog and Radiological science, Johns Hopkins University, School of Medicine, Baltimore, MD, United States

1985. Action of Antibiotics Characterized and Predicted by NMR Metabolomics
Verena Hoerr[1, 2], Gavin E. Duggan[3], Lori Zbytnuik[4], Karen K.H. Poon[4], Bettina Löffler[2], Hans J. Vogel[3]
[1]Department of Clinical Radiology, University Hospital Muenster, Muenster, Germany; [2]Institute of Medical Microbiology, Jena University Hospital, Jena, Germany; [3]Department of Biological Sciences, University of Calgary, Calgary, Alberta, Canada; [4]Department of Physiology and Pharmacology, University of Calgary, Calgary, Alberta, Canada

1986. Lipid Characterization of Different Organs Using HR-MAS NMR Spinning Speed Variation.
Gaëlle Diserens[1], Christina Precht[2], Martina Vermathen[3], Anna Oevermann[4], Chris Boesch[1], Peter Vermathen[1]
[1]Depts. Radiology and Clinical Research, University Bern, Bern, Switzerland; [2]Dept. of Clinical Veterinary Medicine, University Bern, Bern, Switzerland; [3]Dept. of Chemistry & Biochemistry, University Bern, Bern, Switzerland; [4]Dept. of Clinical Research and Veterinary Public Health, University Bern, Bern, Switzerland

1987. Direct Determination of Phosphate Sugars in Biological Material by ^{1}H High Resolution-Magic Angle Spinning (HR-MAS) NMR Spectroscopy
Gaëlle Diserens[1], Martina Vermathen[2], Ilche Gjuroski[2], Sandra Eggimann[3], Christina Precht[4], Chris Boesch[1], Peter Vermathen[1]
[1]Depts. Radiology and Clinical Research, University Bern, Bern, Switzerland; [2]Dept. of Chemistry & Biochemistry, University Bern, Bern, Switzerland; [3]University Institute of Clinical Chemistry, Bern University Hospital, Bern, Switzerland; [4]Dept. of Clinical Veterinary Medicine, University Bern, Bern, Switzerland

1988. Metabolic Profiling of Milk in Preeclampsia Patients & Healthy Controls: An *In-Vitro* NMR Study
Naranamangalam R. Jagannathan[1], Deepti Upadhyay[1], Uma Sharma[1], Kamini Dangat[2], Anita Kilari[2], Savita Mehendale[3], Sanjay Lalwani[4], Sadhana Joshi
[1]Department of NMR & MRI Facility, All India Institute of Medical Sciences, New Delhi, Delhi, India; [2]Department of Nutritional Medicine, Bharati Vidyapeeth University, Pune, Maharashtra, India; [3]Department of Obstetrics and Gynecology, Bharati Vidyapeeth University, Pune, Maharashtra, India; [4]Department of Pediatrics, Bharati Vidyapeeth University, Pune, Maharashtra, India

1989. Metabolic Perturbations of Rat Spleen Due to Chronic Cold Stress: 1H NMR Based Metabolomic Study
SONIA GANDHI[1], HEMANTH KUMAR B S[1], SUNIL KOUNDAL[1], SHUBHRA CHATURVEDI[2], RAJENDRA P. TRIPATHI[1], SUBASH KHUSHU[1]
[1]NMR Research Centre, INMAS, DELHI, India; [2]Division and Cyclotron & Radiopharmaceutical Sciences, INMAS, DELHI, India

1990. Proton NMR-Based Metabolomic Profiling in Pulmonary Tuberculosis Patients
Savita Singh[1], Sujeet Mewar[2], Deepti Upadhyay[2], Uma Sharma[2], Anand Jaiswal[3], Rohit Sarin[3], Naranamangalam R. Jagannathan[2], H K. Prasad[1]
[1]Department of Biotechnology, All India Institute of Medical Sciences, New Delhi, Delhi, India; [2]Department of NMR and MRI Facility, All India Institute of Medical Sciences, New Delhi, Delhi, India; [3]Department of TB and Respiratory Diseases, National Institute of Tuberculosis and Respiratory Diseases, New Delhi, Delhi, India

1991. Elevated Levels of Acetate in ^{1}H NMR of Urine Could Have Diagnostic Utility in Pediatric Urinary Tract Infection
Omkar B. Ijare[1], Tedros Bezabeh[1, 2], Tom Blydt-Hansen[3], Martin Reed[4], Ian C.P. Smith[1]
[1]Chemistry, University of Winnipeg, Winnipeg, MB, Canada; [2]Human Nutritional Sciences, University of Manitoba, Winnipeg, MB, Canada; [3]Pediatrics, University of British Columbia, Vancouver, BC, Canada; [4]Radiology, University of Manitoba, Winnipeg, MB, Canada

1992. *Ex Vivo* Quality-Related Changes in Fish Muscle and Fish Eggs During Storage by High-Resolution ^{1} H Magnetic Resonance Spectroscopy Via Spatial Encoding Intermolecular Single-Quantum Coherence
Xiaohong Cui[1], Yali Jin[1], Honghao Cai[1], Yulan Lin[1], Zhong Chen[1]
[1]Department of Electronic Science, Fujian Provincial Key Laboratory of Plasma and Magnetic Resonance, Xiamen University, Xiamen, Fujian, China

1993. High Resolution Magic Angle Spinning 1H NMR Spectroscopic Investigation of Listeria Brainstem Encephalitis in Small Ruminants: Preliminary Results
Christina Precht[1], Gaëlle Diserens[2], Martina Vermathen[3], Anna Oevermann[4], Torsten Seuberlich[4], Josiane Lauper[1], Daniela Gorgas[1], Chris Boesch[2], Peter Vermathen[2]
[1]Dept. of Clinical Veterinary Medicine, University Bern, Bern, Switzerland; [2]Depts. Radiology and Clinical Research, University Bern, Bern, Switzerland; [3]Dept. of Chemistry and Biochemistry, University Bern, Bern, Switzerland; [4]Dept. of Clinical Research and Veterinary Public Health, University Bern, Bern, Switzerland

1994. Metabonomics Study of Urine in Patients with Celiac Disease Using *In-Vitro* Proton MR Spectroscopy
Naranamangalam R. Jagannathan[1], Deepti Upadhyay[1], Uma Sharma[1], Prasenjit Das[2], Siddharth Dutta Gupta[2], Govind K. Makharia[3]
[1]Department of NMR and MRI Facility, All India Institute of Medical Sciences, New Delhi, Delhi, India; [2]Department of Pathology, All India Institute of Medical Sciences, New Delhi, Delhi, India; [3]Department of Gastroenterology & Human Nutrition, All India Institute of Medical Sciences, New Delhi, Delhi, India

1995. A High-Resolution 2D J-Resolved NMR Method for Intact Biological Samples
Yuqing Huang[1], Chunhua Tan[1], Shuhui Cai[1], Zhong Chen[1]
[1]Electronic Science, Xiamen University, Xiamen, Fujian, China

Traditional Poster
Non Proton MRI
Exhibition Hall Wednesday 10:00-12:00

1996. B_0 Insensitive Biexponentially Weighted ^{23}Na Imaging
Nadia Benkhedah[1], Armin M. Nagel[1]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

1997. Assessing Water Influx and Retention in the Brain of AQP4 Knockout Mice by ^{17}O-MRI
Yifan Zhang[1], Bernadette O. Erokwu[2], Yuchi Liu[1], George W. Farr[3, 4], Walter F. Boron[4], Chris A. Flask[5, 6], Xin Yu, [45]
[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Radiology, Case Western Reserve University, Cleveland, OH, United States; [3]Aeromics, LLC, Cleveland, OH, United States; [4]Physiology and Biophysics, Case Western Reserve University, Cleveland, OH, United States; [5]Biomedical Engineering and Radiology, Case Western Reserve University, Cleveland, OH, United States; [6]Pediatrics, Case Western Reserve University, Cleveland, OH, United States

1998. Sodium (23Na) and UTE MRI for Detection of Nerve Cell Injuries in Concussed Patients: Preliminary Study
Yongxian Qian[1], Luke C. Henry[2]
[1]Qian's Lab for MRI, General Labs Cloud LLC, Pittsburgh, PA, United States; [2]Department of Orthopaedic Surgery, University of Pittsburgh, Pittsburgh, PA, United States

1999. Prediction of Treatment Response in Pancreatic Cancer Using EPR Oxygen Imaging
Shingo Matsumoto[1, 2], Keita Saito[1], Jeeva P. Munasinghe[3], Nallathamby Devasahayam[1], James B. Mitchell[1], Robert J. Gillies[4], Murali C. Krishna[1]
[1]Radiation Biology Branch, National Cancer Institute, NIH, Bethesda, MD, United States; [2]Hokkaido University, Sapporo, Hokkaido, Japan; [3]Mouse Imaging Facility, NINDS, NIH, Bethesda, MD, United States; [4]Imaging and Metabolism, H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL, United States

2000. *In Vivo* Chloride Quantification with Partial Volume Corrected ^{35}Cl-MRI
Sebastian C. Niesporek[1], Aaron S. Kujawa[1], Nadia Benkhedah[1], Armin M. Nagel[1]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

2001. **3D-DLCS Reconstruction of Asymmetrically Undersampled Radial ^{23}Na-MRI**
Nicolas G. R. Behl[1], Christine Gnahm[1], Peter Bachert[1], Armin M. Nagel[1]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

Traditional Poster
MRS Normal & Ageing Brain
Exhibition Hall Wednesday 10:00-12:00

2002. **Reduced NAA and Glutamate in Healthy Military Subjects Compared to Civilian Controls**
Huijun Liao[1], Kristin Heaton[2], Praveen Merugumala[1], Jessica Saurman[2], Xi Long[1], Irina Orlovsky[2], Sai Merugumala[1], Kelly Rudolph[2], Nicole Murphy[2], Benjamin Rowland[1], Alexander P. Lin[1]
[1]Center for Clinical Spectroscopy, Brigham and Women's Hospital, Boston, MA, United States; [2]Military Performance Division, US Army Research Institute of Environmental Medicine, Natick, MA, United States

2003. **Quantitative Evaluation of the First Order Rate Constant of Creatine-Kinase Reaction in Ovine Heart Using Magnetization Transfer ^{31}P Magnetic Resonance Spectroscopy (MT-^{31}P-MRS)**
Bijaya Thapa[1], Marjanna Dahl[2], Deborah Frank[2], Phillip Burch[3], Eun-Kee Jeong[1, 4]
[1]Dept. of Physics and Astronomy, Utah Center for Advanced Imaging Research,, University of Utah, Salt Lake City, UT, United States; [2]Dept. of Pediatrics, University of Utah, UT, United States; [3]Dept. of Surgery, University of Utah, UT, United States; [4]Dept. of Radiology, Korea University, Seoul, Korea

2004. ***In Vivo* Quadrupolar Splitting of Potassium (^{39}K) MR Spectra in Human Thigh Muscle**
Manuela B. Rösler[1], Nadia Benkhedah[2], Armin M. Nagel[2], Tanja Platt[2], Peter Bachert[2], Reiner Umathum[2]
[1]Medical Physics in Radiology , German Cancer Research Center (DKFZ), Heidelberg, Germany; [2]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

2005. **Detection of GABA Concentration in ACC and OCC by MEGA-PRESS**
Darong Zhu[1], Song Chen[2], Xu Yan[3], Linfei Wen[2], Congyu Liao[2], Meng Chen[2], Keith Heberlein[4], Jianhui Zhong[2]
[1]Hangzhou First People's Hospital, Hangzhou, Zhejiang, China; [2]Center for Brain Imaging Science and Technology, Department of Biomedical Engineering, Zhejiang University, Hangzhou, Zhejiang, China; [3]MR Collaboration NE Asia, Siemens Healthcare, Shanghai, China; [4]Siemens Medical Solutions USA, Inc, Malvern, PA, United States

2006. **Evaluation of Glutamatergic Metabolism and Its Role in Neurovascular Coupling by Combined Proton Magnetic Resonance Spectroscopy and Pseudo-Continuous Arterial Spin Labeling in Aging**
Pui Wai Chiu[1], Peiying Liu[2], Queenie Chan[3], Raymond Chuen Chung Chang[4], Leung Wing Chu[5], Hanzhang Lu[2], Henry Ka Fung Mak[1]
[1]Diagnostic Radiology, The University of Hong Kong, Hong Kong, Hong Kong; [2]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, TX, United States; [3]Philips Healthcare, Hong Kong, Hong Kong; [4]Laboratory of Neurodegenerative Disease, Department of Anatomy, The University of Hong Kong, Hong Kong, Hong Kong; [5]Division of Geriatric Medicine, Department of Medicine, Queen Mary Hospital, Hong Kong, Hong Kong

2007. **Multi-Voxel Imaging of GABA Temporal Dynamics: A Double-Blind Drug-Challenge Crossover Study at 4 Tesla**
John Jensen[1, 2], Stephanie Licata[1, 2], Lisa Nickerson[1, 2], Marisa Silveri[1, 2], Carolyn Caine[2], Kristina Wang[2], Rosemond Villefuerte[2], Kevin Hill[1, 2], David Olson[1, 2]
[1]Harvard Medical School, Boston, MA, United States; [2]McLean Hospital, Belmont, MA, United States

Traditional Poster
MRS Neurological Diseases
Exhibition Hall Wednesday 10:00-12:00

2008. **Decreased Glutamate in the Periaqueductal Gray Associates with Neuropathic Pain**
Yazhuo Kong[1], Uzay Emir[1], George Tackley[1], Lucy Matthews, Charlotte Stagg[1], Irene Tracey[1], Jacqueline Palace
[1]FMRIB Centre, Nuffield Department of Clinical Neuroscience, University of Oxford, Oxford, Oxfordshire, United Kingdom

2009. Comparison of the Effects of Integrase Inhibitors and Efaverenz on Brain Biochemistry
Praveen Dev Merugumala[1], April Long[1], Huijun Liao[1], Yvonne Robles[2], Nina Lin[3], Alexander P. Lin[1]
[1]Center for Clinical Spectroscopy, Brigham and Women's Hospital, Boston, MA, United States; [2]Infectious Disease Clinic, Brigham and Women's Hospital, Boston, MA, United States; [3]Infectious Disease Clinical Research Unit, Boston University School of Medicine, Boston, MA, United States

2010. Dynamic Proton MRS Following the Infusion of [U-13C] Glucose to Measure Glutamate Metabolism in Temporal Lobe Epilepsy
Brenda Bartnik-Olson[1], Daniel Ding[2], John Howe[2], Amul Shah[2], Travis Losey[3]
[1]Radiology, Loma Linda University Medical Center, Loma Linda, CA, United States; [2]School of Medicine, Loma Linda University, Loma Linda, CA, United States; [3]Neurology, Loma Linda University Medical Center, Loma Linda, CA, United States

2011. Neurometabolic Changes Observed in the Anterior Cingulate Cortex and the Thalamus in Schizophrenia and in Unipolar Mood Disorder Relative to Healthy Controls at 7T
Reggie Taylor[1, 2], Betsy Schaefer[3], Elizabeth Osuch[2, 3], Maria Densmore[2], Nagalingam Rajakumar[3], Jean Theberge[1, 2], Peter Williamson, [23]
[1]Medical Biophysics, Western University, London, ON, Canada; [2]Imaging, Lawson Health Research Institute, London, ON, Canada; [3]Psychiatry, Western University, London, ON, Canada

2012. Proton MRS Shows Cerebral Lipid Accumulation in Chanarin-Dorfman Syndrome
Marinette van der Graaf[1], Marleen CDG Huigen[1], Eva Morava[1, 2], A Carin M Dassel[3], Maurice AM van Steensel[4, 5], Marieke MB Seyger[1], Ron A. Wevers[1], Michèl A. Willemsen[1]
[1]Radboud University Medical Center, Nijmegen, Netherlands; [2]Tulane University Medical School, New Orleans, LA, United States; [3]Deventer Hospital, Deventer, Netherlands; [4]Maastricht University Medical Center, Maastricht, Netherlands; [5]Institute of Medical Biology, Immunos, Singapore

2013. 7T MRS in Patients with 1.5T Normal Medically-Refractory Temporal Lobe Epilepsy
Simona Nikolova[1], Jorge Burneo[2], Robert Bartha[3]
[1]Robarts Research Institute, London, ON, Canada; [2]Schulich School of Medicine and Dentistry, University of Western Ontario, London, Canada; [3]Medical Biophysics, University of Western Ontario, London, Ontario, Canada

2014. T2 Measurements of Childhood Brain Tumours and Metabolite Concentration Correction
Dominic Carlin[1, 2], Ben Babourina-Brooks[1, 2], Martin Wilson[1, 2], Andrew C. Peet[1, 2]
[1]School of Cancer Sciences, University of Birmingham, Birmingham, United Kingdom; [2]Birmingham Children's Hospital, Birmingham, United Kingdom

Traditional Poster
MRSI

Exhibition Hall Wednesday 10:00-12:00

2015. Comparison of Radially Sampled FbSSFP Sequences for Direct ^{31}P MRI
Kristian Rink[1], Nadia Benkhedah[1], Moritz C. Berger[1], Peter Bachert[1], Armin M. Nagel[1]
[1]German Cancer Research Center (DKFZ), Heidelberg, Germany

2016. Lipid and Macromolecule Suppression by Double Inversion Recovery in Metabolic Mapping of the Brain at 7T
Gilbert Hangel[1], Bernhard Strasser[2], Michal Považan[2], Stephan Gruber[2], Marek Chmelik[2], Siegfried Trattnig[2], Wolfgang Bogner[2]
[1]MCRE, Department of Biomedical Imaging and Image-guided Therapy , Medical University of Vienna, Wien, Vienna, Austria; [2]MCRE, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Wien, Vienna, Austria

2017. **High Resolution 1H MRSI Without Lipid Suppression at Short Echo Times Using Variable Density Spirals**
Ipshita Bhattacharya[1], Mathews Jacob[1]
[1]The University of Iowa, Iowa City, IA, United States

2018. **Efficient Spectroscopic Imaging by an Optimized Encoding of Pre-Targeted Brain Main Metabolic Resonances**
Zhiyong Zhang[1, 2], Noam Shemesh[1, 3], Lucio Frydman[1]
[1]Chemical Physics Department, Weizmann Institute of Science, Rehovot, Israel; [2]Department of Electronic Science, Xiamen University, Xiamen, Fujian, China; [3]Champalimaud Neuroscience Programme, Champalimaud Centre for the Unknown, Lisbon, Portugal

2019. **Accelerated TE-Averaged Echo-Planar 3D Spectroscopic Imaging: Pilot Validation in Human Brain**
Zohaib Iqbal[1], Neil E. Wilson[1], Brian L. Burns[1], Margaret A. Keller[1], Michael Albert Thomas[1]
[1]University of California - Los Angeles, Los Angeles, CA, United States

2020. **Semi-Laser 5D Echo-Planar J-Resolved Spectroscopic Imaging: Pilot Validation in Prostate Cancer**
Zohaib Iqbal[1], Neil E. Wilson[1], Rajakumar Nagarajan[1], Daniel A. Margolis[1], Robert E. Reiter[2], Steven S. Raman[1], Michael Albert Thomas[1]
[1]Radiological Sciences, University of California - Los Angeles, Los Angeles, CA, United States; [2]Urology, University of California - Los Angeles, Los Angeles, CA, United States

Traditional Poster
Pre-Clinical fMRI

Exhibition Hall Wednesday 10:00-12:00

2021. **Restoring Susceptibility Induced MRI Signal Loss in Rat Deep Brain Structures at 9.4T and Acquiring True Whole Brain Scale FcMRI Network**
Rupeng Li[1], Xiping Liu[2], Jason W. Sidabras1[1], Eric S. Paulson[3], Andrzej Jesmanowicz[1], James S. Hyde[1]
[1]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Dermatology, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Radiation Oncology, Medical College of Wisconsin, Milwaukee, WI, United States

2022. **Regional Alterations Between Different Anaesthesia Protocols Effects on the Mice Brain Using Resting-State fMRI**
Tong Wu[1], Joanes Grandjean[2], Simone C. Bosshard[3], Markus Rudin[2], David Reutens[3], Tianzi Jiang[1, 4]
[1]Queensland Brain Institute, The University of Queensland, Brisbane, Queensland, Australia; [2]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [3]The Centre for Advanced Imaging, The University of Queensland, Queensland, Australia; [4]Brainnetome Centre, Institute of Automation, Chinese Academy of Sciences, Beijing, China

2023. **The Constituents of Default Mode Network in Rats**
Li-Ming Hsu[1], Xia Liang[1], Hong Gu[1], Julia K. Brynildsen[1], Jennifer A. Stark[2], Kia Jackson[3], Allison Hoffman[3], Hanbing Lu[1], Elliot A. Stein[1], Yihong Yang[1]
[1]Neuroimaging Research Branch, National institute on drug abuse, Baltimore, MD, United States; [2]Maryland Neuroimaging Center, University of Maryland, MD, United States; [3]Center for Tobacco Products, FDA, MD, United States

2024. **Exploration of Functional Organization in Human Cervical Spinal Cord Using Resting State fMRI**
Xiaojia Liu[1, 2], Fuqing Zhou[3], Xiang Li[3], Jiaolong Cui[3], Mengye Lyu[1, 2], Adrain Tsang[1, 2], Iris Y. Zhou[1, 2], Ed X. Wu[1, 2], Yong Hu[3]
[1]Laboratory of Biomedical Imaging and Signal Processing, The University of Hong Kong, Hong Kong, China; [2]Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, China; [3]Department of Orthopaedics and Traumatology, The University of Hong Kong, Hong Kong, China

2025. **Inter-Hemispheric Resting State Functional Connectivity in Anesthesia Induced Unconsciousness**
Yuncong Ma[1], Christina Hamilton[1], Pablo D. Perez[1], Zhifeng Liang[1], Nanyin Zhang[1]

[1]Department of Bioengineering, The Pennsylvania State University, State College, PA, United States

2026. Changes in Resting State Networks and Biochemistry in a Mouse Model of Inflammatory Pain
Robert Becker[1], Anke Tappe-Theodor[2], Ainhoa Bilbao[3], Rainer Spanagel[3], Wolfgang Weber-Fahr[1]
[1]Research group Translational Imaging, Department of Neuroimaging, Central Institute of Mental Health, Medical Faculty Mannheim / Heidelberg University, Mannheim, BW, Germany; [2]Pharmacological institute, Heidelberg University, Heidelberg, BW, Germany; [3]Department of Psychopharmacology, Central Institute of Mental Health, Medical Faculty Mannheim / Heidelberg University, Mannheim, BW, Germany

2027. The Relationship Between States of Consciousness and Brain Connectivity: A Potential Biomarker for Discriminable States of Consciousness
Christina Hamilton[1], Yuncong Ma[1], Pablo Perez[1]
[1]Pennsylvania State University, State College, PA, United States

2028. Network Modeling of Mouse Brain fMRI Under the Effect of Different Anesthetics
Qasim Bukhari[1], Aileen Schröter[1], Markus Rudin[1, 2]
[1]Institute of Biomedical Engineering, ETH and University of Zürich, Zürich, Switzerland; [2]Institute of Pharmacology and Taxicology, University of Zürich, Zürich, Switzerland

2029. Contributions of Spiking Activity to the fMRI Response in the Rat Olfactory Bulb
Alexander John Poplawsky[1], Mitsuhiro Fukuda[1], Seong-Gi Kim[2, 3]
[1]Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [2]Center for Neuroscience Imaging Research, Institute for Basic Science (IBS), Suwon, Korea; [3]Biomedical Engineering and Biological Sciences, Sungkyunkwan University (SKKU), Suwon, Korea

2030. Near-Physiological Mouse fMRI of Nociception
Henning Matthias Reimann[1], Jaroslav Marek[1], Jan Hentschel[1], Till Huelnhagen[1], Andreas Pohlmann[1], Thoralf Niendorf[1, 2]
[1]Berlin Ultrahigh Field Facility (B.U.F.F.), Max Delbrueck Center for Molecular Medicine, Berlin-Buch, Berlin, Germany; [2]Experimental and Clinical Research Center, Charite-Universitatsmedizin, Berlin, Germany

2031. Determination of Sources for Evoked BOLD Response Under Hyperbaric Oxygen
Damon Philip Cardenas[1, 2], Eric R. Muir[1, 3], Shiliang Huang[3], Timothy Q. Duong[1, 3]
[1]University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Biomedical Engineering, University of Texas San Antonio, San Antonio, TX, United States; [3]Research Imaging Institute, San Antonio, TX, United States

2032. Etomidate: A Novel Anesthetic of Choice for Functional Magnetic Resonance Imaging in Mice
Georges Hankov[1, 2], Marija M. Petrinovic*[1], Aileen Schroeter[2], Andreas Bruns[1], Markus Rudin[2, 3], Markus von Kienlin[1], Basil Künnecke[1], Thomas Mueggler[4]*
[1]Neuroscience Discovery, F. Hoffmann-La Roche Pharmaceuticals Ltd, Basel, Basel-City, Switzerland; [2]Institute for Biomedical Engineering, University of Zurich and ETH, Zurich, Switzerland; [3]Institute of Pharmacology and Toxicology, University of Zurich, Zurich, Switzerland; [4]Neuroscience Discovery, F. Hoffmann-La Roche Pharmaceuticals Ltd , Basel, Basel-City, Switzerland

2033. MEMRI and BOLD Analyses of the Olfactory Perception System in Response to Odorant Stimuli in Mice
Hirotsugu Funatsu[1], Sosuke Yoshinaga[1], Haruna Goto[1], Makoto Hirakane[1], Shigeto Iwamoto[1], Hiroaki Terasawa[1]
[1]Department of Structural BioImaging, Faculty of Life Sciences, Kumamoto University, Kumamoto, Japan

2034. Functional MRI of the Main and Accessory Olfactory System in the Whole Rodent Brain
Eric R. Muir[1], Linlin Cong[1], KC Biju[2], William E. Rogers[1], Robert A. Clark[3], Timothy Q. Duong[1]
[1]Research Imaging Institute, University of Texas Health Science Center, San Antonio, TX, United States; [2]Department of Medicine, University of Texas Health Science Center, San Antonio, TX, United States; [3]Institute for integration of Medicine & science and South Texas Veterans Health Care System, University of Texas Health Science Center, San Antonio, TX, United States

2035. A Reproducible Experimental Protocol for Longitudinal Rat fMRI Studies: Electrical Mystacial Pad Stimulation Under Isoflurane Anesthesia

Shin-Lei Peng[1, 2], Ling-Yi Huang[1], Sheng-Min Huang[1], Yi-Chun Wu[3], Hanzhang Lu[2], Fu-Chan Wei[4], Chih-Jen Wen[4], Hui-Yu Cheng[4], Chih-Hung Lin[4], Fu-Nien Wang[1]
[1]Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan; [2]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [3]Molecular Imaging Center, Chang Gung Memorial Hospital, Taoyuan, Taiwan; [4]Department of Plastic and Reconstructive Surgery, Chang Gung Memorial Hospital, Taoyuan, Taiwan

2036. Mapping the Visual Pathway in the Mouse Brain Using Snapshot fMRI

Arun Niranjan[1], Jack A. Wells[1], Mark F. Lythgoe[1]
[1]Centre for Advanced Biomedical Imaging, University College London, London, United Kingdom

2037. How Specific Is Specific? Stimulus-Evoked fMRI in Rats and Mice

Giovanna Diletta Ielacqua[1], Aileen Schroeter[1], Mark Augath[1], Felix Schlegel[1], Markus Rudin[1, 2]
[1]Institute for Biomedical Engineering, ETH and University of Zurich, Zurich, Switzerland; [2]Institute of Pharmacology and Toxicology, University of Zurich, Zurich, Switzerland

2038. Functional Imaging at 14.1T Using High-Resolution Pass Band BSSFP

Klaus Scheffler[1], Philipp Ehses[1], Yi He[1], Hellmut Merkle[1], Xin Yu[1]
[1]MRC department, Max Planck Institute for Biological Cybernetics, Tübingen, Germany, Tübingen, Germany

2039. T2 Weighted High-Resolution fMRI in Human Visual Cortex at 9.4 T Using 3D-GRASE

Valentin G. Kemper[1], Federico De Martino[1, 2], Desmond H. Y. Tse[3, 4], Benedikt A. Poser[1], Essa Yacoub[2], Rainer Goebel[1]
[1]Cognitive Neuroscience FPN, Maastricht University, Maastricht, Limburg, Netherlands; [2]Center for Magnetic Resonance Research, CMRR, Radiology, University of Minnesota, Minneapolis, MN, United States; [3]Neuropsychology and Psychopharmacology, FPN, Maastricht University, Maastricht, Limburg, Netherlands; [4]Radiology, University Medical Centre, Maastricht University, Limburg, Netherlands

2040. BOLD-Signal Representation of Incisional and Inflammatory Pain in Rat Brain After Noxious Electrical and Noxious Mechanical Stimulation

Saeedeh Amirmohseni[1], Daniel Segelcke[2], Esther Pogatzki-Zahn[2], Cornelius Faber[1]
[1]Department of Clinical Radiology, University Hospital Muenster, Muenster, Germany; [2]Department of Anaesthesiology, Intensive Care and Pain Medicine, University Hospital Muenster, Muenster, Germany

Traditional Poster
fMRI Methods

Exhibition Hall Wednesday 10:00-12:00

2041. Identify the "single Unit" of Neurovascular Coupling by Single-Vessel fMRI and Optogenetics

Maosen Wang[1, 2], Yi He[1], Yaohui Tang[1], Hellmut Merkle[3], Xin Yu[1, 2]
[1]Research Group of Translational Neuroimaging and Neural Conteol,High Field Magnetic Resonance, Max Planck Institute for Biological Cybernetics, Tuebingen, Baden-Wuerttemberg, Germany; [2]Graduate School of Neural & Behavioural Sciences International Max Planck Research School, University of Tuebingen, Tuebingen, Baden-Wuerttemberg, Germany; [3]Laboratory of Functional and Molecular Imaging, National Institute of Neurological Disorders and Str, National Institutes of Health, Bethesda, MD,, United States

2042. Combined Optogenetic fMRI and Optical Ca2+-Recordings for Functional Mapping of Thalamo-Cortical Circuits in Rat

Lydia Wachsmuth[1], Florian Schmid[1], Miriam Schwalm[2], Albrecht Stroh[2], Cornelius Faber[1]

[1]Department of Clinical Radiology, University of Münster, Münster, Germany; [2]Institute of Microscopic Anatomy and Neurobiology, Johannes Gutenberg-University Mainz, Mainz, Germany

2043. Impact of Anesthesia on Optogenetically Activated Medical Prefrontal Functional Network in Rats
Zhifeng Liang[1, 2], Glenn D.R. Waston[3, 4], Kevin D. Alloway[3, 4], Gangchea Lee[5], Thomas Neuberger[5], Nanyin Zhang, [45]
[1]Dept. of Biomedical Engineering, Pennsylvania State University , University Park, PA, United States; [2]Center for Neural Engineering, The Huck Institutes of Life Sciences, Pennsylvania State University , University Park, PA, United States; [3]Neural and Behavioral Sciences, College of Medicine, Pennsylvania State University, Hershey, PA, United States; [4]Center for Neural Engineering, The Huck Institutes of Life Sciences, Pennsylvania State University, University Park, PA, United States; [5]Dept. of Biomedical Engineering, Pennsylvania State University, University Park, PA, United States

2044. Selective Optogenetic Stimulation of VTA Dopaminergic Neurons Enhances the Neuronal Representation of Sensory Input
Heather K. Decot[1, 2], Wei Gao[3, 4], Joshua H. Jennings[1, 2], Pranish A. Kantak[2], Yu-Chieh Jill Kao[4, 5], Manasmita Das[4, 5], Ilana B. Witten[6], Karl Deisseroth[7], Yen-Yu Ian Shih[4, 5], Garret D. Stuber[1, 2]
[1]Curriculum in Neurobiology, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States; [2]Departments of Psychiatry & Cell and Molecular Physiology, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States; [3]Department of Radiology, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States; [4]Biomedical Research Imaging Center, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States; [5]Department of Neurology, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States; [6]Princeton Neuroscience Institute & Department of Psychology, Princeton University, Princeton, NJ, United States; [7]Department of Bioengineering, Stanford University, Stanford, CA, United States

2045. Multiband Multiecho 2D-EPI: Maximizing BOLD CNR for fMRI at 3T
E. Daniel P. Gomez[1], Jenni Schulz[1], Rasim Boyacioglu[1], David G. Norris[1, 2], Benedikt A. Poser[3]
[1]Donders Institute for Brain, Cognition and Behaviour, Radboud University Nijmegen, Nijmegen, Gelderland, Netherlands; [2]Erwin L. Hahn Institute for Magnetic Resonance Imaging, University Duisburg-Essen, Essen, Germany; [3]Faculty of Psychology and Neuroscience, Maastricht University, Maastricht, Netherlands

2046. Reduction of Susceptibility Artifacts and Enhancement of BOLD Contrast in Functional MRI Using Multi-Band Multi-Echo GE-EPI
Tae Kim[1], Tiejun Zhao[2], Yoojin Lee[1], Kyongtae Ty Bae[1]
[1]Department of Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [2]Siemens Medical Solution USA, Siemens MediCare USA, PA, United States

2047. Whole-Brain, Sub-Second Data Collection for Task-Evoked fMRI Studies Using Simultaneous Multi-Slice/multiband Acquisition
Stephanie McMains[1], R Matthew Hutchison[1, 2], Ross W. Mair[1, 3]
[1]Center for Brain Science, Harvard University, Cambridge, MA, United States; [2]Department of Psychology, Harvard University, Cambridge, MA, United States; [3]AA Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States

2048. Evaluation of Multi-Echo Multi-Band EPI with ME-ICA Denoising at 7T
Sascha Brunheim[1, 2], Helen C. Lückmann[1], Prantik Kundu[3], Rainer Goebel[1, 2], Benedikt A. Poser[1]
[1]Faculty of Psychology and Neuroscience, Department of Cognitive Neuroscience, Maastricht University, Maastricht, Netherlands; [2]Brain Innovation B.V., Maastricht, Netherlands; [3]Section on Functional Imaging Methods, Laboratory of Brain and Cognition, National Institutes of Health, Bethesda, MD, United States

2049. Comparing Resting State fMRI Cleaning Approaches Using Multi- And Single-Echo Acquisitions in Healthy Controls and Patients with ADHD
Ottavia Dipasquale[1, 2], Arjun Sethi[3], Maria Marcella Laganà[2], Francesca Baglio[2], Prantik Kundu[4], Giuseppe Baselli[1], Neil A. Harrison[3], Mara Cercignani[3]
[1]Politecnico di Milano, Milan, MI, Italy; [2]IRCCS, Don Gnocchi Foundation, Milan, MI, Italy; [3]Clinical Imaging Sciences Centre, Brighton and Sussex Medical School, Brighton, United Kingdom; [4]Section on Advanced Functional Neuroimaging, Brain Imaging Center, Icahn School of Medicine at Mount Sinai, New York, NY, United States

2050. Fast, Focused fMRI at High Spatial Resolution: 3D-EPI-CAIPI with Cylindrical Excitation
Wietske van der Zwaag[1], Mayur Narsude[2], Marzia Restuccia[2], Olivier Reynaud[1, 3], Daniel Gallichan[1], Jose P. Marques[1]
[1]CIBM, EPFL, Lausanne, VD, Switzerland; [2]LIFMET, EPFL, Lausanne, VD, Switzerland; [3]Department of Radiology, Bernard and Irene Schwartz Center for Biomedical Imaging, NYU School of Medicine, New York, NY, United States

2051. Evaluation of 2D Multiband EPI Imaging for High Resolution, Whole Brain fMRI Studies at 3T: Sensitivity and Slice Leakage Artifacts
Nick Todd[1], Steen Moeller[2], Edward J. Auerbach[2], Essa Yacoub[2], Guillaume Flandin[1], Nikolaus Weiskopf[1]
[1]Wellcome Trust Centre for Neuroimaging, University College London, London, United Kingdom; [2]Center for Magnetic Resonance Research, University of Minnesota, MN, United States

2052. High Temporal Resolution BOLD fMRI Based on Partial Separability Model with L2 Norm Constraint
caiyun shi[1, 2], xiaoyong zhang[2, 3], guoxi xie[2], lijuan zhang[2], chunxiang jiang[2], xin liu[2]
[1] Shenzhen Key Lab for MRI, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences , shenzhen, guangdong, China; [2]Shenzhen Key Lab for MRI, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, shenzhen, guangdong, China; [3]Centers for Biomedical Engineering, College of Information Science and Technology, University of Science and Technology of China, Hefei, China

2053. Multi-Echo Independent Component Analysis (ME-ICA) of High Frequency Resting-State fMRI Data
Valur Olafsson[1], Prantik Kundu[2], Thomas Liu[3]
[1]Neuroscience Imaging Center, University of Pittsburgh, Pittsburgh, PA, United States; [2]Dept. of Radiology, Icahn School of Medicine at Mount Sinai, New York, NY, United States; [3]Center for functional MRI, UCSD, La Jolla, CA, United States

2054. Simultaneous Multislice Acquisition to Avoid Motion Artifacts in Challenging Patient Populations
Andrew S. Nencka[1], Andrew M. Huettner[2], L. Tugan Muftuler[3], Kevin M. Koch[1], Rasmus Birn[4]
[1]Departments of Biophysics and Radiology, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Department of Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Department of Neurosurgery, Medical College of Wisconsin, Milwaukee, WI, United States; [4]Department of Psychiatry, University of Wisconsin, Madison, WI, United States

2055. Nonlinear Trajectories in Real-Time fMRI Using Target Volumes
Bruno Riemenschneider[1], Pierre Levan[1], Marco Reisert[1], Jürgen Hennig[1]
[1]University Medical Center Freiburg, Freiburg, Germany

2056. The Magnitude Point Spread Function Is an Inadequate Measure of T_2^*-Blurring in EPI
Laurentius Huber[1], Maria Guidi[1], Jozien Goense[2], Toralf Mildner[1], Robert Trampel[1], Jessika Schulz[1], Cornelius Eichner[1], Robert Turner[1], Harald E. Möller[1]
[1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany; [2]University of Glasgow, United Kingdom

2057. nMapping: High Speed, High SNR fMRI Using Direct Mapping of Functional Networks
Eric Wong[1]
[1]Radiology/Psychiatry, UC San Diego, La Jolla, CA, United States

2058. Assessment of Prospective Motion Correction Using Optical Tracking System for Reduction of Stimulus-Correlated False Positive Activations in High Spatial Resolution Functional Magnetic Resonance Imaging
Ikuhiro Kida[1, 2], Takashi Ueguchi[1, 2], Yuichiro Matsuoka[1, 2], Maxim Zaitsev[3]
[1]Center for Information and Neural Networks, National Institute of Information and Communications Technology, Suita, Osaka, Japan; [2]Graduate School of Frontier Biosciences, Osaka University, Suita, Osaka, Japan; [3]University Medical Centre Freiburg, Freiburg, Germany

2059. Robust ACS Acquisition for 3D Echo Planar Imaging
Dimo Ivanov[1], Markus Barth[2], Kâmil Uludağ[1], Benedikt A. Poser[1]
[1]Department of Cognitive Neuroscience, Maastricht University, Maastricht, Netherlands; [2]University of Queensland, Brisbane, Australia

2060. Matched-Filter Acquisition of High-Resolution Single-Shot Spirals
Lars Kasper[1, 2], Maximilian Haeberlin[1], Saskia Bollmann[1], S. Johanna Vannesjo[1], Bertram J. Wilm[1], Benjamin E. Dietrich[1], Simon Gross[1], Klaas E. Stephan[2], Klaas P. Pruessmann[1]
[1]Institute for Biomedical Engineering, University of Zurich and ETH Zurich, Zurich, Switzerland; [2]Translational Neuromodeling Unit, Institute for Biomedical Engineering, University of Zurich and ETH Zurich, Zurich, Switzerland

2061. Interactions Between Physiological Noise Correction and GRAPPA Reconstruction in EPI Data
R. Allen Waggoner[1], Zhentao Zuo[2], Yan Zhuo[2], Topi Tanskanen[1], Kenichi Ueno[3], Keiji Tanaka[1], Kang Cheng[1, 3]
[1]Laboratory for Cognitive Brain Mapping, RIKEN - Brain Science Institute, Wako-shi, Saitama, Japan; [2]State Key Laboratory of Brain and Cognitive Science,Beijing MRI Center for Brain Research, Institute of Biophysics, Chinese Academy of Sciences, Beijing, China; [3]RRC, RIKEN - Brain Science Institute, Wako-shi, Saitama, Japan

2062. The Effects of Coil Compression on Simultaneous Multislice and Conventional fMRI
Alan Chu[1], Douglas Noll[1]
[1]Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States

2063. T2 Prepared RUFIS: A New Imaging Paradigm for 3D Whole-Brain, Silent and Distortion-Free BOLD fMRI
Ana Beatriz Solana Sánchez[1], Anne Menini[1], Laura Sacolick[1], Nicolas Hehn[1], Florian Wiesinger[1]
[1]GE Global Research, Garching bei Muenchen, Bayern, Germany

2064. Poisson-Like Property of Spontaneous Event Trains and Its Relationship to Scale-Free Dynamics
Jingyuan Chen[1], Gary Glover[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States

2065. Improvement of Task-Based and Resting-State fMRI Using GRAPPA Accelerated EPI with a FLASH Based Reference Scan
Siyuan Liu[1], Lalith Talagala[2], Souheil Inati[3], Yisheng Xu[1], Ho Ming Chow[1], Gang Chen[4], Allen Braun[1]
[1]NIDCD, National Institutes of Health, Bethesda, MD, United States; [2]NMRF/NINDS, National Institutes of Health, Bethesda, MD, United States; [3]FMRIF/NIMH, National Institutes of Health, Bethesda, MD, United States; [4]SSCC/NIMH, National Institutes of Health, Bethesda, MD, United States

2066. Novel Heterogeneity Analysis of Resting-State Fluctuations in First-Fit Seizures and New-Onset Epilepsy
Lalit Gupta[1], Mariëlle Vlooswijk[2], Rob P. W. Rouhl[2], Rick Janssens[2], Anton de Louw[3], Bert Aldenkamp[3], Shrutin Ulman[1], René M.H. Besseling[4], Paul A.M. Hofman[2], Jacobus F. A. Jansen[4], Walter H. Backes[4]
[1]Philips India Ltd., Bangalore, Karnataka, India; [2]Dept of Neurology, Maastricht University Medical Center, Maastricht, Netherlands; [3]Epilepsy Center Kempenhaeghe, Heeze, Netherlands; [4]Department of Radiology, Maastricht University Medical Center, Maastricht, Netherlands

2067. Vascular Autocalibration of fMRI (VasA FMRI) Improves Sensitivity of Population Studies
ISMRM MERIT AWARD magna cum laude
Samira M. Kazan[1], Siawoosh Mohammadi[2], Martina F. Callaghan[2], Guillaume Flandin[2], Robert Leech[3], Aneurin Kennerley[4], Christian Windischberger[5], Nikolaus Weiskopf[2]
[1]Wellcome Trust Centre for Neuroimaging , UCL Institute of Neurology , London, United Kingdom; [2]Wellcome Trust Centre for Neuroimaging, UCL Institute of Neurology, London, United Kingdom; [3]Cognitive, Clinical and Computational Neuroimaging Lab, University of London, Imperial College, London, United Kingdom; [4]Department of Psychology, University of Sheffield, Sheffield,

United Kingdom; [5]MR Centre of Excellence, Centre for Medical Physics and Biomedical Engineering, Medical University of Vienna, Vienna, Austria

2068. Improved Retrospective Motion Correction in fMRI Using a Biophysical Model

Tim M. Tierney[1], Louise J. Croft[2], Maria Centeno[1], Elhum A. Shamshiri[1], Suejen Perani[1, 3], Torsten Baldeweg[4], Christopher A. Clark[1], David W. Carmichael[1]
[1]Developmental Imaging and Biophysics, UCL Institute of Child Health, London, United Kingdom; [2]Cognitive Neuroscience and Neuropsychiatry, UCL Institute of Child Health, London, United Kingdom; [3]Department of Basic and Clinical Neuroscienc, KCL Institute of Psychiatry, Psychology & Neuroscience, London, United Kingdom; [4]Cognitive Neuroscience and Neuropsychiatry, UCL Institute of Child Health, London, United Kingdom

2069. Analysis of Sampling Rate (TR) Dependence of Hurst Exponent of fMRI BOLD Time Series

Muhammad Kaleem[1], Dietmar Cordes[2]
[1]Ryerson University, Toronto, Ontario, Canada; [2]Lou Ruvo Center for Brain Health, Las Vegas, NV, United States

2070. Signal Processing Spreads a Voxel's Temporal Frequency Task-Activated Peak and Induces Spatial Correlations in Dual-Task Complex-Valued fMRI

Mary C. Kociuba[1], Daniel B. Rowe[1, 2]
[1]Department of Mathematics, Statistics, and Computer Science, Marquette University, Milwaukee, WI, United States; [2]Department of Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States

2071. Laminar Time Course Extraction Over Extended Cortical Areas

Tim van Mourik[1], Jan PJM van der Eerden[1], David G. Norris[1]
[1]Donders Centre for Cognitive Neuroimaging, Radboud University Nijmegen, Nijmegen, Netherlands

2072. bOVOC: 200 Hz Balanced One-Voxel-One-Coil MREG at 9.4T

Klaus Scheffler[1], Gabriele Lohmann[1], Christian Mirkes[1], Shajan Gunamony[1], Philipp Ehses[1]
[1]MRC department, Max Planck Institute for Biological Cybernetics, Tübingen, Germany, Tübingen, Germany

ISMRM MERIT AWARD summa cum laude

2073. Distortion-Corrected High Resolution Zoomed fMRI at 9.4 T

Jonas Bause[1, 2], Myung-Ho In[3], Philipp Ehses[1, 4], G. Shajan[1], Oliver Speck[3], Rolf Pohmann[1], Klaus Scheffler[1, 4]
[1]High-Field Magnetic Resonance Center, Max Planck Insitute for Biological Cybernetics, Tuebingen, Germany; [2]Graduate Training Centre for Neuroscience, University of Tuebingen, Tuebingen, Germany; [3]Department for Biomedical Magnetic Resonance, University of Magdeburg, Magdeburg, Germany; [4]Department of Biomedical Magnetic Resonance, University of Tuebingen, Tuebingen, Germany

ISMRM MERIT AWARD magna cum laude

2074. Factors Influencing Learning to Self-Regulate Brain Activity Using Real-Time FMRI: Comparison Between Conscious Strategy and Contingent Feedback

Pradyumna Sepúlveda[1, 2], Ranganatha Sitaram[3, 4], Mohit Rana[3, 5], Tomás Ossandón[6], Marcelo Andía[1, 7], Cristián Montalba[1], Sergio Uribe[1, 7], Pablo Irarrázaval,[12], Sergio Ruiz,[46], Cristián Tejos[1, 2]
[1]Biomedical Imaging Center, Pontificia Universidad Católica de Chile, Santiago, Chile; [2]Department of Electrical Engineering, Pontificia Universidad Católica de Chile, Santiago, Chile; [3]Department of Biomedical Engineering, University of Florida, Gainesville, FL, United States; [4]Institute of Medical Psychology and Behavioral Neurobiology, University of Tübingen, Tübingen, Germany; [5]Graduate School of Neural & Behavioural Sciences, International Max Planck Research School, University of Tübingen, Tübingen, Germany; [6]Department of Psychiatry, Faculty of Medicine, Interdisciplinary Center for Neuroscience, Pontificia Universidad Católica de Chile, Santiago, Chile; [7]Radiology Department, Faculty of Medicine, Pontificia Universidad Católica de Chile, Santiago, Chile

2075. Functional Connectivity in Task Switching Paradigm

Mitsunobu Kunimi[1], Sachiko Kiyama[1], Toshiharu Nakai[1]
[1]National Center for Geriatrics and Gerontology, Obu, Aichi, Japan

2076. High-Resolution Functional Imaging in the Human Brain Using Passband BSSFP at 9.4T

Klaus Scheffler[1, 2], Philipp Ehses[1, 2]
[1]Dept. of Biomedical Magnetic Resonance, University of Tübingen, Tübingen, Germany; [2]High-Field MR Center, Max Planck Institute for Biological Cybernetics, Tübingen, Germany

2077. Automated and Individualized fMRI Processing for Pre-Surgical Mapping: Comparison with MEG and Cortical Stimulation.

Tynan Stevens[1], Tim Bardouille[2, 3], Gerhard Stroink[1], David Clarke[1, 4], Ryan D'Arcy[5], Steven Beyea, [12]
[1]Dalhousie University, Halifax, Nova Scotia, Canada; [2]BIOTIC, Halifax, Nova Scotia, Canada; [3]IWK Hospital, Halifax, Nova Scotia, Canada; [4]QEII Health Sciences Centre, Halifax, Nova Scotia, Canada; [5]Simon Fraser University, Burnaby, British Columbia, Canada

Traditional Poster
Functional Connectivity Method & Applications

Exhibition Hall Wednesday 10:00-12:00

2078. Disrupted Resting State Brain Connectivity in Fetal Complex Congenital Heart Disease

Vincent Kyu Lee[1, 2], Mark DeBrunner[3], Jennifer A. Johnson[3], Jodie Votava-Smith[4], Vidya Rajagopalan[5], Rafael Ceschin[1, 2], Michelle Gruss[2], Frederick S. Sherman[3], Ashok Panigrahy, [12]
[1]Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [2]Radiology, Children's Hospital of Pittsburgh, Pittsburgh, PA, United States; [3]Cardiology, Children's Hospital of Pittsburgh, PA, United States; [4]Cardiology, Children's Hospital of Los Angeles, CA, United States; [5]Children's Hospital of Los Angeles, PA, United States

2079. Investigation of Optimal Echo Time for Resting-State fMRI Acquisition in Newborn Infants

Maryam Abaei[1], Eugene P. Duff[2], Tomoki Arichi[1, 3], Jonathan O'Muircheartaigh[1, 4], Emer Hughes[1], Giulio Ferrazzi[1], Steve M. Smith[2], Serena Counsell[1], A David Edwards[1, 5], Daniel Rueckert[6], Joseph V. Hajnal[1, 5]
[1]Centre for the Developing Brain, King's College London, London, United Kingdom; [2]Department of Clinical Neurosciences, Oxford University, Oxford, United Kingdom; [3]Department of Bioengineering, Imperial College, London, United Kingdom; [4]Institute of Psychiatry, King's College London, London, United Kingdom; [5]Division of Imaging Sciences and Biomedical, King's College London, London, United Kingdom; [6]Biomedical Image Analysis Group, Department of Computing, Imperial College, London, United Kingdom

2080. Resting State Functional Connectivity Predicts Changes in Interoceptive Awareness Following Mindfulness Training

Maryam Falahpour[1], Lori Haase[2], Martin P. Paulus[2], Thomas T. Liu[1]
[1]Center for Functional MRI, University of California San Diego, La Jolla, CA, United States; [2]Department of Psychiatry, University of California San Diego, La Jolla, CA, United States

2081. The Relationship Between Level of Consciousness and Variability of Brain Connectivity

Christina Hamilton[1], Yuncong Ma[1], Pablo Perez[1]
[1]Pennsylvania State University, State College, PA, United States

2082. Modulation of Functional Connectivity During Finger Tapping and Resting State in Patients with MS

Xiaopeng Zhou[1], Katherine A. Koenig[1], Erik B. Beall[1], Lael Stone[1], Robert Bermel[1], Michael D. Phillips[1], Mark J. Lowe[1]
[1]The Cleveland Clinic, Cleveland, OH, United States

2083. Reduced Brain Functional Network Dynamics in Propofol Sedation Characterized by Modularity and Time Delayed Network Mutual Information Analysis

Guangyu Chen[1], Xiaolin Liu[1], Anthony G. Hudetz[2], Shi-Jiang Li[1]
[1]Biophysics, Medical College of Wisconsin, milwaukee, WI - Wisconsin, United States; [2]Department of Anesthesiology, Medical College of Wisconsin, milwaukee, WI - Wisconsin, United States

2084. Increased Variability Across Time Accounts for Reduced Connectivity Within the Default Mode Network in Autism: A Dynamic FcMRI Study

Maryam Falahpour[1], Wesley K. Thompson[2], Angela E. Abbott[3], Mark E. Mulvey[3], Michael Datko[3], Ralph-Axel Müller[3], Thomas T. Liu[1]
[1]Center for Functional MRI, University of California San Diego, La Jolla, CA, United States; [2]Department of Psychiatry, University of California San Diego, La Jolla, CA, United States; [3]Brain Development Imaging Lab, Department of Psychology, San Diego State University, CA, United States

2085. Validation of *In Vivo* Structural Template of Human Brainstem Nuclei by fMRI at 7 Tesla

Marta Bianciardi[1], Nicola Toschi[1, 2], Cornelius Eichner[1], Kawin Setsompop[1], Jonathan R. Polimeni[1], Bruce R. Rosen[1], Lawrence L. Wald[1]
[1]Department of Radiology, A.A. Martinos Center for Biomedical Imaging, MGH and Harvard Medical School, Boston, MA, United States; [2]Medical Physics Section, Department of Biomedicine and Prevention, Faculty of Medicine, University of Rome “Tor Vergata”, Rome, Italy

2086. Functional Connectivity Analysis: Performance Comparison of Gradient and Spin Echo EPI Simultaneously Acquired

Brice Fernandez[1], Victor Spoormaker[2], Philipp Sämann[2], Michael Czisch[2]
[1]Applications & Workflow, GE Healthcare, Munich, Germany; [2]Neuroimaging Unit, Max Planck Institute of Psychiatry, Munich, Germany

2087. Slice-Dynamic Shimming for Simultaneous Brain and Spinal Cord fMRI

Christine Law[1], Haisam Islam[1], Gary Glover[1], Sean Mackey[1]
[1]Stanford University, Stanford, CA, United States

2088. T2*-Weighted Inner-Field-Of-View Echo-Planar Imaging of the Spinal Cord

Jürgen Finsterbusch[1, 2]
[1]Department of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Neuroimage Nord, University Medical Centers Hamburg-Kiel-Lübeck, Hamburg-Kiel-Lübeck, Germany

2089. The Interaction of Physiological Noise Correction with Multi and Single Echo ICA Denoising

Jennifer Evans[1], Prantik Kundu[2], Peter Bandettini[1]
[1]NIH, Bethesda, MD, United States; [2]Mount Sinai, NY, United States

2090. Neural Activity Associated with Spontaneous Eye Opening and Closure in the Awake Macaque

Catie Chang[1], David A. Leopold[2], Hendrik Mandelkow[1], Marieke L. Schölvinck[3], Jeff H. Duyn[1]
[1]Advanced MRI Section, Laboratory of Functional and Molecular Imaging, NINDS, NIH, Bethesda, MD, United States; [2]Section on Cognitive Neurophysiology and Imaging, Laboratory of Neuropsychology, NIMH, NIH, Bethesda, MD, United States; [3]Ernst Strüngmann Institute (ESI) for Neuroscience in Cooperation with Max Planck Society, Frankfurt am Main, Germany

2091. Propofol-Induced Reduction of Functional Connectivity in Large-Scale Brain Networks Defined at Fine Spatial Scales

Xiaolin Liu[1], Kathryn K. Lauer[2], B. Douglas Ward[1], Jeffrey R. Binder[3], Shi-Jiang Li[1], Anthony G. Hudetz[2]
[1]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Anesthesiology, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Neurology, Medical College of Wisconsin, Milwaukee, WI, United States

2092. Trends, Seasonality, and Persistence of Resting-State fMRI Over 185 Weeks

Ann Sunah Choe[1, 2], Craig K. Jones[3, 4], Suresh E. Joel[3, 4], John Muschelli[5], Visar Belegu[6, 7], Martin A. Lindquist[5], Brian S. Caffo[5], Peter CM van Zijl[3, 4], James J. Pekar[3, 4]
[1]Radiology and radiological sciences, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]F. M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States; [3]Radiology and radiological sciences, Johns Hopkins School of Medicine, MD, United States; [4]F. M. Kirby Research Center for Functional Brain Imaging,

Kennedy Krieger Institute, MD, United States; [5]Biostatistics, Bloomberg School of Public Health, Johns Hopkins University, MD, United States; [6]Neurology, Johns Hopkins School of Medicine, MD, United States; [7]International Center for Spinal Cord Injury, Kennedy Krieger Institute, MD, United States

2093. Magnetic Vestibular Stimulation (MVS) Influences fMRI Resting-State Fluctuations: the Modulation of the Default-Mode Network as an Exemplary Case

Rainer Boegle[1, 2], Thomas Stephan[1, 3], Matthias Ertl[2, 3], Stefan Glasauer[1, 4], Marianne Dieterich[1, 3]
[1]German Center for Vertigo and Balance Disorders, DSGZ IFB-LMU, Munich, Bavaria, Germany; [2]Graduate School of Systemic Neurosciences, LMU, Munich, Bavaria, Germany; [3]Department of Neurology, LMU, Munich, Bavaria, Germany; [4]Center for Sensorimotor Research, LMU, Munich, Bavaria, Germany

2094. Inter-Hemispheric Connectivity (Functional Homotopy) Is Reduced in Pediatric Epileptic Patients with Corpus Callosotomy

Peter S. LaViolette[1], Sean Lew[2], Scott D. Rand[1], Manoj Raghavan[3], Kurt Hecox[3], Mohit Maheshwari[1]
[1]Radiology, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Neurosurgery, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Neurology, Medical College of Wisconsin, Milwaukee, WI, United States

2095. Functional Relevance of Spatial ICA and K-Means Clustering

Jun Young Jeong[1], Julia Druzbicki[2], Kun-Han Lu[1], Haiguang Wen[1], Zhongming Liu[1, 3]
[1]Electrical and computer engineering, Purdue University, West Lafayette , IN, United States; [2]Department of statistics, Purdue University, IN, United States; [3]Weldon school of biomedical engineering, Purdue University, IN, United States

2096. Analysis of High Frequency Resting State Networks in the Human Brain

Cameron William Trapp[1], Kishore Vakamundi[2], Stefan Posse[3]
[1]Physics, UNM, Coralles, NM, United States; [2]DEPARTMENT OF PHYSICS AND ASTRONOMY, UNIVERSITY OF NEW MEXICO, ALBUQUERQUE, NM, United States; [3]DEPARTMENT OF NEUROLOGY, UNIVERSITY OF NEW MEXICO, NM, United States

2097. Identification of State Transitions and Durations in Resting-State Functional Connectivity

Sadia Shakil[1], Chin-Hui Lee[1], Shella Keilholz, [12]
[1]Georgia Institute of Technology, Atlanta, GA, United States; [2]Emory University, Atlanta, GA, United States

2098. Subcortical Structures in Resting State fMRI: Uncovering Functional Networks Involving Deep-Brain Structures Using Non-Local Mean Denoising at 1.5T'

Michaël Bernier[1], Maxime Chamberland[1], Stephen Cunnane[2], Kevin Whittingstall[3]
[1]Nuclear medecine and radiobiology, Université de Sherbrooke, Sherbrooke, QC, Canada; [2]Institut universitaire de gériatrie de Sherbrooke, Université de Sherbrooke, Sherbrooke, QC, Canada; [3]Diagnostic radiology, Université de Sherbrooke, Sherbrooke, QC, Canada

2099. Spin-Locked Oscillatory Excitation (SLOE): Towards *In-Vivo* Detection of Oscillating Neuronal Currents

Jingwei Sheng[1], Yuhui Chai[1], Bing Wu[2], Weinan Tang[1], Jia-Hong Gao[1]
[1]Center for MRI Research, Peking University, Beijing, China; [2]GE Healthcare MR Research China, Beijing, China

2100. SEEP Contrast Highlights Different Functional Connectivity Networks Compared to BOLD Resting State fMRI

Venkatagiri Krishnamurthy[1], Romeo S. Cabanban[2], Kaundinya S. Gopinath[1]
[1]Dept. of Radiology and Imaging Sciences, Emory University, Atlanta, GA, United States; [2]Center for Systems Imaging, Emory University, Atlanta, GA, United States

2101. Automated Subject-Specific Seed Optimization Improves Dectection of Resting-State fMRI Connectivity

KISHORE VAKAMUDI[1, 2], ELENA ACKLEY[2], STEFAN POSSE, [12]

[1]DEPARTMENT OF PHYSICS AND ASTRONOMY, UNIVERSITY OF NEW MEXICO, ALBUQUERQUE, NM, United States; [2]DEPARTMENT OF NEUROLOGY, UNIVERSITY OF NEW MEXICO, ALBUQUERQUE, NM, United States

2102. Resting State Network Detection with Searchlight on Functional MRI
Shiyang Chen[1, 2], Hasan Ertan Cetingul[2], Xiaoping Hu[1, 3], Mariappan S. Nadar[2]
[1]The Wallace H. Coulter Department of Biomedical Engineering, Georgia Institute of Technology and Emory University, Atlanta, GA, United States; [2]Imaging and Computer Vision, Siemens Corporation, Corporate Technology, Princeton, NJ, United States; [3]Biomedical Imaging Technology Center, Emory University, Atlanta, GA, United States

2103. Mapping Effective Connectivity in the Mouse Brain Using Granger Causality
Md Taufiq Nasseef[1, 2], Adam Liska[1, 2], Stefano Panzeri[1], Alessandro Gozzi[1]
[1]Center for Neuroscience and Cognitive Systems @UniTn, Istituto Italiano di Tecnologia, Rovereto, TN, Italy; [2]Center for Mind/Brain Sciences, University of Trento, Rovereto, TN, Italy

2104. Retrospective Nonlinear Spin History Motion Artifact Modeling and Correction with SLOMOCO
Erik Beall[1], Mark Lowe[1]
[1]Imaging Institute, Cleveland Clinic, Cleveland, OH, United States

2105. SLOMOCO-Derived Slicewise Head Motion Produces Physiologic Signals and Reveals That Motion Is Hard to Characterize
Erik Beall[1], Mark Lowe[1]
[1]Imaging Institute, Cleveland Clinic, Cleveland, OH, United States

Traditional Poster
fMRI:Bold Physiology & Multimodal Imaging
Exhibition Hall Wednesday 10:00-12:00

2106. Modification of a Standard MR-Compatible EEG Cap for Improved EEG Neurofeedback with Simultaneous fMRI
Vadim Zotev[1], Ahmad Mayeli[1, 2], Jerzy Bodurka[1, 3]
[1]Laureate Institute for Brain Research, Tulsa, OK, United States; [2]Electrical and Computer Engineering, University of Oklahoma, Tulsa, OK, United States; [3]College of Engineering, University of Oklahoma, Tulsa, OK, United States

2107. Contribution of a Brain-State Specific Neurophysiological Event to Large-Scale fMRI Signal Fluctuations
Xiao Liu[1], Toru Yanagawa[2], David A. Leopold[3], Marieke Schölvinck[4], Catie Chang[1], Hiroaki Ishida[5], Naotaka Fujji[2], Jeff H. Duyn[1]
[1]AMRI, LFMI, NINDS, NIH, Bethesda, MD, United States; [2]BSI, RIKEN, Saitama, Japan; [3]Laboratory of Neuropsychology, NIMH, NIH, Bethesda, MD, United States; [4]Ernst Strüngmann Institute for Neuroscience, Frankfurt, Hessen, Germany; [5]Tokyo Metropolitan Institute of Medical Science, Tokyo, Japan

2108. EEG-fMRI Integration for the Study of Physiological Response to Intermittent Photic Stimulation
Eleonora Maggioni[1, 2], Claudio Zucca[1], Gianluigi Reni[1], Fabio Maria Triulzi[3], Anna Maria Bianchi[2], Filippo Arrigoni[1]
[1]Scientific Institute IRCCS E.Medea, Bosisio Parini, LC, Italy; [2]Department of Electronics Information and Bioengineering, Politecnico di Milano, Milano, MI, Italy; [3]Neuroradiology Unit, Fondazione IRCCS Cà Granda, Ospedale Maggiore Policlinico, Milano, MI, Italy

2109. Metabolic Basis for the "rest" Condition in FMRI: Comparison of Eyes Open Vs. Closed States Reveals Constancy of Glucose Metabolism Across Networks
Garth John Thompson[1], Valentin Riedl[2, 3], Timo Grimmer, [34], Alexander Drzezga[5], Peter Herman[1], Fahmeed Hyder[1, 6]
[1]Diagnostic Radiology, Magnetic Resonance Research Center, Yale University, New Haven, CT, United States; [2]Neuroradiology, Nuclear Medicine, Universität München, München, Germany; [3]Technische, Universität München - Neuroimaging Center, München,

Germany; [4]Psychiatry, Universität München, München, Germany; [5]Nuclear Medicine, Uniklinikum, Koeln, Germany; [6]Biomedical Engineering, Yale University, New Haven, CT, United States

2110. Simultaneous Acquisition of Structural and Resting State Functional Connectivity Data Using a Volumetric Navigated Diffusion Sequence
Mwape Mofya[1], Alkatafi Ali Alhamud[1], Paul A. Taylor[1, 2], André J. W. van der Kouwe[3], Ernesta M. Meintjes[1]
[1]MRC/UCT Medical Imaging Research Unit, Department of Human Biology, University of Cape Town, Cape Town, South Africa; [2]African Institute for Mathematical Sciences (AIMS), South Africa; [3]Massachusetts General Hospital, Boston, MA, United States

2111. Local Intrinsic Connectivity Measures Relate to GABA/Glx Levels
Katarzyna Bienkowska[1], Valentin Riedl[1]
[1]Neuroradiology, Technische Universitat Munchen, Munich, Germany

2112. Mapping Epileptic Networks Using Simultaneous EEG-MRI at Ultra-High Field
Frédéric Grouiller[1], João Jorge[2, 3], Francesca Pittau[4], Pascal Martelli[1], Wietske van der Zwaag[5], Christoph M. Michel[6], Serge Vulliémoz[4], Maria Isabel Vargas[1], François Lazeyras[1]
[1]Department of Radiology and Medical Informatics, Geneva University Hospital, Geneva, Switzerland; [2]Department of Bioengineering, Institute for Systems and Robotics, University of Lisbon, Lisbon, Portugal; [3]Laboratory for Functional and Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [4]EEG and Epilepsy Unit, Department of Neurology, Geneva University Hospital, Geneva, Switzerland; [5]Biomedical Imaging Research Center (CIBM), Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [6]Functional Brain Mapping Laboratory, University of Geneva, Geneva, Switzerland

2113. BOLD Correlate of Spontaneous Cortical and Thalamic Slow Oscillations
Florian Schmid[1], Miriam Schwalm[2], Lydia Wachsmuth[1], Cornelius Faber[1], Albrecht Stroh[2]
[1]Department of Clinical Radiology, University of Münster, Münster, Germany; [2]Institute of Microscopic Anatomy and Neurobiology, Johannes Gutenberg-University Mainz, Mainz, Germany

2114. Micro- And Macrovascular Contributions to Layer-Dependent Blood Volume FMRI: A Multi-Modal, Multi-Species Comparison
Laurentius Huber[1], Jozien Goense[2], Aneurin Kennerley[3], Maria Guidi[1], Robert Trampel[1], Robert Turner[1], Harald E. Möller[1]
[1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany; [2]University of Glasgow, United Kingdom; [3]University of Sheffield, United Kingdom

2115. Simultaneous Electroencephalography and Pseudo-Continuous Arterial Spin Labelling Measurements: Feasibility Study
Qingfei Luo[1], Chung-Ki Wong[1], Han Yuan[1], Vadim Zotev[1], Wen-Ming Luh[2], Jerzy Bodurka[1, 3]
[1]Laureate Institute for Brain Research, Tulsa, OK, United States; [2]Cornell MRI Facility, Cornell University, Ithaca, NY, United States; [3]College of Engineering, Center for Biomedical Engineering, University of Oklahoma, Norman, OK, United States

2116. Differences in the Resting-State fMRI Global Signal Amplitude Between the Eyes Open and Eyes Closed States Are Related to Changes in EEG Vigilance
Chi Wah Wong[1], Thomas Liu[2]
[1]Center for Functional MRI, University of California San Diego, La Jolla, CA, United States; [2]Center for Functional MRI, University of California San Diego, La Jolla, CA, United States

2117. Map the Light-Driven fMRI Signal in Combination with *In Vivo* Recording
Maosen Wang[1], Yi He[1], Yaohui Tang[1], Dávid Zsolt Balla[2], Chunqi Qian[3], Xin Yu[1]
[1]Research Group of Translational Neuroimaging and Neural Conteol,High Field Magnetic Resonance, Max Planck Institute for Biological Cybernetics, Tuebingen, Baden-Wuerttemberg, Germany; [2]Department of Physiology of Cognitive Processes, Max Planck Institute for Biological Cybernetics, Tuebingen, Baden-Wuerttemberg, Germany; [3]Laboratory of Functional and Molecular Imaging, National Institute of Neurological Disorders and Str, National Institutes of Health, Bethesda, MD,, United States

2118. Investigating the Role of Interictal Activity During a Natural Stimulus Presentation in Children with Epilepsy
Elhum A. Shamshiri[1], Maria Centeno[1], Tim Tierney[1], Kelly St Pier[2], Ronit Pressler[2], Suejen Perani[1, 3], Helen J. Cross[4], David W. Carmichael[1]
[1]Developmental Imaging and Biophysics Section, UCL Institute of Child Health, London, United Kingdom; [2]Epilepsy Unit, Great Ormond Street Hospital, London, United Kingdom; [3]Department of Basic and Clinical Neurosciences, Institute of Psychiatry, Psychology, and neuroscience, London, United Kingdom; [4]Neurosciences Unit, University College London, London, United Kingdom

2119. On the Feasibility and Specificity of Simultaneous EEG and ASL MRI at 3T
Elise Bannier[1, 2], Marsel Mano[2, 3], Robert Stroemer[4], Isabelle Corouge[2], Lorraine Perronnet[2, 3], Jussi T. Lindgren[3], Anatole Lecuyer[3], Christian Barillot[2]
[1]Radiology, University Hospital of Rennes, Rennes, France; [2]Unité VISAGES U746 INSERM-INRIA, IRISA UMR CNRS 6074, University of Rennes, Rennes, France; [3]Unité HYBRID INRIA, IRISA UMR CNRS 6074, Rennes, France; [4]Brainproducts GmbH, Gilching, Germany

2120. Bold Oxygen Level Dependant (BOLD) Quantitative Susceptibility Mapping (QSM) at Different Head Orientations
M Ethan MacDonald[1, 2], Avery Berman, [23], Rebecca J. Williams[1, 2], Erin L. Mazerolle[1, 2], G Bruce Pike[1, 2]
[1]Radiology and Clinical Neurosciences, University of Calgary, Calgary, Alberta, Canada; [2]Hotchkiss Brain Institute, Foothills Medical Centre, Alberta Health Services, Calgary, Alberta, Canada; [3]Biomedical Engineering, McGill University, Montreal, Quebec, Canada

2121. Assessment of the Reproducibility of BOLD Signal-Based Hemodynamic MRI
Toshihiko Aso[1], Hidenao Fukuyama[1]
[1]Human Brain Research Center, Kyoto University Graduate School of Medicine, Kyoto, Japan

2122. Brain Atrophy Accounts for Age-Related Differences in Hemodynamic Impulse Response Function from Auditory Cortex
Raphael T. Gerraty[1], David B. Parker[2], Alayar Kangarlu[3], Qolamreza R. Razlighi, [24]
[1]Psychology, Columbia University, New York, NY, United States; [2]Biomedical Engineering, Columbia University, NY, United States; [3]Psychiatry , Columbia University, NY, United States; [4]Neurology, Columbia University, New York, NY, United States

2123. Hemodynamic Response Pattern Upon Noxious Electrical Stimulation in Rat Models of Pain
Saeedeh Amirmohseni[1], Daniel Segelcke[2], Esther Pogatzki-Zahn[2], Cornelius Faber[1]
[1]Department of Clinical Radiology, University Hospital Muenster, Muenster, Germany; [2]Department of Anaesthesiology, Intensive Care and Pain Medicine, University Hospital Muenster, Muenster, Germany

2124. Underestimation of Functional Connectivity with Impaired Cerebrovascular Reserve : A Working Model of Moyamoya Disease
Tzu-chen Yeh[1, 2], Chou-ming Cheng[3], Jin-jie Hong[2], Sheng-che Hung[1], Muh-Lii Liang[4], Jen-chuen Hsieh[2, 3]
[1]Department of Radiology, Taipei Veterans General Hospital, Taipei, Taiwan, Taiwan; [2]Institute of Brain Science, National Yang-Ming University, Taipei, Taiwan, Taiwan; [3]Department of Medical Research, Taipei Veterans General Hospital, Taipei, Taiwan, Taiwan; [4]Neurosurgery Neurological Institute, Taipei Veterans General Hospital, Taipei, Taiwan, Taiwan

2125. The Impact of Echo Time on the Calibration Parameter M
Hannah Hare[1], Daniel Bulte[1]
[1]FMRIB, University of Oxford, Oxford, Oxon, United Kingdom

2126. Age-Related Differences in CBF, CVR, M, OEF and CMRO2 Using MRI QUO2 and Dual-Echo PCASL
ISMRM MERIT AWARD magna cum laude
Isabelle Lajoie[1], Kenneth S. Dyson[2], Scott Nugent[2], Felipe D. Tancredi[1, 3], Richard D. Hoge[2]
[1]Centre de recherche de l'IUGM, Université de Montréal, Montreal, Quebec, Canada; [2]McConnell Brain Imaging Centre, Montreal Neurological Institute, McGill University, Montreal, Quebec, Canada; [3]Albert Einstein Jewish Hospital, Brazil

2127. Investigating the Effect of Hyperoxia and Hypercapnia on T2* and S0 Calculated from Multi-Echo BOLD Data at 7T.
Alex A. Bhogal[1], Jeroen C.W. Siero[1], Marielle E. Philippens[1], Esben T. Petersen[1], Martijn Froeling[1], Jeroen Hendrikse[1], Manus J. Donahue[2], Hans Hoogduin[1]
[1]University Medical Center, Utrecht, Netherlands; [2]Vanderbilt University School of Medicine, TN, United States

2128. Physiological Modulators of Resting-State MRI Functional Connectivity
Powell Pui Wai Chu[1, 2], Ali M. Golestani[1], Jonathan B. Kwinta[1, 2], Yasha B. Khatamian[1], Jean J. Chen[1, 2]
[1]Rotman Research Institute, Baycrest, Toronto, Ontario, Canada; [2]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada

2129. Test-Retest Reproducibility of the BOLD Response to a Hypercapnic Challenge
Bryon A. Mueller[1], Nicholas Evanoff[2], Kara L. Marlatt[2], Justin R. Geijer[3], Kelvin O. Lim[1], Donald R. Dengel[2]
[1]Department of Psychiatry, University of Minnesota, Minneapolis, MN, United States; [2]School of Kinesiology, University of Minnesota, Minneapolis, MN, United States; [3]Department of Health, Exercise and Rehabilitative Sciences, Winona State University, Winona, MN, United States

2130. The Susceptibility of Dissolved Oxygen
Avery J.L. Berman[1, 2], Yuhan Ma[1], Richard D. Hoge[1, 3], G. Bruce Pike, [12]
[1]Montreal Neurological Institute, McGill University, Montreal, Quebec, Canada; [2]Department of Radiology/Hotchkiss Brain Institute, University of Calgary, Calgary, Alberta, Canada; [3]Unité de neuroimagerie fonctionelle, Centre de recherche de l'institut de gériatrie de Montréal, Montreal, Quebec, Canada

2131. A Bayesian Framework for the Estimation of OEF by Calibrated MRI
Michael Germuska[1], Alberto Merola[1], Alan Stone[2], Kevin Murphy[1], Richard Wise[1]
[1]Cardiff University, Cardiff, Wales, United Kingdom; [2]Oxford University, Oxfordshire, United Kingdom

2132. Linear Dependence of Neuronal Oscillations on Hypercapnia Level: Implications for CO_2 Calibrated fMRI
Ian D. Driver[1], Joseph Whittaker[1], Molly G. Bright[1], Suresh D. Muthukumaraswamy[1, 2], Kevin Murphy[1]
[1]CUBRIC, School of Psychology, Cardiff University, Cardiff, United Kingdom; [2]Schools of Pharmacy and Psychology, Auckland University, Auckland, New Zealand

2133. Measurement of Oxygen Extraction Fraction (OEF): An Optimised BOLD Signal Model for Use with Hypercapnic and Hyperoxic Calibration
Alberto Merola[1], Kevin Murphy[1], Alan J. Stone[1], Michael A. Germuska[1], Valerie E M Griffeth[2], Nicholas P. Blockley[3], Richard B. Buxton[3, 4], Richard G. Wise[1]
[1]CUBRIC, School of Psychology, Cardiff University, Cardiff, United Kingdom; [2]Department of Bioengineering and Medical Scientist Training Program, University of California San Diego, La Jolla, CA, United States; [3]Center for Functional Magnetic Resonance Imaging, Department of Radiology, University of California San Diego, La Jolla, CA, United States; [4]Kavli Institute for Brain and Mind, University of California San Diego, La Jolla, CA, United States

2134. Changes in CBF/$CMRO_2$ Coupling with Graded Visual Stimuli Are Modulated by Baseline Perfusion
Joseph Whittaker[1], Ian Driver[1], Molly Bright[1], Kevin Murphy[1]
[1]CUBRIC, School of Psychology, Cardiff University, Cardiff, United Kingdom

2135. An Optimised Respiratory Paradigm for the Bayesian Estimation of OEF by Calibrated MRI
Michael Germuska[1], Alberto Merola[1], Kevin Murphy[1], Richard Wise[1]
[1]Cardiff University, Cardiff, Wales, United Kingdom

2136. Investigation of Neurovascular Coupling Within Brain by Simultaneous Recordings of LFP and Fiber-Optic Hemodynamic Signals
Wen-Ju Pan[1], Jacob Billings[1], Shella Keilholz[1]
[1]Biomedical Engineering, Emory University/ Georgia Institute of Technology, Atlanta, GA, United States

2137. Simultaneous Voxel-Wise Mapping of Oxygen Extraction Fraction, Blood Flow and Cerebral Metabolic Rate of Oxygen
Yongxia Zhou[1], Zachary B. Rodgers[1], Felix W. Wehrli[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States

2138. Effect of Noise Regression on ASL Based Functional Connectivity
Kay Jann[1], Edgar A. Rios Piedra[1], Robert X. Smith[1], Danny JJ Wang[1]
[1]Department of Neurology, University of California Los Angeles, Los Angeles, CA, United States

2139. MR Perfusion Imaging Using High-Temporal-Resolution Resting-State Functional Magnetic Resonance Imaging
Tianyi Qian[1], Yinyan Wang[2, 3], Tao Jiang[2, 3]
[1]MR Collaborations NE Asia, Siemens Healthcare, Beijing, China; [2]Beijing Neurosurgical Institute, Beijing, China; [3]Beijing Tiantan Hospital, Capital Medical University, Beijing, China

Traditional Poster
Stroke & Neurovascular: Animal Studies

Exhibition Hall Wednesday 13:30-15:30

2140. Time-Dependent Influence of Hypoxic Ischemic Encephalopathy in Cerebral Metabolite Changes in Neonatal Rats Detected by *In Vivo* 1H MR Spectroscopy at 9.4 T
Do-Wan Lee[1, 2], Dong-Cheol Woo[2], Minyoung Lee[2, 3], Chul-Woong Woo[2], Sang-Tae Kim[2], Choong Gon Choi[4], Bo-Young Choe[1], Byong Sop Lee[3]
[1]Department of Biomedical Engineering, and Research Institute of Biomedical Engineering, The Catholic University of Korea College of Medicine, Seoul, Korea; [2]Asan Institute for Life Sciences, Asan Medical Center, Seoul, Korea; [3]Department of Pediatrics, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea; [4]Department of Radiology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

2141. Marked Perturbations in CBF and CO2 Reactivity in Subarachnoid Hemorrhage
Yuhao Sun[1, 2], Qiang Shen[1], Shiliang Huang[1], Timothy Q. Duong[1]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Department of Neurosurgery, Ruijin Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, China

2142. Chronic Cerebral Hypoperfusion Induces Cerebral Hemodynamics and Angiogenesis
Shi Chang-Zheng[1], Jing Zhen[2], Ruan Yiwen[2], Huang Li¡¯an[2]
[1]Jinan University , Guangzhou, Guangdong, China; [2]Jinan University, Guangzhou, Guangdong, China

2143. Time-To-Peak of T2*-Weighted Signal Change of Oxygen Challenge Improves the Identification of Penumbra in Ischemic Stroke
Qiang Shen[1], Shiliang Huang[1], Timothy Q. Duong[1]
[1]Research Imaging Institute, The University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

2144. Diffusion-Weighted Spatiotemporal Encoding Schemes in the Assessment of SPIO-Labeled Cell Therapy for Ischemic Stroke
Jens T. Rosenberg[1, 2], Avigdor Leftin[3], Eddy Soloman[3], Lucio Frydman, [13], Samuel C. Grant[1, 2]

[1]National High Magnetic Field Laboratory, Florida State University, Tallahassee, FL, United States; [2]Chemical & Biomedical Engineering, Florida State University, Tallahassee, FL, United States; [3]Chemical Physics, Weizmann Institute of Science, Rehovot, Israel

2145. Detection of Subtle Hypoxic-Ischemic Injury by Oscillating Gradient Diffusion MRI in Neonatal Mouse Brain
Dan Wu[1], Frances J. Northington[2], Lee J. Martin[3], Jiangyang Zhang[4]
[1]Biomedical Engineering, Johns Hopkins University School of Medicine, BALTIMORE, MD, United States; [2]Pediatrics, Johns Hopkins University School of Medicine, MD, United States; [3]Neuroscience, Johns Hopkins University School of Medicine, MD, United States; [4]Radiology, Johns Hopkins University School of Medicine, MD, United States

2146. Assessment of Blood Brain Barrier Permeability in the Rat Brain with Ischemic Occlusion Using DSC-MRI
Ramesh Paudyal[1], Silun Wang[1], Yonggang Li[2], Byron D. Ford[2], Xiaodong Zhang[1]
[1]Yerkes Imaging Center, Yerkes Regional Primate Research Center, Emory University, Atlanta, GA, United States; [2]Neurobiology, Neurosciences Institute, Morehouse School of Medicine, Atlanta, GA, United States

2147. Combine Diffusion Tensor Imaging and RGMa Immunohistochemical Analysis to Evaluate the Crossed Cerebellar Diaschisis in Rats After Middle Cerebral Artery Occlusion
Yong Zhang[1], Jiangliang Cheng[1], Yanan Lin[1], Lu Yang[1], Shanshan Zhao[1], Dandan Zheng[2]
[1]Dept. of MRI, The First Affiliated Hospital of Zhengzhou University, Zhengzhou, Henan, China; [2]GE Healthcare, China, Beijing, China

2148. The Role of Collateral Circulation in Perfusion and Diffusion MRI After Stroke
Yu-Chieh Jill Kao[1, 2], Esteban A. Oyarzabal[3], Hua Zhang[4], James E. Faber[4], Yen-Yu Ian Shih[3]
[1]Neurology and BRIC, University of North Carolina , Chapel Hill, NC, United States; [2]Imaging Research Center, Taipei Medical University, Taipei, Taiwan; [3]Neurology and BRIC, University of North Carolina, Chapel Hill, NC, United States; [4]Department of Cell Biology and Physiology, University of North Carolina, Chapel Hill, NC, United States

2149. Monitoring Response to Neuregulin-1 in a Rat Model of Stroke Using Perfusion- And Diffusion Weighted MRI
Ramesh Paudyal[1], Yonggang Li[2], Silun Wang[1], Byron D. Ford[2], Xiaodong Zhang[1]
[1]Yerkes Imaging Center, Yerkes National Primate Research Center, Emory University, Atlanta, GA, United States; [2]Neurobiology, Neuroscience Institute, Morehouse School of Medicine, Atlanta, GA, United States

2150. Absolute T_1 and T_2 Relaxation Times; Proxies for Onset Time and Tissue Status Assessment in Acute Ischaemic Stroke
Harriet J. Rogers[1], Bryony L. McGarry[1], Kimmo T. Jokivarsi[2], Michael J. Knight[1], Alejandra Sierra Lopez[2], Olli HJ Gröhn[2], Risto A. Kauppinen[1]
[1]School of Experimental Psychology and CRIC, University of Bristol, Bristol, United Kingdom; [2]Department of Neurobiology, University of Eastern Finland, Kuopio, Finland

2151. Effect of Motor Cortex Lesions on Brain Connectivity of Rhesus Monkeys
Bang-Bon Koo[1], Mary Orczykowski[1, 2], Kevin Arndt[1], Yansong Zhao[3], Tara Moore[1], Ron J. Killiany[1]
[1]Anatomy and Neurobiology, Boston University School of Medicine, Boston, MA, United States; [2]Boston University School of Medicine, MA, United States; [3]Philips Healthcare, Cleveland, OH, United States

2152. Chronic Methylene Blue Treatment Decreases Ischemic Stroke Volume and Improves Functional Behavioral Recovery
Pavel Rodriguez[1], Jiang (John) Zhao[1, 2], Timothy Q. Duong[1]
[1]Research Imaging Institute, The University of Texas Health Science Center , San Antonio, TX, United States; [2]Department of Anatomy and Embryology, Peking University Health Science Center, Beijing, United States

2153. ADC Correlates of CBF and Tissue PO2 in Global Cerebral Ischemia
Yash Vardhan Tiwari[1, 2], Timothy Duong[3]
[1]Research Imaging Institute, UT Health Science Center , San Antonio, TX, United States; [2]Biomedical Engineering, UT, San Antonio, TX, United States; [3]Research Imaging Institute, UT Health Science Center, San Antonio, TX, United States

2154. Assessment of Experimental Stroke Lesion Size Using 1T Benchtop MRI
Jed Wingrove[1], Daniel Stcukey*[1], Valerie Taylor[1], Thomas Roberts[1], Rajiv Ramasawmy[1], Bernard Siow+[1], Mark Lythgoe+[1]*
[1]Centre for Advanced Biomedical Imaging, Department of Medicine, University College London, London, United Kingdom

2155. Age Dependent Differences in Photothrombotic Ischemic Injury Detected Using Quantitative MR Imaging
Ursula Tuor[1], Min Qiao, Manasi Sule, Qinbo Deng, Melissa Morgunov, David Rushforth, Tadeusz Foniok
[1]Physiology and Pharmacology, Cl Neurosciences and Radiology, University of Calgary, Calgary, AB, Canada

2156. Cerebrovascular Damage After Stroke in Type Two Diabetic Rats Measured by MRI
Guangliang Ding[1], Tao Yan[1], Jieli Chen[1], Michael Chopp[1, 2], Lian Li[1], Qingjiang Li[1], Chengcheng Cui[1], Ruizhuo Ning[1], Quan Jiang[1]
[1]Neurology, Henry Ford Hospital, Detroit, MI, United States; [2]Physics, Oakland University, Rochester, MI, United States

2157. Development of a Porcine Middle Cerebral Artery Occlusion Stroke Model and Stroke Characterization with Quantitative MRI Techniques.
Shannon P. Holmes[1], Simon R. Platt[2], Liya Wang[3], Vivian Lau[2], Grace Harrison[2], Hui Mao[3], Franklin West[2]
[1]Veterinary Biosciences & Diagnostic Imaging, University of Georgia, Athens, GA, United States; [2]University of Georgia, GA, United States; [3]Emory University, GA, United States

2158. Assessment of Neuroprotective Effects of Neuregulin-1 on in Acute Stroke Using Diffusion MRI
Silun Wang[1], Yonggang Li[2], Ramesh Paudyal[1], Byron D. Ford[2], Xiaodong Zhang[1, 3]
[1]YERKES IMAGING CENTER, Emory University, Atlanta, GA, United States; [2]Department of Neurobiology, Morehouse School of Medicine, GA, United States; [3]Division of Neuropharmacology and Neurologic Diseases, Emory University, GA, United States

2159. Assessment of Pharmacologically Induced Hypothermia in a Rodent Model of Focal Cerebral Ischemia Using Diffusion Tensor Imaging
Silun Wang[1], Xiaohuan Gu[2], Ramesh Paudyal[1], Shan Ping Yu[2], Xiaodong Zhang[1, 3]
[1]YERKES IMAGING CENTER, Emory University, Atlanta, GA, United States; [2]Department of Anesthesiology and Department of Neurology, Emory University School of Medicine, GA, United States; [3]Division of Neuropharmacology and Neurologic Diseases, Yerkes National Primate Research Center, GA, United States

2160. Identification of 4-Vessel Occlusion in Rat Using MR Angiography and ^{1}H MRS at 14.1T
Mario G. Lepore[1], Corina Berset[1], Rolf Gruetter[2, 3], Hongxia Lei[4, 5]
[1]AIT, Center for Biomedical Imaging (CIBM), Ecole Polytechnique Fédérale de Lausanne, Lausanne, Vaud, Switzerland; [2]Laboratory for Functional and Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Vaud, Switzerland; [3]University of Lausanne, Lausanne, Vaud, Switzerland; [4] AIT, Center for Biomedical Imaging (CIBM), Ecole Polytechnique Fédérale de Lausanne, Lausanne, Vaud, Switzerland; [5]University of Geneva, Geneva, Switzerland

2161. Absolute and Relative Blood Volume Measurements by Dual T1 and T2 MRI Acquisitions with Single Contrast Agent in Acute Phase of Ischemic Brain
Ji-Yeon Suh[1], Hoesu Jung[2], Hyung Joon Cho[2], Young Ro Kim[3], Jeong Kon Kim[4], Gyunggoo Cho[1]
[1]Magnetic Resonance Research, Korea Basic Science Institute, Cheongju, Chungbuk, Korea; [2]Nano-Bioscience and Chemical Engineering, Ulsan National Institute of Science & Technology (UNIST), Ulsan, Korea; [3]Martinos Center for Biomedical Imaging, Massachusetts General Hospital, MA, United States; [4]Asan Medical Center University of Ulsan college of Medicine, Seoul, Korea

2162. MRI of a Distal MCAO Ischemic Stroke Lesion Model in Mice
Tom Dresselaers[1], Annelies Quaegebeur[2], Kristof Govaerts[1], Inmaculada Segura[2], Robin Lemmens, Peter Carmeliet[2], Uwe Himmelreich[1]
[1]Dept. of Imaging and Pathology, KU Leuven, Leuven, Belgium; [2]Vesalius Research Center, VIB, Belgium

2163. Characterization of the Ischemic Penumbra Using Diffusion Tensor MR Imaging in a Rat Model of Ischemic Stroke Treated with Neuregulin-1
Silun Wang[1], Yonggang Li[2], Ramesh Paudyal[1], Byron D. Ford[2], Xiaodong Zhang[1]
[1]YERKES IMAGING CENTER, Emory University, Atlanta, GA, United States; [2]Department of Neurobiology, Morehouse School of Medicine, GA, United States

Traditional Poster
Stroke & Neurovascular: Human Studies
Exhibition Hall Wednesday 13:30-15:30

2164. Identifying Infarct Lesion Using Diffusion Kurtosis Model with Multi-Band EPI Sequence in Acute Ischemic Stroke Patients
Huan He[1], Tianyi Qian[2], Ni Liu[1], Xingli Liu[1], Zhongyan Wang[1], Lu Su[1], Peiyi Gao[1]
[1]Radiology, Beijing Tiantan Hospital, Capital Medical University, Beijing, China; [2]MR Collaborations NE Asia, Siemens Healthcare, Beijing, China

2165. Fast and Robust Lesion Detection and Assessment in Acute Ischaemic Stroke Patients from ADC and Quantitative T2 Mapping
Michael John Knight[1], Bryony McGarry[1], Harriet Rogers[1], Joanne Robson[2], Rose Bosnell[3], Philip Clatworthy[1], Risto Kauppinen[1]
[1]School of experimental psychology, University of Bristol, Bristol, avon, United Kingdom; [2]Southmead Hospital, Bristol, avon, United Kingdom; [3]School of clinical sciences, University of bristol, Bristol, avon, United Kingdom

2166. Can Diffusion Weighted MR Spectroscopy Be Used in Differentiating Acute MELAS and Acute Stroke?
Dandan Zheng[1], Bing Wu[1], Jiangxi Xiao[2], Zhenghua Liu[2], Zhenyu Zhou[1]
[1]GE Healthcare China, Beijing, China; [2]Radiology Department, Peking University First Hospital, Beijing, China

2167. Optimal T1-Weighted MR Plaque Imaging for Cervical Carotid Artery Stenosis in Predicting Development of Microembolic Signals During Carotid Dissection in Endarterectomy.
Yuiko Sato[1], Kuniaki Ogasawara[1], Shinsuke Narumi[2], Makoto Sasaki[3], Ayumi Saito[2], Takamasa Namba[1], Masakazu Kobayasi[1], Kenji Yoshida[1], Yasuo Terayama[2], Akira Ogawa[1]
[1]Department of Neurosurgery, Iwate Medical Univercity, Morioka, Iwate, Japan; [2]Department of Neurology and Gerontology, Iwate Medical Univercity, Morioka, Iwate, Japan; [3]Division of Ultra-High Field MRI and Department of Radiology, Iwate Medical Univercity, Mrioka, Iwate, Japan

2168. Regional Quantifying Normal-Appearing White Matter Perfusion in Mild to Moderate Hypertension Using 3D Pseudo-Continous Arterial Spin Labeling
Ting Wang[1], Yanhua Li[2], Xinhong Guo[2], Diandian Huang[1], Lin Ma[1], Xin Lou[1]
[1]Department of Radiology, Chinese PLA General Hospital, Beijing, China; [2]Department of Cardiology, Chinese PLA General Hospital, Beijing, China

2169. Small Network Properity Changes in MCI with Lacunar Infraction
Wu Wenbo[1], Yin Zhenyu[1], Zhang Xin[2], Zhou Fei[2], Liu Renyuan[1], Wang Huiting[2], Zhu Bin[2], Zhang Bing[2], Xu Yun[1]
[1]Neurology, The Affiliated Drum Tower Hospital of Nanjing University Medical School, Nanjing, Jiangsu, China; [2]Radiology, The Affiliated Drum Tower Hospital of Nanjing University Medical School, Jiangsu, China

2170. Validity of Three Dimensional Pseudo-Continuous Arterial Spin Labeling in Leptomeaningeal Collaterals Assessement for Patients with Unilateral Middle Cerebral Artery Stenosis
Jinhao Lyu[1], Ning Ma[2], Zhongrong Miao[2], Lin Ma[1], Xin Lou[1]
[1]Department of Radiology, Chinese PLA General Hospital, Beijing, China; [2]Department of Interventional Neuroradiology, Beijing Tiantan Hospital, Capital Medical University, Beijing, China

2171. Interstudy and Intraobserver Reproducibility of High-Resolution MRI in Evaluating Basilar Atherosclerotic Plaque at 3Tesla
Luguang Chen[1], Xia Tian[1], Qi Liu[1], Chao Ma[1], Qian Zhan[1], Xuefeng Zhang[1], Yuanliang Jiang[1], Jianping Lu[1]
[1]Department of Radiology,Changhai Hospital of Shanghai, The Second Military Medical University, Shanghai, China

2172. Plaque Characteristics, Burden and Distribution Assessment with High-Resolution Intracranial Vessel Wall Imaging at 3 Tesla MRI
Nikki Dieleman[1], Wenjie Yang[2], Jill Abrigo[3], Ka Lok Lee[3], Chiu Wing Chu[3], Anja G. van der Kolk[1], Jeroen C.W. Siero[1], Ka Sing Wong[2], Jeroen Hendrikse[1], Xiang Yan Chen[2]
[1]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]Department of Medicine, Chinese University of Hong Kong, Shatin, Hong Kong, China; [3]Department of Imaging and Interventional Radiology, Chinese University of Hong Kong, Shatin, Hong Kong, China

2173. Prevalence of Cerebrovascular Reserve Impairment in Patients with Severe Intracranial Arterial Stenosis
Alexandre Krainik[1], Olivier Heck[2], Arnaud Attyé[2], Naila Boudiaf[3], Florence Tahon[2], Kamel Boubagra[2], Johan Pietras[2], Olivier Detante[2]
[1]Neuroradiology and MRI, University hospital of Grenoble, Grenoble, France; [2]University hospital of Grenoble, France; [3]LPNC, France

2174. Reduced Visual Cortex Perfusion Without Volume Loss in Mild to Moderate Hypertension
Diandian Huang[1], Xin Lou[1], Lin Ma[1], Zhengyu Zhou[2]
[1]radiology, Chinese PLA General Hospital, Beijing, China; [2]MR Research Center, GE Health care, Beijing, China

2175. Cerebral Hemodynamics After Reduction of Blood Pressure in Hypertension Measured with 3D PCASL
Xin Lou[1], Ning Ma[2], Yanhua Li[3], Diandian Huang[1], Ting Wang[1], Zhenyu Zhou[4], Bing Wu[4], Lin Ma[1]
[1]Department of Radiology, Chinese PLA General Hospital, Beijing, China; [2]Department of Interventional Neuroradiology, Beijing Tiantan Hospital, Beijing, China; [3]Department of Cardiology, Chinese PLA General Hospital, Beijing, China; [4]MR Research Center, GE Healthcare, Beijing, China

2176. Quantifying the Effects of Lesions with the Tractography-Based Lesion Assessment Standard (TractLAS)
Christopher J. Steele[1], Leonie Lampe[1], Alexander Schaefer[1, 2], Alfred Anwander[1], Bernhard Sehm[1], Arno Villringer[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Sachsen, Germany; [2]Department of Electrical and Computer Engineering, Clinical Imaging Research Centre & Singapore Insitu, Singapore, Singapore

2177. Identification of Neurovascular Changes in Cerebral Amyloid Angiopathy by Modeling Subject-Specific Hemodynamic Response Functions
Rebecca J. Williams[1, 2], Bradley Goodyear[1, 2], Stefano Peca[3], Cheryl R. McCreary[1, 2], Richard Frayne[1, 2], Eric E. Smith[1, 2], G Bruce Pike[1, 2]
[1]Radiology and Clinical Neurosciences, Hotchkiss Brain Institute, University of Calgary, Calgary, Alberta, Canada; [2]Seaman Family MR Research Centre, Alberta Health Services, Calgary, Alberta, Canada; [3]Tom Baker Cancer Centre, University of Calgary, Calgary, Alberta, Canada

2178. Identifying Perfusion Deficits with Simultaneous Multi Slice Acceleration EPI Technique: A Non-Invasive Method
Tianyi Qian[1], Zhigang Qi[2], Mo Zhang[2], Kun Zhou[3], Kuncheng Li[2]

[1]MR Collaborations NE Asia, Siemens Healthcare, Beijing, China; [2]Radiology, Xuanwu Hospital, Capital Medical University, Beijing, China; [3]Siemens Shenzhen Magnetic Resonance Ltd., Shenzhen, China

2179. Quantitative Evaluation of Collateral Perfusion Using Multi-Delay 3D PCASL in Patients with Middle Cerebral Artery Stenosis
Xin Lou[1], Ning Ma[2], Jinghao Lyv[1], Yang Xu[1], Zhenyu Zhou[3], Bing Wu[3], Lin Ma[1]
[1]Department of Radiology, Chinese PLA General Hospital, Beijing, China; [2]Department of Interventional Neuroradiology, Beijing Tiantan Hospital, Beijing, China; [3]MR Research Center, GE Healthcare, Beijing, China

2180. Monitoring PH and Energy Metabolim in Subacute Stroke Using ^{31}P and ^{1}H MRSI
Ulrich Pilatus[1], Johann-Philipp Zöllner[2], Elke Hattingen[1], Oliver Singer[2]
[1]Neuroradiology, Goethe-University Frankfurt, Frankfurt, Germany; [2]Neurology, Goethe-University Frankfurt, Germany

2181. Assessments of Oxygen Extraction Fraction in Canines with Internal Carotid Arteries Ligated on Both Sides
Peng Wu[1], Feiyan Chang[2], Sheng Xie[2], Hua Guo[1]
[1]Center for Biomedical Imaging Research, Department of Biomedical Engineering, School of Medicine, Tsinghua University, Beijing, China; [2]Department of Radiology, China–Japan Friendship Hospital, Beijing, China

2182. Utility of Bi- And Stretched-Exponential Diffusion-Weighted MR Imaging Models Using High B-Values in Assessment of Stroke
Shiteng Suo[1], Zengai Chen[1], Jianrong Xu[1]
[1]Department of Radiology, Ren Ji Hospital, School of Medicine, Shanghai Jiao Tong University, Shanghai, China, China

2183. Prediction of the Onset Day Using by T2*-Weighted Magnetic Resonance Imaging in Patients with Subarachnoid Hemorrhage
Takashi Inoue[1], Miki Fujimura[2], Kuniyasu Niizuma[2], Teiji Tominaga[2]
[1]Neurosurgery, Sendai Medical Center, Sendai, Miyagi, Japan; [2]Neurosurgery, Tohoku University Graduate School of Medicine, Sendai, Miyagi, Japan

2184. DKI Manifestation in Patients with Acute Ischemic Stroke
Gang Guo[1], Liuhong Zhu[1]
[1]Radiology, Xiamen Second Hospital, Xiamen, Fujian, China

2185. The Influence of Clinical Confounders on Imaging Biomarkers of Lesion Age in Acute Stroke
Vince I. Madai[1], Carla N. Wood[1], Ivana Galinovic[1], Ulrike Grittner[1], Gajanan S. Revankar[1], Steve Z. Martin[1], Olivier Zaro Weber[2], Walter Möller-Hartmann[3], Federico C. von Samson-Himmelstjerna[1, 4], Wolf-Dieter Heiss[2], Martin Ebinger[5], Jochen B. Fiebach[1], Jan Sobesky[1]
[1]Center for Stroke Research Berlin, Charité Universitätsmedizin Berlin, Berlin, Germany; [2]Max Planck Institute for Metabolism Research, Cologne, Germany; [3]Department of Radiology, Ludmillenstift Meppen, Meppen, Germany; [4]Fraunhofer MEVIS, Bremen, Germany; [5]Centre for Stroke Research Berlin, Charité Universitätsmedizin Berlin, Berlin, Germany

2186. Quantification of the Local Dynamic of the Cerebrovascular Autoregulation
Marco Piccirelli[1], Bas van Niftrik[2], Oliver Bozinov[2], Athina Pangalu[1], Antonios Valavanis[1], Luca Regli[2], Jorn Fierstra[2]
[1]Neuroradiology University Hospital, Zurich, ZH, Switzerland; [2]Neurosurgery University Hospital, Zurich, ZH, Switzerland

2187. Comparison of PWI, DWI, and Clinical Outcome for Suspected Stroke
Neil Chatterjee[1], Shyam Prabhakaran[2], Sameer Ansari[1], Timiothy Carroll[1]
[1]Radiology, Northwestern University, Chicago, IL, United States; [2]Neurology, Northwestern University, Chicago, IL, United States

2188. Susceptibility-Weighted Imaging of Acute Ischemic Stroke: Quantification of Hypoperfusion
Hung-Wen Kao[1, 2], Yu-Chuan Chang[3], Ching-Po Lin[2, 4], Chien-Yuan Eddy Lin[5, 6]
[1]Department of Radiology, Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan; [2]Department of Biomedical Imaging and Radiological Sciences, National Yang-Ming University, Taipei, Taiwan; [3]Graduate Institute of Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan; [4]Institute of Neuroscience, National Yang-Ming University, Taipei, Taiwan; [5]GE Healthcare, Taipei, Taiwan; [6]GE Healthcare China, Beijing, China

2189. Longitudinal Quantitative MRI Provides Quality Assurance Measures in Patients with Ischemic Stroke Treated with Autologous Bone Marrow Derived Mononuclear Cells.
Muhammad E. Haque[1], Khader M. Hasan[2], Benjamin A. Schatz[3], Sarah M. Lund[3], Farhaan S. Vahidy[4], Sean I. Savitz[4]
[1]Neurology, Unversity of Texas Health Science Center at Houston , Houston, TX, United States; [2]Diagnostic and Interventional Imaging, Unversity of Texas Health Science Center at Houston , Houston, TX, United States; [3]Unversity of Texas Health Science Center at Houston , TX, United States; [4]Neurology, Unversity of Texas Health Science Center at Houston , TX, United States

2190. Amide Proton Transfer in Detecting Intracerebral Hemorrhage
Xiaoyue Ma[1], Panli Zuo[2], Benjamin Schmitt[3], Dapeng Shi[4], Jinyuan Zhou[5], Meiyun Wang[4]
[1]Radiology, Zhengzhou University People¡¯s Hospital & Henan Provincial People¡¯s Hospital, Zhengzhou, Henan, China; [2]Siemens Healthcare, MR Collaboration NE Asia, Beijing, China; [3]Siemens Ltd Australia, Healthcare Sector, Macquarie Park, Australia; [4]Radiology, Henan Provincial People¡¯s Hospital, Zhengzhou, Henan, China; [5]Radiology, John Hopkins University, Baltimore, United States

2191. Characteristics of the Carotid Atherosclerotic Plaque Classified by NIHSS in Ischemic Stroke
Xiao Gao[1], Shengzhang Ji[1], Jinyu Song[1], Xihai Zhao[2], Haiman Bian[1], Yu Zhang[3], Yingyin Feng[1], Shengli Chen[1]
[1]The 4th center hospital of TianJin, TianJin, China; [2]Tsinghua University School of Medicine, Beijing, China; [3]Philips Healthcare, Beijing, China

ISMRM MERIT AWARD magna cum laude

2192. An Automated Post-Processing Pipeline for the Separation of Intracranial and Extracranial Vessels in 7T TOF-MRA
Zihao Zhang[1, 2], Dehe Weng[3], Jing An[3], Zhentao Zuo[1], Bo Wang[1], Qingle Kong[1], Ning Wei[1, 2], Yan Zhuo[1], Xiaohong Joe Zhou[4], Rong Xue[1]
[1]State Key Lab of Brain and Cognitive Science, Beijing MR Center for Brain Research, Institute of Biophysics, Chinese Academy of Sciences,, Beijing, China; [2]Graduate School, University of Chinese Academy of Sciences, Beijing, China; [3]Siemens Shenzhen Magnetic Resonance Ltd., Shenzhen, Guangdong, China; [4]Dept. of Radiology, Center for MR Research, University of Illinois, Chicago, IL, United States

ISMRM MERIT AWARD magna cum laude

2193. Semi-Automated Visualization and Segmentation of Cerebral Veins from QSM
Suheyla Cetin[1], Berkin Bilgic[2], Audrey Peiwen Fan[3], Kawin Setsompop[2], Gozde Unal[1]
[1]Faculty of Natural Sciences and Engineering, Sabanci University, Istanbul, Turkey; [2]Radiology, Athinoula A. Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [3]Department of Radiology, Stanford University, CA, United States

2194. EPT - Measurement of Brain Conductivity for Non-Oncologic Applications
Monika Huhndorf[1], Christian Stehning[2], Axel Rohr[1], Michael Helle[2], Thomas Stehle[2], Ulrich Katscher[2], Olav Jansen[1]
[1]Clinic for Radiology and Neuroradiology, Kiel, Germany; [2]Philips Research Europe, Hamburg, Germany

2195. Measuring the Timing Information of Blood Flow in Acute Stroke with the "Background Noise" of BOLD Signal
Tianyi Qian[1], Zhongyan Wang[2], Peiyi Gao[2]
[1]MR Collaborations NE Asia, Siemens Healthcare, Beijing, China; [2]Radiology, Beijing Tiantan Hospital, Capital Medical University, Beijing, China

Traditional Poster
Mechanisms of Neural Degeneration & Damage
Exhibition Hall Wednesday 13:30-15:30

2196. High-Resolution Neurite Orientation Dispersion and Density Imaging in the Substantia Nigra of De Novo Parkinson Disease
Koji Kamagata[1], Masaaki Hori[1], Akira Nishikori[2], Kohei Tsuruta[2], Ayami Okuzumi[3], Taku Hatano[3], Kouhei Kamiya[4], Nobutaka Hattori[3], Shigeki Aoki[1]
[1]Department of Radiology, Juntendo University, Tokyo, Bunkyo-ku, Japan; [2]Department of Radiological Sciences, Tokyo Metropolitan University, Tokyo, Hachioji-shi, Japan; [3]Department of Neurology, Juntendo University, Tokyo, Bunkyo-ku, Japan; [4]Department of Radiology, the University of Tokyo, Tokyo, Bunkyo-ku, Japan

2197. Brain Iron Accumulation in Wilson Disease: A Pilot 7T MR-Histopathology Correlation Study
Petr Dusek[1, 2], Erik Bahn[3], Tomasz Litwin[4], Christiane Wegner[3], Vince Istvan Madai[5], Matthias Dieringer[6, 7], Till Huelnhagen[6], Michael Knauth[1], Thoralf Niendorf[6, 7], Jan Sobesky[5, 7], Anna Czlonkowska[4, 8], Wolfgang Brueck[3], Friedemann Paul[9], Susanne A. Schneider[10], Jens Wuerfel[1, 9]
[1]Institute of Neuroradiology, University Medicine Goettingen, Goettingen, Germany; [2]Department of Neurology and Center of Clinical Neuroscience, 1st Faculty of Medicine and General University Hospital in Prague, Prague, Czech Republic; [3]Institute of Neuropathology, University Medicine Goettingen, Goettingen, Germany; [4]2nd Department of Neurology, Institute Psychiatry and Neurology, Warsaw, Poland; [5]Department of Neurology and Center for Stroke Research Berlin (CSB), Charité-Universitaetsmedizin, Berlin, Germany; [6]Berlin Ultrahigh Field Facility (B.U.F.F.), Max-Delbrueck Center for Molecular Medicine, Berlin, Germany; [7]Experimental and Clinical Research Center (ECRC), Charité-Universitaetsmedizin and Max Delbrueck Center for Molecular Medicine (MDC), Berlin, Germany; [8]Department of Experimental and Clinical Pharmacology, Medical University, Warsaw, Poland; [9]NeuroCure Clinical Research Center, Charité-Universitaetsmedizin, Berlin, Germany; [10]Neurology Department, University of Kiel, Kiel, Germany

2198. Diffusion Kurtosis Imaging Detects Microstructural Alterations in Brain of α-Synuclein Overexpressing Transgenic Mouse Model of Parkinson's Disease: A Pilot Study
Peter Latta[1], Amit Khairnar[1], Eva Drazanova[2], Jana Kucerova[1], Anas Arab[1], Birgit Hutter-Paier[3], Daniel Havas[3], Manfred Windisch[4], Zenon Starcuk Jr. [2], Boguslaw Tomanek[1, 5], Irena Rektorova[1]
[1]Central European Institute of Technology, Masaryk University, Brno, Czech Republic; [2]Institute of Scientific Instruments, Academy of Sciences of the Czech Republic, Brno, Czech Republic; [3]QPS Austria GmbH, Graz, Austria; [4]NeuroScios GmbH, Graz, Austria; [5]University of Alberta, Edmonton, Alberta, Canada

2199. Application of GluCEST MRI in Detection of Epileptogenic Foci in Temporal Lobe Epilepsy
Ravi Prakash Reddy Nanga[1], Kathryn A. Davis[2], Sandhitsu Das[3], Stephanie H. Chen[2], Peter Hadar[2], Timothy H. Lucas[4], Brian Litt[2], John A. Detre[2], Hari Hariharan[1], Mark A. Elliott[1], Ravinder Reddy[1]
[1]Radiology, University of Pennsylvania Health Systems, Philadelphia, PA, United States; [2]Neurology, University of Pennsylvania, Philadelphia, PA, United States; [3]Penn Image Computing & Science Lab, University of Pennsylvania, Philadelphia, PA, United States; [4]Neurosurgery, University of Pennsylvania, Philadelphia, PA, United States

2200. Reduced Neurite Density in Pre-Manifest Huntington's Disease Population Detected by NODDI
Jiaying Zhang[1], Rachael I. Scahill[2], Alexandra Durr[3], Blair Leavitt[4], Raymund Roos[5], Sarah J. Tabrizi[2], Hui Zhang[1]
[1]Department of Computer Science and Centre for Medical Image Computing, UCL, London, United Kingdom; [2]Institute of Neurology, UCL, London, United Kingdom; [3]Department of Genetics and Cytogenetics, INSERM UMR S679, APHP Hôpital de la Salpêtrière, Paris, France; [4]Department of Medical Genetics, University of British Columbia, British Columbia, Canada; [5]Department of Neurology, Leiden University Medical Centre, Leiden, Netherlands

2201. The Abnormality of Functional Connectivity in Parkinson's in Dopaminergic Regions
Yue Xing[1], Stefan Schwarz[1], Nin Bajaj[2], Penny Gowland[3], Dorothee Auer[1]
[1]Sir Peter Mansfield Imaging Centre, School of Medicine, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]Division of Neurology, Nottingham University Hospitals NHS Trust, Nottingham, Nottinghamshire, United Kingdom; [3]Sir Peter Mansfield Imaging Centre, School of Physics and Astronomy, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

2202. Diffusion Changes in the Medulla Oblongata in Parkinson Disease
Nadya Pyatigorskaya[1, 2], Romain Valabregue, [13], Cyril Poupon[4], Marie Vidailhet, [35], Stephane Lehericy[1, 2]
[1]Centre de NeuroImagerie de Recherche – CENIR, Institut du Cerveau et de la Moelle épinière – ICM, Paris, France; [2]Department of Neuroradiology, Hôpital Pitie-Salpetriere, Paris, France; [3]Université Pierre et Marie Curie and Inserm UMR-S1127; CNRS, UMR 7225, Institut du Cerveau et de la Moelle épinière – ICM, Paris, France; [4]NeuroSpin, CEA, Saclay, France; [5]Federation de Neurologie, Hôpital Pitie-Salpetriere, Paris, France

2203. Odor-Related Functional Deficits in the Primary Olfactory Cortex in Early-Stage Parkinson's Disease
Jianli Wang[1], Thyagarajan Subramanian[2, 3], Zachary Mosher[1], Jeffrey Vesek[1], Qing X. Yang[1, 4]
[1]Radiology, Penn State College of Medicine, Hershey, PA, United States; [2]Neurology, Penn State College of Medicine, Hershey, PA, United States; [3]Neural & Behavioral Sciences, Penn State College of Medicine, Hershey, PA, United States; [4]Neurosurgery, Penn State College of Medicine, Hershey, PA, United States

2204. Abnormalities in the Visual System of Streptozotocin-Induced Type 1 Diabetic Rats-A Diffusion Tensor Imaging Study
Lifeng Gao[1], Mingming Huang[2], Fuchun Lin[1], Hao Lei[1]
[1]State Key Laboratory of Magnetic Resonance and Atomic and Molecular Physics, Wuhan Institute of Physics and Mathematics, Chinese Academy of Sciences, Wuhan, Hubei, China; [2]Department of Radiology Affiliated Hospital of Guiyang Medical University, Guiyang, Guizhou, China

2205. Diffusion MRI of the Spinal Cord Allows *In Vivo* Early Detection and Monitoring of GM and WM Degeneration in a Murine ALS Model
Ileana Zucca[1], Matteo Figini[1], Alessandro Scotti[1], Stefania Marcuzzo[2], Silvia Bonanno[2], Victoria Moreno Manzano[3], José Manuel Garcia Verdugo[4], Pia Bernasconi[2], Renato Mantegazza[2], Maria Grazia Bruzzone[5]
[1]Scientific Direction, Fondazione IRCCS Istituto Neurologico "Carlo Besta", Milan, Italy; [2]Neurology IV - Neuromuscular Diseases and Neuroimmunology Unit, Fondazione IRCCS Istituto Neurologico "Carlo Besta", Milan, Italy; [3]Neuronal and Tissue Regeneration laboratory, Centro de Investigación Príncipe Felipe, Valencia, Spain; [4]Unidad de Neurobiología comparada, Universidad de Valencia, Valencia, Spain; [5]Neuroradiology Unit, Fondazione IRCCS Istituto Neurologico "Carlo Besta", Milan, Italy

2206. Imaging Dopamine Autoreceptor Activity Using Functional MRI as a Novel Technique in Parkinson¡¦s Disease
Chiao-Chi V. Chen[1], Yi-Hua Hsu[1], Chien-Yuan E. Lin[2, 3], Chen Chang[1]
[1]Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan; [2]GE Healthcare, Taipei, Taiwan; [3]MR Advanced Application and Research Center, GE Healthcare,, China

2207. Microstructural Changes of Short Association Fibers in Parkinson's Disease and Normal Aging Assessed by Diffusion Tensor Imaging.
Jan Sedlacik[1], Jan-Rüdiger Schüre[1, 2], Kai Boelmans[3], Jens Fiehler[1]
[1]University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Technical University of Ilmenau, Thüringen, Germany; [3]University Hospital of Würzburg, Bayern, Germany

2208. Pathological Differences in Neuromyelitis Optica Reflected Differently by Two Myelin Water Imaging Techniques
Shannon Kolind[1], Praveena Manogaran[1], Irene Vavasour[2], Bretta Russell-Schulz[2], Katrina McMullen[1], Jing Zhang[2], Cornelia Laule, [23], Alexander MacKay[2, 4], Alexander Rauscher[2], David Li[2], Anthony Traboulsee[1]
[1]Medicine, University of British Columbia, Vancouver, BC, Canada; [2]Radiology, University of British Columbia, Vancouver, BC, Canada; [3]Pathology & Laboratory Medicine, University of British Columbia, Vancouver, BC, Canada; [4]Physics and Astronomy, University of British Columbia, Vancouver, BC, Canada

2209. MRS of Basal-Ganglia in Parkinson's Disease Reveals Higher GABA Levels
Shalmali Dharmadhikari[1, 2], Ruoyun Ma[1, 2], Chien- Lin Yeh[1, 2], Sandy Snyder[1], S E. Zauber[3], Ulrike Dydak[1, 2]
[1]School of Health Sciences, Purdue University, W Lafayette, IN, United States; [2]Department of Radiology and Imaging Sciences, Indiana University School of Medicine, Indianapolis, IN, United States; [3]Department of Neurology, Indiana University School of Medicine, Indianapolis, IN, United States

2210. Comparative Study of Anatomical Connectivity of Prelemniscal Radiations in Healthy Subjects and Parkinson´s Disease Patients
Maria Guadalupe García-Gomar[1], Francisco Velasco[2], Luis Concha[1]
[1]Universidad Nacional Autonoma de Mexico, Santiago de Queretaro, Queretaro, Mexico; [2]Hospital General de Mexico, Distrito Federal, Mexico

2211. High Resolution MR Elastography Reveals Retrograde Thalamic Tissue Degradation in Neuromyelitis Optica
Kaspar-Josche Streitberger[1, 2], Andreas Fehlner[1], Friedemann Paul[3, 4], Jens Würfel, [35], Jing Guo[1], Jürgen Braun[6], Ingolf Sack[1]
[1]Department of Radiology, Charité - Universitätsmedizin Berlin, Berlin, Germany; [2]Department of Neurology with experimental Neurology, Charité - Universitätsmedizin Berlin, Berlin, Germany; [3]NeuroCure Clinical Research Center, Charité - Universitätsmedizin Berlin, Berlin, Germany; [4]Clinical and Experimental Multiple Sclerosis Research Center, Department of Neurology, Charité - Universitätsmedizin Berlin, Berlin, Germany; [5]Institute of Neuroradiology, Universitätsmedizin Göttingen, Göttingen, Germany; [6]Institute of Medical Informatics, Charité - Universitätsmedizin Berlin, Berlin, Germany

2212. Maximizing Tissue Contrast for MRI Evaluation of Parkinson's Disease
Silvia Mangia[1], Philip Burton[1], Igor Nestrail[1], Mikko Nissi[1, 2], Alejandra Sierra[3], Karin Shmueli[4], Michael Howell[5], Paul Tuite[5], Shalom Michaeli[1]
[1]CMRR, University of Minnesota, Minneapolis, MN, United States; [2]University of Oulu, Oulu, Finland; [3]A.I.Virtanen Institute for Molecular Sciences, University of Eastern Finland, Kuopio, Finland; [4]University College London, London, United Kingdom; [5]Department of Neurology, University of Minnesota, Minneapolis, MN, United States

2213. Decreased Apparent Fibre Density in the Optic Pathways Correlates with Glaucoma Disease Severity
David Raffelt[1], Farnoosh Sadeghian[1], Heather Connor[2], Alan Connelly[1, 3]
[1]Florey Institute of Neuroscience and Mental Health, Melbourne, VIC, Australia; [2]Department of Optometry, Deakin University, Melbourne, VIC, Australia; [3]The Florey Department of Neuroscience and Mental Health, University of Melbourne, Melbourne, VIC, Australia

2214. Whole-Brain Metabolic Profiling of Patients with Parkinson's Disease Using High-Resolution MR Spectroscopic Imaging
Mohammad Sabati, PhD[1], Sasha Raju, MBBS[2]
[1]Radiology, University of Miami, Miami, FL, United States; [2]Public Health Program, University of Miami, Miami, FL, United States

Traditional Poster
Alzheimer's Disease

Exhibition Hall Wednesday 13:30-15:30

2215. Gadolinium-Enhanced Magnetic Susceptibility Contrast Is Reduced in the Corpus Callosum of a Mouse Model of Tauopathy
James O'Callaghan[1], Holly Holmes[1], Nicholas Powell[1], Ozama Ismail[1], Niall Colgan[1], Jack Wells[1], Bernard Siow[1], Michael O'Neill[2], Emily Collins[3], Karin Shmueli[4], Mark Lythgoe[1]
[1]Centre for Advanced Biomedical Imaging, University College London, London, Greater London, United Kingdom; [2]Eli Lilly & Co. Ltd, Windlesham, Surrey, United Kingdom; [3]Eli Lilly and Company, Indianapolis, United States; [4]Department of Medical Physics and Biomedical Engineering, University College London, London, United Kingdom

ISMRM MERIT AWARD magna cum laude

2216. Longitudinal Whole-Brain Atrophy Measurement in a Mouse Model of Tauopathy Using the Generalised Boundary Shift Integral
Nick M. Powell[1, 2], Da Ma[1, 2], Ferran Prados[1], Marc Modat[1], Jorge Cardoso[1], Holly E. Holmes[2], Ozama Ismail[2], Niall Colgan[2], Michael O'Neill[3], Emily Collins[4], Mark F. Lythgoe[2], Sebastien Ourselin[1]
[1]Centre for Medical Image Computing, University College London, London, England, United Kingdom; [2]Centre for Advanced Biomedical Imaging, University College London, London, United Kingdom; [3]Eli Lilly & Co. Ltd, Windlesham, Surrey, United Kingdom; [4]Eli Lilly and Company, Indianapolis, IN, United States

2217. Quantitative Magnetization Transfer Characteristics of White Matter Tracts Correlates with DTI Indices in Predicting the Conversion from Mild Cognitive Impairment to Alzheimer's Disease

Elena Makovac[1], Barbara Spano'[1], Giovanni Giulietti[1], Laura Serra[1], Carlo Caltagirone[2, 3], Marco Bozzali[1], Mara Cercignani[1, 4]

[1]Neuroimaging laboratory, IRCCS Santa Lucia Foundation, Roma, Italy, Italy; [2]Department of Clinical and Behavioural Neurology, IRCCS Santa Lucia Foundation, Roma, Italy, Italy; [3]Department of Neuroscience, University of Rome 'Tor Vergata', Roma, Italy, Italy; [4]Clinical Imaging Sciences Centre, Brighton and Sussex Medical School, Brighton, Sussex, United Kingdom

2218. Divergent Episodic Memory Networks Among APOE Alleles in Cognitively Normal Elderly

Hao Shu[1, 2], Yongmei Shi[1], Gang Chen[2], Zan Wang[1], Duan Liu[1], Chunxian Yue[1], B.Douglas Ward[2], Wenjun Li[2], Zhan Xu[2], Guangyu Chen[2], Qihao Guo[3], Jun Xu[4], Shi-Jiang Li[2], Zhijun Zhang[1]

[1]Department of Neurology, Affiliated ZhongDa Hospital, Neuropsychiatric Institute and Medical School of Southeast University, Nanjing, Jiangsu, China; [2]Department of Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Department of Neurology, Huashan Hospital, Fudan University, Shanghai, China; [4]Department of Neurology, Northern Jiangsu People's Hospital, Yangzhou, Jiangsu, China

2219. Evaluation of Two Susceptibility-Weighted Sequences for Detection of Cerebral Microbleeds

Cheryl R. McCreary[1, 2], M Louis Lauzon[1, 2], Saima Batool[1, 2], Eric E. Smith[1, 2], Richard Frayne[1, 2]

[1]Radiology and Clinical Neurosciences, Hotchkiss Brain Institute, University of Calgary, Calgary, Alberta, Canada; [2]Seaman Family MR Centre, Foothills Medical Centre, Calgary, Alberta, Canada

2220. Brain Plasticity in Mild Alzheimer's Disease. Effects of a Computer-Based Cognitive Training on Functional Connectivity

Francesco Barban[1], Laura Serra, Roberta Perri[2], Roberta Annicchiarico[2], Giovanni Augusto Carlesimo[2, 3], Matteo Mancini[4], Fulvia Adriano[2], Claudia Ricci[2], Maria Giovanna Lombardi[2], Mara Cercignani[5], Lucia Fadda[2, 3], Carlo Caltagirone[2, 3], Marco Bozzali

[1]Clinical and Behavioral Neurology Laboratory; Neuroimaging Laboratory, IRCCS S Lucia Foundation, Rome, Italy; [2]Clinical and Behavioral Neurology Laboratory, IRCCS S Lucia Foundation, Rome, Italy; [3]Department of Neuroscience, University of Rome "Tor Vergata", Rome, Italy; [4]Department of Engineering, University of Rome "Roma Tre", Rome, Italy; [5]Brighton & Sussex Medical School, Clinical Imaging Sciences Centre, University of Sussex, Brighton, Sussex, United Kingdom

2221. A Multi-Scale MRI Approach to Investigate Novel Drug Treatment Strategies in Mouse Models of Alzheimer's Disease

Holly Elizabeth Holmes[1], Niall Colgan[1], Ozama Ismail[1], Da Ma, [2], Jack Wells[1], Nicholas Powell[1, 2], James O'Callaghan[1], Ian Harrison[1], Manuel Jorge Cardoso[2], Marc Modat, Elizabeth MC Fisher[3], Sebastian Ourselin[2], Michael O'Neill[4], Emily Catherine Collins[5], Mark F. Lythgoe

[1]Centre for Advanced Biomedical Imaging, University College London, London, Greater London, United Kingdom; [2]Centre for Medical Image Computing, University College London, London, Greater London, United Kingdom; [3]Department of Neurodegenerative Diseases, University College London, London, Greater London, United Kingdom; [4]Eli Lilly & Co. Ltd, Windlesham, Surrey, United Kingdom; [5]Eli Lilly & Company, Indianapolis, United States

2222. For Measuring Hippocampal Atrophy Rates the Boundary Shift Integral Algorithm Is Substantially More Accurate Than FreeSurfer, Manual, AdaBoost and FSL/First

Keith S. Cover[1], Ronald A. van Schijndel[1], Adriaan Versteeg[1], Kelvin K. Leung[2], Emma R. Mulder[1], Remko A. de Jong[1], Peter J. Visser[1], Alberto Redolfi[3], Jerome Revillard[4], Baptiste Grenier[4], David Manset[4], Soheil Damangir[5], Hugo Vrenken[1], Bob W. van Dijk[1], Nick C. Fox[2], Giovanni Frisoni[3], Frederik Barkhof[1]

[1]VU University Medical Center, Amsterdam, North Holland, Netherlands; [2]University College London, London, United Kingdom; [3]IRCCS San Giovanni di Dio Fatebenefratelli, Italy; [4]MAAT, Archamps, France; [5]Karolinska Institutet, Sweden

2223. Statistical Phase Noise Elimination for Amyloid Plaque Detection

Tetsuya Yoneda[1], Koji Hashimoto[1], Akihiko Kuniyasu[2], Toshinori Hirai[1], Mika Kitajima[1], Mamoru Hashimoto[1], Nan Kurehana[1], Michiya Iwata[1], Motohira Mio[3], Sosuke Yoshinaga[1], Hiroaki Terasawa[1], Manabu Ikeda[1], Yasuyuki Yamashita[1]

[1]Kumamoto University, Kumamoto, Japan; [2]Sojo University, Kumamoto, Japan; [3]Fukuoka University Chikushi Hospital, Fukuoka, Japan

2224. *Ex-Vivo* Brain MR Morphometric-Pathologic Investigation in a Community Cohort of Older Adults.
Junxiao Yu[1], Aikaterini Kotrotsou[1], Arnold M. Evia[1], Julie A. Schneider[2], Sue E. Leurgans[2], David A. Bennett[2], Konstantinos Arfanakis[1]
[1]Department of Biomedical Engineering, Illinois Institute of Technology, Chicago, IL, United States; [2]Rush Alzheimer's Disease Center, Rush University Medical Center, Chicago, IL, United States

2225. Is the Superficial White Matter Important in Alzheimer's Disease?
Owen R. Phillips[1, 2], Shantanu H. Joshi[3], Fabrizio Piras[4], Maria D. Orfei[4], Mariangela Iorio[4], Katherine L. Narr[3], David W. Shattuck[3], Carlo Caltagirone[1, 2], Gianfranco Spalletta[4], Margherita Di Paola[1, 5]
[1]Clinical and Behavioural Neurology, IRCCS Santa Lucia Foundation, roma, Lazio, Italy; [2]Neuroscience, University of Rome "Tor Vergata",, Rome, Roma, Italy; [3]Neurology, Ahmanson Lovelace Brain Mapping Center, Los Angeles, CA, United States; [4]Neuropsychiatry Laboratory, Clinical and Behavioural Neurology, IRCCS Santa Lucia Foundation, Rome, Roma, Italy; [5]Human Studies , LUMSA University, Rome, Italy

2226. Nano-Antioxidants Improve Axonal Transport Deficits in a Mouse Model of Alzheimer's Disease
Kelly Ann Moore[1], Errol Loïc Samuel[2], James Tour[2], Robia G. Pautler[1]
[1]Molecular Physiology and Biophysics, Baylor College of Medicine, Houston, TX, United States; [2]Department of Chemistry, Rice University, Houston, TX, United States

2227. Comparison of Relaxation, Magnetization Transfer, and Diffusion Tensor Measurements in the Hippocampal Formation Between APP, PS1, and Control Mice
Sheryl L. Herrera[1], Heather Whittaker[2], Shenghua Zhu[3], Vanessa L. Palmer[4], Richard Buist[5], Xin-Min Li[6], Jonathan D. Thiessen[7, 8], Melanie Martin[9, 10]
[1]Physics & Astronomy, University of Mantioba, Winnipeg, Manitoba, Canada; [2]Biopsychology program, University of Winnipeg, Winnipeg, Manitoba, Canada; [3]Pharmacology & Therapeutics, University of Mantioba, Winnipeg, Manitoba, Canada; [4]Biomedical Engineering, University of Mantioba, Winnipeg, Manitoba, Canada; [5]Radiology, University of Mantioba, Winnipeg, Manitoba, Canada; [6]Psychiatry, University of Alberta, Edmonton, Alberta, Canada; [7]Imaging Program, Lawson Health Research Institute, London, Ontario, Canada; [8]Medical Biophysics, Western University, London, Ontario, Canada; [9]Physics, University of Winnipeg, Winnipeg, Manitoba, Canada; [10]Biomedical Engineering, Physics &Astronomy, Pharmacology &Therapeutics, Radiology, University of Mantioba, Winnipeg, Manitoba, Canada

2228. Improved Correlation of Iron to R2 and R2* in Alzheimer's Disease-Affected White Matter
Christos Michaelides[1], David J. Lythgoe[1], Harold G. Parkes[2], Claire Troakes[3], Istvan Bodi[4], Tina Geraki[5], Amy H. Herlihy[6], Po-Wah So[1]
[1]IOPPN, King's College London, London, United Kingdom; [2]CR-UK Clinical MR Research Group, Institute of Cancer Research, Sutton, London, United Kingdom; [3]MRC London Neurodegenerative Diseases Brain Bank, Department of Clinical Neuroscience, IOPPN, King's College London, London, United Kingdom; [4]Clinical Neuropathology & London Neurodegenerative Diseases Brain Bank, King's College London, London, United Kingdom; [5]Diamond Light Source, Harwell Science and Innovation Campus, Didcot, Oxfordshire, United Kingdom; [6]Agilent Technologies, Yarnton, Oxfordshire, United Kingdom

2229. Inter and Intra Network Connectivity Predicts the Evolution of MCI Over Time and the Conversion from MCI to AD
Elena Makovac[1], Laura Serra[1], Chiara Mastropasqua[1], Mario Torso[1], Barbara Spano'[1], Giovanni Giulietti[1], Carlo Caltagirone[2, 3], Mara Cercignani[1, 4], Marco Bozzali[1]
[1]Neuroimaging laboratory, IRCCS Santa Lucia Foundation, Rome, Italy, Italy; [2]Department of Clinical and Behavioural Neurology, IRCCS Santa Lucia Foundation, Roma, Italy, Italy; [3]Department of Neuroscience, University of Rome 'Tor Vergata', Rome, Italy, Italy; [4]Clinical Imaging Sciences Centre, Brighton and Sussex Medical School, Brighton, Sussex, United Kingdom

2230. The Background Brain Network Plays a Compensatory Role in Patients with Amnestic Mild Cognitive Impairment
Wutao Lou[1], Lin Shi[2], Defeng Wang[1], Winnie CW Chu[1], Vincent CT Mok[2], Sheung-Tak Cheng[3, 4], Linda CW Lam[5]
[1]Department of Imaging and Interventional Radiology, The Chinese University of Hong Kong, Shatin, NT, Hong Kong; [2]Department of Medicine and Therapeutics, The Chinese University of Hong Kong, Shatin, NT, Hong Kong; [3]Department of Psychological

Studies, Hong Kong Institute of Education, Shatin, Hong Kong; [4]Center for Psychosocial Health and Aging, Hong Kong Institute of Education, Shatin, Hong Kong; [5]Department of Psychiatry, The Chinese University of Hong Kong, Shatin, NT, Hong Kong

2231. Simultaneous ASL/FDG-PET Imaging of Frontotemporal Dementia

Jing Zhang[1, 2], Elizabeth Finger[1, 2], Udunna Anazodo, [23], Julia MacKinley[2], John Butler[2], Frank Prato, [23], Keith St Lawrence, [23]
[1]Department of Clinical Neurological Sciences, University of Western Ontario, London, Ontario, Canada; [2]Lawson Health Research Institute, London, Ontario, Canada; [3]Department of Medical Biophysics, University of Western Ontario, London, Ontario, Canada

2232. Whole-Brain Correlation Between Microstructural Alterations and Cognitive Performance of Alzheimer Disease Studied by Diffusion Kurtosis Imaging

Hongyan Ni[1], Lixiang Yuan[2], Yuanyuan Chen[3], Man Sun[2], Jianzhong Yin[1], Xu Yan[4]
[1]Tianjin First Central Hospital, Tianjin, China; [2]First Central Clinical College, Tianjin Medical University, Tianjin, China; [3]Tianjin University, Tianjin, China; [4]MR Collaboration NE Asia, Siemens Healthcare, Shanghai, China

2233. Effect of Antiepileptic Treatment on Hippocampal Activity in Alzheimer's Disease Measured by ASL

Weiying Dai[1], David C. Alsop[1], Daniel Z. Press[2]
[1]Radiology, Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA, United States; [2]Neurology, Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA, United States

2234. Tensor-Based Morphometry Reveals Structural Differences Between Down Syndrome and Alzheimer's Disease Mouse Model Brains

Nick M. Powell[1, 2], Holly E. Holmes[2], Da Ma[1, 2], Marc Modat[1], Jorge Cardoso[1], Frances K. Wiseman[3], Victor LJ Tybulewicz[4], Elizabeth MC Fisher[3], Mark F. Lythgoe[2], Sebastien Ourselin[1]
[1]Centre for Medical Image Computing, University College London, London, England, United Kingdom; [2]Centre for Advanced Biomedical Imaging, University College London, London, United Kingdom; [3]Department of Neurodegenerative Disease, Institute of Neurology, University College London, London, United Kingdom; [4]MRC National Institute for Medical Research, London, United Kingdom

Traditional Poster
Brain Tumour Spectroscopy

Exhibition Hall Wednesday 13:30-15:30

2235. Intracellular PH Measured by ^{31}P MR-Spectroscopy Predicts Site of Progression in Recurrent Glioblastoma Under Antiangiogenic Therapy with Bevacizumab.

Katharina Johanna Wenger[1], Oliver Bähr[1], Elke Hattingen[2], Ulrich Pilatus[2]
[1]Neurooncology, Goethe-University Frankfurt, Frankfurt, Hessen, Germany; [2]Neuroradiology, Goethe-University Frankfurt, Frankfurt, Hessen, Germany

2236. The Improved Detection of 2-Hydroxyglutarate in Gliomas at 7 T Using High-Bandwidth Adiabatic Refocusing Pulses

Uzay E. Emir[1], Sarah Larkin[2], Nick de Pennington[2], Natalie Voets[1], Puneet Plaha[3], Richard Stacey[3], James Mccullagh[4], Stuart Clare[1], Peter Jezzard[1], Christopher Schofield[4], Olaf Ansorge[2], Tom Cadoux-Hudson[3]
[1]FMRIB Centre, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, Oxfordshire, United Kingdom; [3]Department of Neurosurgery, John Radcliffe Hospital, Oxford University Hospitals NHS Trust, Oxford, Oxfordshire, United Kingdom; [4]Department of Chemistry, University of Oxford, Oxford, Oxfordshire, United Kingdom

2237. Characterizing Regional Heterogeneity of Glioblastoma: Regions Representing Metabolic Aggression in Enhancing and Non-Enhancing Components

Natalie Rosella Boonzaier[1, 2], Timothy J. Larkin, [23], Sarah Leir[3], Laila A. Mohsen[4], Adam Young[3], Victoria C. Lupson[2], Stephen J. Price, [23]
[1]Department of Clinical Neurosciences, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom; [2]Wolfson Brain Imaging Centre, Addenbrooke's Hospital, Cambridge, Cambridgeshire, United Kingdom; [3]Division of Neurosurgery, University of

Cambridge, Cambridge, Cambridgeshire, United Kingdom; [4]Department of Radiology, University of Cambridge, Cambridge, United Kingdom

2238. Longitudinal MRS Imaging of 2-Hydroxyglutarate in Brain Tumors *In Vivo*

Sandeep Ganji[1], Zhongxu An[1], Dianne Mendelsohn[1], Marco Pinho[1], Edward Pan[1], Kevin Choe[1], Elizabeth Maher[1], Changho Choi[1]
[1]University of Texas Southwestern Medical Center, Dallas, TX, United States

2239. Volumetric MRSI as a Tool to Guide and Monitor Radiotherapy Treatment in Patients with Glioma

Anouk Marsman[1], Sulaiman Sheriff[2], Doris D. Lin[1], Andrew A. Maudsley[2], Lawrence Kleinberg[3], Peter B. Barker[1]
[1]Russell H. Morgan Department of Radiology and Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Department of Radiology, University of Miami Miller School of Medicine, Miami, FL, United States; [3]Department of Radiation Oncology & Molecular Radiation Sciences, Johns Hopkins University School of Medicine, Baltimore, MD, United States

2240. Pilocytic Astrocytoma: NAA Is Not NAA

Benita Tamrazi[1], Ashok Panigrahy[2], Stefan Bluml[1, 3]
[1]Children's Hospital Los Angeles/USC, Los Angeles, CA, United States; [2]Children's Hospital of Pittsburgh, Pittsburgh, PA, United States; [3]Rudi Schulte Research Institute, Santa Barbara, CA, United States

2241. Molecular Subgroups of Medulloblastoma Identification by MR Spectroscopy

Stefan Bluml[1, 2], Ashley Margol[3, 4], Ashok Panigrahy[5], Richard Sposto[3, 6], Rebekah Kennedy[3], Marvin D. Nelson[1], Shahab Asgharzadeh[3, 4]
[1]Children's Hospital Los Angeles/USC, Los Angeles, CA, United States; [2]Rudi Schulte Research Institute, Santa Barbara, CA, United States; [3]Children's Hospital Los Angeles and Saban Research Institute, Los Angeles, CA, United States; [4]Department of Pediatrics, Keck School of Medicine, University of Southern California, CA, United States; [5]Children's Hospital of Pittsburgh, Pittsburgh, PA, United States; [6]Department of Preventive Medicine, Keck School of Medicine, University of Southern California, CA, United States

2242. Early Tumor Response to Radiochemotherapy Using 1D PRESS and 2D Correlated Spectroscopy

Xi Long[1, 2], Daniel Ramirez-Gordillo[1], Huijun Liao[1], Ben Rowland[1], Jong-Woo Lee[3], Nils Arvold[4], Patrick Wen[4], Srinivasan Mukundan[1], Raymond Huang[1], Alexander P. Lin[1]
[1]Center for Clinical Spectroscopy, Brigham and Women's Hospital, Boston, MA, United States; [2]Radiology Department, Union Hospital, Tongji Medical School, Huazhong University of Science and Technology , Wuhan, Hubei, China; [3]Department of Neurology, Brigham and Women's Hospital, Boston, MA, United States; [4]Division of Neuro-Oncology, Brigham and Women's Hospital, Boston, MA, United States

2243. MRS Changes in Diffuse Intrinsic Pontine Gliomas Correlate with Survival

Stefan Bluml[1, 2], Ashok Panigrahy[3]
[1]Children's Hospital Los Angeles/USC, Los Angeles, CA, United States; [2]Rudi Schulte Research Institute, Santa Barbara, CA, United States; [3]Children's Hospital of Pittsburgh/UPMC, Pittsburgh, PA, United States

2244. Glycine Is a Potential Biomarker for Malignant Transformation in Brain Tumors

Changho Choi[1], Sandeep Ganji[1], Zhongxu An[1], Dianne Mendelsohn[1], Marco Pinho[1], Edward Pan[1], Kevin Choe[1], Elizabeth Maher[1]
[1]University of Texas Southwestern Medical Center, Dallas, TX, United States

2245. Evaluating Brain Metabolites in Patients with Glioma Using Short and Long TE MRSI at 3T and 7T

Yan Li[1], Marisa Lafontaine[1], Susan Chang[2], Sarah J. Nelson[1, 3]
[1]Department of Radiology and Biomedical Imaging, University of California, San Francisco, CA, United States; [2]Deparmenf of Neurological Surgery, University of California, San Francisco, CA, United States; [3]Department of Bioengineering and Therapeutic Sciences, University of California, San Francisco, CA, United States

2246. Molecular MRI Differentiation Between Primary Central Nervous System Lymphoma (PCNSL) and High-Grade Glioma (HGG) Using Endogenous Protein-Based Amide Proton Transfer (APT) Signals
Shanshan Jiang[1, 2], Hao Yu[1], Xianlong Wang[1], Shilong Lu[1], Yi Zhang[2], Doon-Hoon Lee[2], Hye-Young Heo[2], Jinyuan Zhou[2], Zhibo Wen[1]
[1]Department of Radiology, Zhujiang Hospital of Southern Medical University, Guangzhou, Guangdong, China; [2]Department of Radiology, Johns Hopkins University School of Medicine, Baltimore, MD, United States

Traditional Poster
Brain Tumour Multiparametic Assessment
Exhibition Hall Wednesday 13:30-15:30

2247. Dual-Modality Evaluation of Tumour Vasculature, Morphology and Metabolism Via Dynamic Susceptibility Contrast MRI and FluoroEthyl Choline-PET Using Simultaneous PET/MR
Maria Liljeroth[1], Kjell Erlandsson[1], Francesco Fraioli[1], David Thomas[2], Enrico De Vita[3], Brian Hutton[1], Anna Barnes[4], Simon Arridge[5], Sebastien Ourselin[6], David Atkinson[7]
[1]Institute of Nuclear Medicine, Metabolism & Experimental Therapeutics, London, United Kingdom; [2]Institute of Neurology, Faculty of Brain Sciences, Brain Repair & Rehabilitation, London, United Kingdom; [3]National Hospital for Neurology and Neurosurgery, Lysholm Department of Neuroradiology, London, United Kingdom; [4]Institute of Nuclear Medicine, Clinical Physics, London, United Kingdom; [5]Faculty of Engineering Science, Dept of Computer Science, London, United Kingdom; [6]Dept of Med Phys & Biomedical Eng, London, United Kingdom; [7]Faculty of Medical Sciences, Div of Medicine, London, United Kingdom

ISMRM MERIT AWARD magna cum laude

2248. Prediction of Progression Free Survival at 6 Months in High Grade Gliomas Using Pre-Chemoradiotherapy MRI
Lawrence Kenning[1], Martin Lowry[1], Martin Pickles[1], Chris Rowland-Hill[2], Shailendra Achawal[2], Chittoor Rajaraman[2], Lindsay Turnbull[1]
[1]Centre for MR Investigations, Hull York Medical School at University of Hull, Hull, United Kingdom; [2]Hull and East Yorkshire Hospitals NHS Trust, United Kingdom

2249. Validation of the RANO Criteria for Quantifying Therapeutic Response of Human Brain Tumors Using Computer Assisted Medical Diagnosis (CAMD) Technology
Simon Salinas[1], Steve Lau[2], Kate Drummond[3], Christen Barras[2], Pramit Phal[1, 2], Patricia Desmond[1, 2], Bradford Moffat[1]
[1]The University of Melbourne, Melbourne, Victoria, Australia; [2]Radiology, Royal Melbourne Hospital, Melbourne, Victoria, Australia; [3]Neurosurgery, The University of Melbourne, Melbourne, Victoria, Australia

2250. Novel Method for Automatic Segmentation of Infiltrative Glioblastoma
Kelvin Wong[1, 2], Stephen Wong[1, 2]
[1]Department of Systems Medicine and Bioengineering, Houston Methodist Research Institute, Houston, TX, United States; [2]Department of Radiology, Weill Cornell Medical College, New York, NY, United States

2251. Characterising the Transition Zone from Tumor to Normal Brain in Glioblastomas Using Multimodal MRI
Sarah A. Leir[1], Timothy J. Larkin[1, 2], Natalie R. Boonzaier, [23], Victoria Lupson[4], Laila A. Mohsen[5], Adam Young[6], Stephen J. Price[3, 6]
[1]Division of Neurosurgery, Addenbrooke's Hospital , Cambridge, Cambridgeshire, United Kingdom; [2]Wolfson Brain Imaging Centre, Addenbrooke's Hospital , Cambridge, Cambridgeshire, United Kingdom; [3]Department of Clinical Neurosciences, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom; [4]Wolfson Brain Imaging Centre, Addenbrooke's Hospital, Cambridge, Cambridgeshire, United Kingdom; [5]University Department of Radiology, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom; [6]Division of Neurosurgery, Addenbrooke's Hospital, Cambridge, Cambridgeshire, United Kingdom

2252. Metabolic Activity of the Invasive Microenvironment of Glioblastomas Determines Time to Progression: A Multimodal MR Study
Stephen J. Price[1, 2], Adam MH Young[1], William J. Scotton[1], Natalie R. Boonzaier[1], Victoria C. Lupson[2], Mary A. McLean[3], Timothy J. Larkin[1, 2]

[1]Academic Neurosurgery Division, Dept. Clinical Neurosciences, University of Cambridge, Cambridge, United Kingdom; [2]Wolfson Brain Imaging Centre, University of Cambridge, Cambridge, United Kingdom; [3]Cancer Research UK Cambridge Institute, University of Cambridge, Cambridge, United Kingdom

2253. Tumour Relapse Prediction Using Multi-Parametric MR Data Recorded During Follow-Up of GBM Patients
Adrian Ion-Margineanu[1, 2], Sofie Van Cauter[3], Diana M. Sima[1, 2], Frederik Maes, [24], Stefaan W. Van Gool[5], Stefaan Sunaert[3], Uwe Himmelreich[6], Sabine Van Huffel[1, 2]
[1]STADIUS, KU Leuven - ESAT, Leuven, Belgium, Belgium; [2]iMinds Medical IT, Leuven, Belgium; [3]Department of Radiology, University Hospitals of Leuven, Leuven, Belgium; [4]PSI, KU Leuven - ESAT, Belgium; [5]Department of Pedriatic Neuro-oncology, University Hospitals of Leuven, Belgium; [6]Department of Imaging and Pathology - Biomedical MRI/ MoSAIC, KU Leuven, Belgium

2254. Quantitative Brain Tumor Mapping Using Magnetic Resonance Fingerprinting
Chaitra Badve[1], Matthew Rogers[2], Alice Yu[2], Dan Ma[3], Shivani Pahwa[4], Andrew Sloan[5], Jeffrey Sunshine[1, 4], Vikas Gulani[1, 4], Mark Griswold[3, 4]
[1]Radiology, University Hospitals, Cleveland, OH, United States; [2]School of Medicine, Case Western Reserve University, Cleveland, OH, United States; [3]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [4]Radiology, Case Western Reserve University, Cleveland, OH, United States; [5]Neurosurgery, University Hospitals, Cleveland, OH, United States

2255. MR-PET Based Diagnosis of Gliomas – a Prospective Comparison of 3D MRSI and ^{18}FET PET
Jörg Mauler[1], Karl-Josef Langen[1], Andrew A. Maudsley[2], Omid Nikoubashman[3], Christian Filss[1], Gabriele Stoffels[1], N. Jon Shah[1]
[1]Institute of Neuroscience and Medicine, Forschungszentrum Jülich, Jülich, Germany; [2]Miller School of Medicine, University of Miami, FL, United States; [3]Department of Neuroradiology, RWTH Aachen University, Germany

2256. Tumor Classification and Prediction Using Robust Multivariate Clustering of Multiparametric MRI
Alexis Arnaud[1, 2], Florence Forbes[1, 2], Nicolas Coquery[3, 4], Emmanuel L. Barbier[3, 4], Benjamin Lemasson[3, 4]
[1]INRIA, Grenoble, -, France; [2]LJK, University Grenoble Alpes, Grenoble, -, France; [3]U836, INSERM, Grenoble, -, France; [4]GIN, University Grenoble Alpes, Grenoble, -, France

2257. Advanced MR Image Biomarkers and Updated Genomic Biomarkers for Brain Gliomas: Technical Point and Clinical Application
Kyung Mi Lee[1], Eui Jong Kim[1], Ji Hye Jang[1], Woo Suk Choi[1]
[1]Kyung Hee University Hospital, Seoul, Korea

Traditional Poster
Brain Tumour Diffusion

Exhibition Hall Wednesday 13:30-15:30

2258. Characterising Patterns of Tumour Invasion in Glioblastoma
Timothy J. Larkin[1], Natalie R. Boonzaier[1], Laila A. Mohsen[2], Stephen J. Price[1]
[1]Division of Neurosurgery, University of Cambridge, Cambridge, United Kingdom; [2]Department of Radiology, University of Cambridge, United Kingdom

2259. Differentiating Tumor Progression from Pseudo-Progression in Patients with Glioblastomas Using DTI and DSC-MRI
Sumei Wang[1], Maria Martinez-Lage[2], Yu Sakai[1], Sanjeev Chawla[3], Sungheon G. Kim[3], Michelle Alonso-Basanta[4], Robert A. Lustig[4], Steven Brem[5], Suyash Mohan[1], Ronald L. Wolf[1], Arati Desai[6], Harish Poptani[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Pathology and Laboratory Medicine, University of Pennsylvania, Philadelphia, PA, United States; [3]Radiology, New York University School of Medicine, New York, NY, United States; [4]Radiation Oncology, University of Pennsylvania, Philadelphia, PA, United States; [5]Neurosurgery, University of Pennsylvania, Philadelphia, PA, United States; [6]Hematology-Oncology, University of Pennsylvania, Philadelphia, PA, United States

2260. IVIM-MRI Reproducibility for Functional Parametric Mapping of Treatment Response in High-Grade Glioma
Jack T. Skinner[1, 2], Paul L. Moots[3], Adrienne N. Dula[1, 2], C Chad Quarles[1, 2]
[1]Radiology and Radiological Sciences, Vanderbilt University Medical Center, Nashville, TN, United States; [2]Institute of Imaging Science, Vanderbilt University Medical Center, Nashville, TN, United States; [3]Neurology, Vanderbilt University Medical Center, Nashville, TN, United States

2261. Differentiation of High-Grade Astrocytomas from Solitary Brain Metastases: Comparing Diffusion Kurtosis Imaging and Diffusion Tensor Imaging
Yan Tan[1], Hui Zhang[2], Xiao-chun Wang[2], Jiang-bo Qin[2], Xiao-feng Wu[2], Lei Zhang[2], Le Wang[2]
[1]Department of Radiology, First Clinical Medical College, Shanxi Medical University, Taiyuan, Shanxi, China; [2]Department of Radiology, First Clinical Medical College, Shanxi Medical University, Taiyuan 030001,, Shanxi, China

2262. Computer Aided Radiological Diagnostics: Random Forest Classification of Glioma Tumor Progression Using Image Texture Parameters Derived from ADC-Maps.
Johannes Slotboom[1], Nuno Pedrosa de Barros[1], Stefan Bauer[2], Urspeter Knecht[1], Nicole Porz[3], Philippe Schucht[3], Pica Pica[4], Andreas Raabe[3], Roland Wiest[5], Beate Sick[6]
[1]DRNN, Institute of Diagnostic and Interventional Neuroradiology, University Hospital Bern, Bern, Switzerland; [2]Institute of Surgical Technology and Biomechanics, University Bern, Bern, Switzerland; [3]DKNS-Neurosurgery, University Hospital Bern, Bern, Switzerland; [4]DOLS-Radiooncology, University Hospital Bern, Bern, Switzerland; [5]1DRNN, Institute of Diagnostic and Interventional Neuroradiology, University Hospital Bern, Bern, Switzerland; [6]Division of Biostatistics, ISPM, University Zürich, Zürich, Switzerland

2263. Comparison of Introvoxel Incoherent Motion Diffusion-Weighted MR Imaging and Arterial Spin Labeling MR Imaging in Gliomas
Yuankai Lin[1], Jianrui yuan Li[2], Zhiqiang Zhang[3], Qiang Xu[2], Zongjun Zhang[3]
[1]Department of Medical Imaging,, Jinling Hospital, Medical School of Nanjing University, Nanjing, Jiangsu, China; [2]Department of Medical Imaging, Jinling Hospital, Medical School of Nanjing University,, Nanjing, Jiangsu, China; [3]Department of Medical Imaging,, Jinling Hospital, Medical School of Nanjing University,, Nanjing, Jiangsu, China

2264. Diffusion Tensor Imaging and Pathologic Correlates of Meningiomas
Sumei Wang[1], Sungheon G. Kim[2], Maria Martinez-Lage[3], Edward B. Lee[3], Laurie A. Loevner[1], Harish Poptani[1], John YK Lee[4], Suyash Mohan[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Radiology, New York University School of Medicine, New York, NY, United States; [3]Pathology and Laboratory Medicine, University of Pennsylvania, Philadelphia, PA, United States; [4]Neurosurgery, University of Pennsylvania, Philadelphia, PA, United States

2265. Neurite Density and Diffusion Kurtosis Characterization of Brain Tumors with Accelerated DSI
Ek T. Tan[1], Robert J. Young[2], Xiaofeng Liu[1], Marcel Prastawa[1], Kyung K. Peck[2, 3], Jennifer B. Rubel[2], Jonathan I. Sperl[4], Luca Marinelli[1]
[1]GE Global Research, Niskayuna, NY, United States; [2]Radiology, MSKCC, New York, NY, United States; [3]Medical Physics, MSKCC, New York, NY, United States; [4]GE Global Research, Garching, Munich, Germany

2266. Cranio-Spinal Radiation Produces Long Term Compromise of White Matter Tracts in Childhood Brain Tumour Survivors.
Logan Richard[1, 2], Eric Bouffet[1, 2], Suzanne Laughlin[1], Normand Laperriere[3], Kamila Szulc[1], Douglas Strother[4], Juliette Hukin[5], Christopher Fryer[5], Dina McConnell[5], Fang Liu[1], Jovanka Skocic[1], Alexandra Mogadam[1], Donald Mabbott[1, 2]
[1]The Hospital for Sick Children, Toronto, Ontario, Canada; [2]University of Toronto, Toronto, Ontario, Canada; [3]Princess Margaret Hospital, Toronto, Ontario, Canada; [4]University of Calgary, Calgary, Alberta, Canada; [5]British Columbia Children's Hospital, Vancouver, British Columbia, Canada

2267. An Analysis of Variability in Diffusion Tractography of Language Fascicles
Kesshi Marin Jordan[1], Eduardo Caverzasi[2, 3], Valentina Panara[1, 4], Bagrat Amirbekian[1], Anisha Keshavan[1], Nico Papinutto[2, 5], Mitchel Berger[6], Roland Henry[2]

[1]Bioengineering, University of California San Francisco & Berkeley, San Francisco, CA, United States; [2]Neurology, University of California San Francisco, San Francisco, CA, United States; [3]University of Toronto, Toronto, Canada; [4]Institute of Advanced Biomedical Technologies, University "G. D'Annunzio", Chieti, Italy; [5]Bioengineering, University of California San Francisco & Berkeley, CA, United States; [6]Neurosurgery, University of California San Francisco, San Francisco, United States

Traditional Poster
Brain Tumour Perfusion & DCE

Exhibition Hall Wednesday 13:30-15:30

2268. in a Rat Model of Cerebral Tumor, Exudate Flux Is Controlled by Peritumoral Compression
James R. Ewing[1], Stephen L. Brown[2], Madhava P. Aryal[1], Kelly Ann Keenan[3], Rasha M. Elmghirbi[4], Swayamprav Panda[1], Hassan Bagher-Ebadian[1], Tavarekere N. Nagaraja[3]
[1]Neurology, Henry Ford Health System, Detroit, MI, United States; [2]Radiation Oncology, Henry Ford Health System, Detroit, MI, United States; [3]Anesthesiology, Henry Ford Health System, Detroit, MI, United States; [4]Physics, Oakland University, Rochester, MI, United States

2269. Study of Contrast-Enhanced T1-W MRI Markers of Cerebral Radiation Necrosis Manifested in Head-And-Neck Cancers, Primary, and Metastatic Brain Tumors: Preliminary Findings
Prateek Prasanna[1], Pallavi Tiwari[1], Archana Siddalingappa[2], Leo Wolansky[2], Lisa Rogers[2], Tai-Chung Lam[3], Victoria To[4], Anant Madabhushi[1]
[1]Case Western Reserve University, Cleveland, OH, United States; [2]University Hospitals, Cleveland, OH, United States; [3]Tuen Mun Hospital,, Hong Kong, China; [4]Tuen Mun Hospital, Hong Kong, China

2270. DCE-MRI Reveals Increased Peritumoral Fluid Flow in Brain Metastases After SRS
Tord Hompland[1], Catherine Coolens[1], Brandon Driscoll[1], Warren Foltz[1], Cynthia Menard[1], David A. Jaffray[1, 2], Caroline Chung[1]
[1]Princess Margaret Cancer Centre, Toronto, Ontario, Canada; [2]TECHNA Institute/University Health Network, ontario, Canada

2271. Glioma Grading Using Standardized RCBV Depends on Tumor Type
Mona M. Al-Gizawiy[1], Melissa A. Prah[1], Wade M. Mueller[2], Kathleen M. Schmainda[1, 3]
[1]Radiology, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Neurosurgery, Medical College of Wisconsin, WI, United States; [3]Biophysics, Medical College of Wisconsin, WI, United States

2272. Design of a 3D-Phantom to Evaluate Optimized Imaging Parameters for Time-Of-Flight Angiography in Mouse Glioblastoma Models
Carly Warren[1], Michael Bock[1], Jochen Leupold[1], Wilfried Reichardt, [12]
[1]Department of Radiology Medical Physics, Universitiy Medical Center Freiburg, Freiburg, Germany; [2]German Cancer Consortium (DKTK), German Cancer Center (DKFZ), Heidelberg, Germany

2273. Minimum Sample Size Requirements for RCBV Measures in Patient Glioblastoma Trials
Melissa A. Prah[1], Steven M. Stufflebeam[2], Eric S. Paulson[1, 3], Jayashree Kalpathy-Cramer[2], Elizabeth R. Gerstner[4], Tracy T. Batchelor[4], Daniel P. Barboriak[5], Bruce Rosen[2], Kathleen M. Schmainda[1, 6]
[1]Radiology, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Radiology, Massachusetts General Hospital, Charlestown, MA, United States; [3]Radiation Oncology, Medical College of Wisconsin, Milwaukee, WI, United States; [4]Neurology, Massachusetts General Hospital, Boston, MA, United States; [5]Radiology, Duke University Medical Center, Durham, NC, United States; [6]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States

2274. Pretreatment Dynamic Contrast-Enhanced MR Imaging in Glioblastoma : Correlation Study with Genetic Profiles
Yoon Seong Choi[1], Tyler Hyungtaek Rim[2], Mina Park[1], Ho-Joon Lee[1], Sung Soo Ahn[1], Jinna Kim[1], Seung-Koo Lee[1]
[1]department of radiology, Yonsei university college of medicine, Seoul, Korea; [2]department of ophthalmology, Yonsei university college of medicine, Seoul, Korea

2275. Understanding the Mechanism of Contrast Enhancement in Brain Tumors and Infections Through Dynamic Contrast Enhanced MRI
Mudit Gupta[1], Prativa Sahoo[2], Ritu Tyagi[1], Rana Patir[3], Sandeep Vaishya[4], Neeraj Prakash[4], Indrajit Saha[2], Rakesh Kumar Gupta[1]
[1]Radiology, Fortis Institute, Gurgaon, Haryana, India; [2]Philips Healthcare, Gurgaon, India; [3]Neurosurgery, Fortis Institute, Gurgaon, India; [4]Pathology, Fortis Institute, Gurgaon, India

2276. Discrepancy Between Arterial Spin Labeling Images and Contrast-Enhanced Images of Brain Tumors
Takashi Abe[1], Saho Irahara, Yoichi Otomi, Yuuki Obama, Moriaki Yamanaka, Seiji Iwamoto, Sonoka Hisaoka, Mungunkhuyag Majigsuren, Delgerdalai Khashbat, Mungunbagana Ganbold, Masafumi Harada
[1]Institute of Health Biosciences The Tokushima University Graduate School, Tokushima, Japan

2277. The Complementary Value of Arterial Spin Labeling Next to Contrast-Enhanced MRI in the Diagnosis of Brain Tumor Invasion in Mouse Models
Houshang Amiri[1, 2], Anna C. Navis[3], Tom Peeters[1], William P. Leenders[3], Arend Heerschap[1]
[1]Department of Radiology, Radboud University Medical Center, Nijmegen, Gelderland, Netherlands; [2]Department of Cognitive Neuroscience, Radboud University Medical Center, Nijmegen, Gelderland, Netherlands; [3]Department of Pathology, Radboud University Medical Center, Nijmegen, Gelderland, Netherlands

2278. Diagnostic Performance of Dynamic Susceptibility Contrast Perfusion in Glioma Grading: Comparison of Cerebral Blood Volume Among Different Analysis Software
Kohsuke Kudo[1], Ikuko Uwano[2], Toshinori Hirai[3], Hideo Nakamura[4], Noriyuki Fujima[1], Fumio Yamashita[2], Jonathan Goodwin[2], Satomi Higuchi[2], Makoto Sasaki[2]
[1]Diagnostic and Interventional Radiology, Hokkaido University Hospital, Sapporo, Hokkaido, Japan; [2]Ultra-High Field MRI, Iwate Medical University, Morioka, Japan; [3]Radiology, Kumamoto University, Kumamoto, Japan; [4]Neurosurgery, Kumamoto University, Kumamoto, Japan

Traditional Poster
Brain Tumours & fMRI

Exhibition Hall Wednesday 13:30-15:30

2279. Dynamic Functional Connectivity of Motor Network in Patients with Brain Tumor
Chen Niu[1], Pan Lin[2], Ming Zhang[1], XiaoLong Peng[3], MaoDe Wang[1], Wei Wang[1], Wenfei Li[1], Xin Liu[2], Rana Netra[1]
[1]The First Affiliated Hospital of Medical College, Xi'an Jiaotong university, Xi'an, Shaanxi, China; [2]Institute of Biomedical Engineering, Xi'an Jiaotong University, Xi'an, Shaanxi, China; [3]Institute of Biomedical Engineering, Xi'an Jiaotong University, Xi'an, Shaanxi, China

2280. Atlas Based Seed Analysis of Resting State fMRI for Pre-Surgical Brain Mapping
Madalina E. Tivarus[1, 2], Alexander Teghipco[2], Daniel Cole[3], Michael Utz[1], Ali Hussain[1]
[1]Department of Imaging Sciences, University of Rochester, Rochester, NY, United States; [2]Rochester Center for Brain Imaging, University of Rochester, Rochester, NY, United States; [3]Department of Psychology, Emory University, GA, United States

2281. Resting State Functional Connectivity of the Hippocampus in Patients Receiving Radiation Therapy for Extra-Axial Tumors
Marc C. Mabray[1], Igor J. Barani[2], Suresh E. Joel[3], Rakesh Mullick[3], Soonmee Cha[1]
[1]Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [2]Radiation Oncology, University of California San Francisco, San Francisco, CA, United States; [3]General Electric Global Research, Bangalore, Karnataka, India

2282. Functional Connectivity Changes in the Presence of Brain Tumors
Noora Pauliina Tuovinen[1], Francesco de Pasquale[1], Umberto Sabatini[1]
[1]Radiology, Santa Lucia Foundation, Rome, Lazio, Italy

Traditional Poster
Novel Brain & Eye
Exhibition Hall Wednesday 13:30-15:30

2283. Optimization of Sample Preparation for MRI of Formaldehyde-Fixed Brains
Yann Leprince[1, 2], Benoît Schmitt[1], Élodie Chaillou[3], Christophe Destrieux[4], Laurent Barantin[4], Alexandre Vignaud[1], Denis Rivière[1], Cyril Poupon[1]
[1]NeuroSpin, CEA, Saclay, France; [2]Université Paris-Sud, Orsay, France; [3]INRA, Tours, France; [4]Université François-Rabelais, Tours, France

2284. Morphological and Microstructural Changes in the Eye and the Brain in an Experimental Glaucoma Model Induced by Crosslinking Hydrogel Injection
Leon C. Ho[1, 2], Ian P. Conner[3, 4], Xiao-Ling Yang[1, 3], Yolandi van der Merwe, [14], Yu Yu[5], Christopher K. Leung[6, 7], Ian A. Sigal[3, 4], Ed X. Wu[2], Seong-Gi Kim[1, 8], Gadi Wollstein[3], Joel S. Schuman[3, 4], Kevin C. Chan[1, 3]
[1]Neuroimaging Laboratory, University of Pittsburgh, Pittsburgh, PA, United States; [2]Department of Electrical and Electronic Engineering, The University of Hong Kong, Pokfulam, Hong Kong, China; [3]Department of Ophthalmology, School of Medicine, University of Pittsburgh, Pittsburgh, PA, United States; [4]Department of Bioengineering, Swanson School of Engineering, University of Pittsburgh, Pittsburgh, PA, United States; [5]Division of Biomedical Engineering, Hong Kong University of Science and Technology, Clear Water Bay, Hong Kong, China; [6]University Eye Center, Hong Kong Eye Hospital, Hong Kong, China; [7]Department of Ophthalmology and Visual Sciences, The Chinese University of Hong Kong, Hong Kong, China; [8]Center for Neuroscience Imaging Research, Institute for Basic Science, Sungkyunkwan University, Suwon, Korea

2285. Retinal-Choroidal Blood Flow Decreases with Age: An MRI Study
Oscar San Emeterio Nateras[1, 2], Joseph M. Harrison[3], Eric R. Muir, [23], Yi Zhang[2], Qi Peng, [24], Steven Chalfin[3], Juan E. Gutierrez[5], Daniel A. Johnson[3], Jeffrey W. Kiel[3], Timothy Q. Duong, [23]
[1]Biomedical Engineering, University of Texas at San Antonio , San Antonio, TX, United States; [2]Research Imaging Institute, San Antonio, TX, United States; [3]Ophthalmology, University of Health Science Center at San Antonio, TX, United States; [4]Radiology, Albert Einstein College of Medicine, and Montefiore Medical Center, Bronx, NY, United States; [5]Radiology, University of Health Science Center at San Antonio, TX, United States

2286. Sources and Mitigation of Physiological Noise in Brainstem fMRI Studied at High Resolution
Laetitia Maëlle Vionnet[1], Lars Kasper[1, 2], Michael Wyss[1], Mike Bruegger[1, 3], Klaas Paul Pruessmann[1]
[1]Institute for Biomedical Engineering, ETH and University Zurich, Zurich, Switzerland; [2]Translational Neuromodeling Unit, ETH and University Zurich, Zurich, Switzerland; [3]Center of Dental Medicine, University of Zurich, Zurich, Switzerland

2287. Automated Vessel Segmentation from Quantitative Susceptibility Maps at 7 Tesla
Pierre-Louis Bazin[1], Audrey Fan[2], Gabriela Mianowska[3], Agnieska Olbrich[3], Andreas Schäfer[1], Arno Villringer[1], Claudine Gauthier[4]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; [2]Stanford University, CA, United States; [3]AGH University of Science and Technology, Cracow, Poland; [4]Concordia University, Montréal, Québec, Canada

2288. Effectively Improving Accuracy and Reliability in Intracranial Volume Change for MR Intracranial Pressure Measurement
Yi-Hsin Tsai[1], Hung-Chieh Chen[2], Hsin Tung[3], Da-Chuan Cheng[4], Clayton Chi-Chang Chen[2], Jyh-Wen Chai[1, 2], Hsiao-Wen Chung[5], Wu-Chung Shen[6]
[1]College of Medicine, China Medical University, Taichung, Taiwan; [2]Department of Radiology, Taichung Veterans General Hospital, Taichung, Taiwan; [3]Neurological Institute, Taichung Veterans General Hospital, Taiwan, Taiwan; [4]Department of Biomedical Imaging and Radiological Science, China Medical University, Taichung, Taiwan; [5]Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan; [6]College of Health Care, China Medical University, Taichung, Taiwan

Traditional Poster
Head & Neck & Beyond
Exhibition Hall Wednesday 13:30-15:30

2289. Slab-Wise Pulse Design Enhances the Performance of Dual Source Parallel RF Transmission at 3T
Xiaoping Wu[1], Dingxin Wang[1, 2], Jinfeng Tian[1], Sebastian Schmitter[1], Vibhas Deshpande[3], Tommy Vaughan[1], Kamil Ugurbil[1], Pierre-Francois Van de Moortele[1]
[1]CMRR, Radiology, University of Minnesota, Minneapolis, MN, United States; [2]Siemens Medical Solutions USA, Inc., Minneapolis, MN, United States; [3]Siemens Medical Solutions USA, Inc., Austin, TX, United States

2290. Sound Synchronization and Motion Compensated Reconstruction for Speech Cine MRI.
Pierre-André Vuissoz[1, 2], Freddy Odille, [12], Yves Laprie[3, 4], Emmanuel Vincent[3, 5], Jacques Felblinger[6, 7]
[1]Imagerie Adaptative Diagnostique et Interventionnelle, Université de Lorraine, Nancy, France; [2]U947, INSERM, Nancy, France; [3]LORIA, Université de Lorraine, Nancy, France; [4]LORIA, CNRS, Nancy, France; [5]LORIA, INRIA, Nancy, France; [6]University Hospital Nancy, Nancy, France; [7]CIC-IT 1433, INSERM, Nancy, France

2291. Diffusion Tensor Imaging of the Auditory Nerve in Patients with Long-Term Single-Sided Deafness
Sjoerd B. Vos[1, 2], Wieke Haakma[3, 4], Huib Versnel[1], Martijn Froeling[3], Lucienne Speleman[1], Pieter Dik[5], Max A. Viergever[2], Alexander Leemans[2], Wilko Grolman[1]
[1]Department of Otorhinolaryngology and Head & Neck Surgery, University Medical Center Utrecht, Utrecht, Netherlands; [2]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands; [3]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [4]Department of Forensic Medicine & Comparative Medicine Lab, Aarhus University, Denmark; [5]Department of Pediatric Urology, University Children's Hospital UMC Utrecht, Utrecht, Netherlands

2292. Size of Vestibular Endolymph in Patients with Isolated Lateral Semicircular Canal Dysplasia
Shinji Naganawa[1], Hisashi Kawai[1], Michihiko Sone[2], Mitsuru Ikeda[3]
[1]Department of Radiology, Nagoya University Graduate School of Medicine, Nagoya, Japan; [2]Department of Otorhinolaryngology, Nagoya University Graduate School of Medicine, Nagoya, Japan; [3]Department of Radiological and Medical Laboratory Sciences, Nagoya University Graduate School of Medicine, Nagoya, Japan

2293. MR Elastography of Skull Base Tumors
John Huston III[1], Arvin Arani[1], Nikoo Fattahi[1], Kevin J. Glaser[1], David S. Lake[1], Armando Manduca[1], Joshua D. Hughes[2], Jamie J. Van Gompel[2], Richard L. Ehman[1]
[1]Radiology, Mayo Clinic, Rochester, MN, United States; [2]Neurosurgery, Mayo Clinic, Rochester, MN, United States

2294. The Merged Images with Different Central Frequencies Can Reduce Banding Artifact of 3D-SSFP MR Cisternography
Koji Matsumoto[1, 2], Hajime Yokota[3, 4], Hiroki Mukai[4], Ken Motoori[4], Toshiaki Miyachi[2], Yoshitada Masuda[1], Takashi Uno[4]
[1]Department of Radiology, Chiba University Hospital, Chiba, Japan; [2]Division of Health Sciences, Kanazawa University, Kanazawa, Ishikawa, Japan; [3]Department of Radiology, Kyoto Prefectural University of Medicine, Kyoto, Japan; [4]Diagnostic Radiology and Radiation Oncology, Chiba University, Chiba, Japan

2295. T1ρ Weighted Imaging in Middle Ear Cholesteatoma
Koji Yamashita[1], Akio Hiwatashi[1], Osamu Togao[1], Kazufumi Kikuchi[1], Tomoyuki Okuaki[2], Nozomu Matsumoto[3], Koji Kobayashi[4], Hiroshi Honda[1]
[1]Clinical Radiology, Graduate School of Medical Science, Kyushu University, Fukuoka, Japan; [2]Philips Electronics Japan, Tokyo, Japan; [3]Otorhinolaryngology, Kyushu University, Fukuoka, Japan; [4]Medical Technology, Kyushu University hospital, Fukuoka, Japan

2296. Surgical Validation of Extracranial Facial Nerve Magnetic Resonance Tractography
Arnaud ATTYE[1, 2], Alexandre KARKAS[3], Irene TROPRES[4], Laurent LAMALLE[4], Felix RENARD[5], Georges BETTEGA[6], Christian RIGHINI[3], Alexandre KRAINIK[5]

[1]Neuroradiology, Grenoble University Hospital, Grenoble, Rhône Alpes , France; [2]UMS IRMaGe, Grenoble, Rhône Alpes , France; [3]Otolaryngology, Grenoble University Hospital, Rhône Alpes, France; [4]UMS IRMaGe, Rhône Alpes, France; [5]Neuroradiology, Grenoble University Hospital, Rhône Alpes, France; [6]Maxillofacial Surgery, Grenoble University Hospital, Rhône Alpes, France

2297. A Study of MS Based on a Fusion Quantitative Analysis Model of DTI
Heather Ting Ma[1, 2], Pengfei Yang[1], Chenfei Ye[1], Jun Wu[3], Xuhui Chen[3], Jinbo Ma[1]
[1]Department of Electronic and Information Engineering, Harbin Institute of Technology Shenzhen Graduate School, Shenzhen, Guangdong, China; [2]Radiology Department, Johns Hopkins University, Baltimore, MD, United States; [3]Department of Neurology, Peking University Shenzhen Hospital, Shenzhen, Guangdong, China

2298. A Noise Suppression Approach in the Quantitative Analysis of DCE Images
Renjie He[1], Yao Ding[2], Clifton Fuller[2], Qi Liu[1], Weiguo Zhang[3]
[1]United Imaging Healthcare America, Houston, TX, United States; [2]MDACC, TX, United States; [3]United Imaging Healthcare, Shanghai, China

2299. Application of Two-Compartmental Pharmacokinetic Analysis with and Without Vascular Term for Differentiating Benign and Malignant Spinal Tumors Measured by DCE-MRI
Ning Lang[1], Hon J. Yu[2], Huishu Yuan[1], Min-Ying Su[2]
[1]Department of Radiology, Peking University Third Hospital, Beijing, China; [2]Tu&Yuen Center for Functional Onco-Imaging, University of California, Irvine, CA, United States

2300. Accurate Classification of Parotid Tumors Based on Histogram Analysis of ADC-Maps
Sanam Assili[1, 2], Anahita Fathi Kazerooni[1, 3], Mahnaz Nabil[1, 4], Leila Agha Ghazvini[5], Mojtaba Safari[1], Hamidreza Saligheh Rad[1]
[1]Quantitative MR Imaging and Spectroscopy Group, Research Center for Molecular and Cellular Imaging, Tehran University of Medical Sciences, Tehran, Iran; [2]Department of Medical Physics, School of Medicine, Tabriz University of Medical Sciences, Tabriz, Iran; [3]Department of Medical Physics and Biomedical Engineering, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran; [4]Department of Statistics, Tarbiat Modares University, Tehran, Iran; [5]Department of Radiology, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran

2301. Clinical Evaluation of ZTE Skull Segmentation
Gaspar Delso[1], Mohammad Mehdi Khalighi[1], Florian Wiesinger[2], Patrick Veit-Haibach[3]
[1]GE Healthcare, Waukesha, WI, United States; [2]GE Global Research, Germany; [3]University Hospital of Zurich, Switzerland

2302. K-T BLAST/k-T FOCUSS in Real Time Imaging of the Soft Palate During Speech
Marzena Wylezinska[1], Andreia Freitas, [12], Malcolm Birch[1], Marc Miquel[1, 2]
[1]Clinical Physics, Barts Health NHS Trust, London, United Kingdom; [2]William Harvey Research Institute, Queen Mary University of London, London, United Kingdom

2303. Frequency-Dependent Neural Activity in Patients with Unilateral Vascular Pulsatile Tinnitus
Han Lv[1], Zhenchang Wang[1], Zhaohui Liu[2], Fei Yan[2], Pengfei Zhao[1], Ting Li[2]
[1]Beijing Friendship Hospital, Beijing, China; [2]Beijing Tongren Hospital, Beijing, China

2304. Extra-Ocular Muscle Fat Fraction in Thyroid Eye Disease
Tilak Das[1], Andrew J. Patterson[1], Paul Meyer[2], Rachna Murthy[2], Martin J. Graves[1]
[1]Department of Radiology, Cambridge University Hospitals NHS Foundation Trust, Cambridge, United Kingdom; [2]Dept of Ophthalmology, Cambridge University Hospitals NHS Foundation Trust, Cambridge, United Kingdom

2305. Accelerated Multi-Shot Diffusion Imaging in Optic Nerve
Jr-yuan George Chiou[1], Bruno Madore[1], Stephan E. Maier[1]

[1]Department of Radiology, Brigham and Women's Hospital, Boston, MA, United States

2306. Measurement of the Vitreous Humour Deformation and Strain with Tagged MR Imaging
Ming Li[1, 2], Paul Gamlin[3], Mark S. Bolding[4, 5], Ronald J. Beyers[1], Nouha Salibi, [16], Xiaoxia Zhang[1, 2], Thomas S. Denney Jr. [1, 2]
[1]Auburn University MRI Research Center, Auburn University, Auburn, AL, United States; [2]Electrical and Computer Engineering, Auburn University, Auburn, AL, United States; [3]Department of Ophthalmology, University of Alabama at Birmingham, Birmingham, AL, United States; [4]Departments of Radiology, Vision Sciences, and Neurobiology, University of Alabama at Birmingham, Birmingham, AL, United States; [5]Civitan Functional Neuroimaging Laboratory, University of Alabama at Birmingham, Birmingham, AL, United States; [6]MR R&D, Siemens Healthcare, Malvern, PA, United States

2307. The Effects of Dorzolamide on Retinal and Choroidal Blood Flow in a Mouse Glaucoma Model
Saurav B. Chandra[1], Kaiwalya S. Deo[1], Eric R. Muir[1], Jeffrey W. Kiel[2], Timothy Q. Duong[1]
[1]Research Imaging Institute, UT Health Sc. Center, San Antonio, San Antonio, TX, United States; [2]Ophthalmology, UT Health Sc. Center, San Antonio, San Antonio, TX, United States

2308. High Resolution DWI for Orbital Tumors: 3D Turbo Field Echo with Diffusion-Sensitized Driven-Equilibrium (DSDE-TFE) Preparation Technique
Akio Hiwatashi[1], Osamu Togao[1], Koji Yamashita[1], Kazufumi Kikuchi[1], Makoto Obara[2], Hiroshi Honda[1]
[1]Radiology, Kyushu University, Fukuoka, Japan; [2]Philips Electronics Japan, Tokyo, Japan

2309. Reduced Field-Of-View Imaging with 3D Variable Flip Angle Fast Spin Echo-Feasibility in MRI of Orbits
Suchandrima Banerjee[1], Misung Han[2], Weitian Chen[1], Christopher P. Hess[2], Roland Krug[2], Ajit Shankaranarayanan[1], Yuval Zur[3]
[1]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [2]Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [3]GE Healthcare, Tirat Carmel, Israel

2310. T1-W SE-PROPELLER to Overcome Motion and Flow Artifacts in Head and Neck Imaging
Taihra Zadi[1], Mika Vogel[2], Magnus Mårtensson[3], Piotr A. Wielopolski[1], Aad van der Lugt[1]
[1]Department of Radiology, Erasmus University Medical Center, Rotterdam, Zuid-Holland, Netherlands; [2]Healthcare Systems, General Electric Healthcare, Hoevelaken, Gelderland, Netherlands; [3]Applications and Workflow, General Electric Healthcare, Stockholm, Södermanland, Sweden

2311. Metal Artifact Reduction Using MAVRIC in the Presence of Common Orthodontic Appliances
Jeff A. Kohlmeier[1], Heidi A. Edmonson[2], Joel P. Felmlee[2], David W. Stanley[3], Fred J. Regennitter[1], John E. Volz[1]
[1]Department of Orthodontics, Mayo Clinic, Rochester, MN, United States; [2]Department of Radiology, Mayo Clinic, Rochester, MN, United States; [3]GE Healthcare, Rochester, MN, United States

2312. Alterations in Cortical Sensorimotor Connectivity Following Complete Cervical Spinal Cord Injury: Evidence from Resting-State fMRI
Akinwunmi Oni-Orisan[1], Mayank Kaushal[2], Wenjun Li[1], B. Doug Ward[1], Aditya Vedantam[3], Benjamin Kalinosky[2], Dana Seslija[1], Matthew Budde[1], Brian Schmit[2], Shi-Jiang Li[1], Muqeet Vaishnavi[1], Shekar Kurpad[1]
[1]Medical College of Wisconsin, Milwaukee, WI, United States; [2]Marquette University, Milwaukee, WI, United States; [3]Baylor College of Medicine, Houston, TX, United States

2313. Short-Term Reproducibility of Apparent Diffusion Coefficient and Intravoxel Incoherent Motion Parameters in Normal Head and Neck Tissues: Comparisons of 4b Values, 4b Values with Cardiac Gating, and 17 B Values
KOUNG MI KANG[1], Seung Hong Choi[1]
[1]Radiology, Seoul National Univ. Hospital, Seoul, Korea

2314. MiR-155 Ablation Protects Spinal Cord (SC) from Damage in a Mouse Model of Ischemic SC Injury
Anna Bratasz[1], Esmerina Tili[2, 3], Xiaomei Meng[2], Jean-Jacques Michaille[4, 5], Lamia Bouhliqah[6], Phillip G. Popovich[7], Cynthia Mcallister[8], D Michele Basso[9], José J. Otero[10], Claudia Kirsch[11], Richard Burry[12], Kimerly A. Powell[1], Peter Mohler[13], Carlo M. Croce[4], Hamdy Awad[2]
[1]Small Animal Imaging Core, The Ohio State University, Columbus, OH, United States; [2]Department of Anesthesiology, The Ohio State University, OH, United States; [3]Department of Molecular Virology, The Ohio State Univeristy, OH, United States; [4]Department of Molecular Virology, The Ohio State University, OH, United States; [5]Université de Bourgogne, Dijon, France; [6]Department of ENT, The Ohio State University, OH, United States; [7]Department of Neuroscience, The Ohio State University, OH, United States; [8]Nationwide Children Hospital, OH, United States; [9]School of Health and Rehabilitation Sciences, The Ohio State University, OH, United States; [10]Department of Pathology, The Ohio State University, OH, United States; [11]Department of Radiology, The Ohio State University, OH, United States; [12]Department of Neuroscience,, The Ohio State University, OH, United States; [13]Dorothy M. Davis Heart and Lung Research Institute, The Ohio State University, OH, United States

2315. Assessment of Cervical Spinal Cord Injuries with Readout-Segmented Multi-Shot (RESOLVE) Diffusion Tensor Imaging and Fiber Tractography
Chen-Te Wu[1], Cheng-Chih Liao[2], Chung-Lin Yang[2], Jiun-Jie Wang[3], Ching-Po Lin[4], Shih-Tseng Li[2]
[1]Department of Medical Imaging and Intervention, Chang Gung Memorial Hospital, Linkou, Taoyuan, Taiwan; [2]Departments of Neurosurgery, Chang Gung Memorial Hospital & Chang Gung University, Taiwan; [3]Department of Medical Imaging and Radiological Science, Chang Gung University, Taiwan; [4]Brain Connectivity Lab, Institute of Neuroscience, National Yang-Ming University, Taipei, Taiwan

2316. Injury Alters the Intrinsic Functional Connectivity Network in Spinal Cord of Monkeys
Li Min Chen[1, 2], Arabinda Mishra[1, 2], Feng Wang[1, 2], Pai-Feng Yang[1, 2], John C. Gore[1, 2]
[1]Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [2]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States

2317. Robust Diffusion-Prepared Neurography of the Complete Brachial Plexus Facilitated by an Optimized Shimming Strategy.
Jos Oudeman[1], Bram F. Coolen[1], Camiel Verhamme[2], Mario Maas[1], Andrew Webb[3], Gustav J. Strijkers[4], Aart J. Nederveen[1]
[1]Radiology, Academic Medical Center, Amsterdam, Noord-Holland, Netherlands; [2]Neurology, Academic Medical Center, Amsterdam, Noord-Holland, Netherlands; [3]Radiology, Leiden University Medical Center, Leiden, Zuid-Holland, Netherlands; [4]Biomechanical engineering and physics, Academic Medical Center, Amsterdam, Noord-Holland, Netherlands

2318. Reproducibility of Resting State Spinal Cord Networks at 7 Tesla
Robert L. Barry[1, 2], Baxter P. Rogers[1, 2], Seth A. Smith[1, 2], John C. Gore[1, 2]
[1]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States; [2]Radiology and Radiological Sciences, Vanderbilt University Medical Center, Nashville, TN, United States

2319. Endothelial Nitric-Oxide Synthase Overexpression Rescues Cerebral Blood Flow and Cerebrovascular Reactivity in Diabetic Brain
Saurav B. Chandra[1], Sumathy Mohan[2], Preethi Janardhanan[2], Kaiwalya S. Deo[1], Eric R. Muir[1], Timothy Q. Duong[1]
[1]Research Imaging Institute, UT Health Science Center, San Antonio, TX, United States; [2]Pathology, UT Health Sc. Center, San Antonio, TX, United States

2320. Measuring Brain Lactate with ^{1}H-MRS During Hypoglycemia in Humans; Preliminary Results
Evita C. Wiegers[1], Hanne M.M. Rooijackers[2], Cees J. Tack[2], Arend Heerschap[1], Bastiaan E. de Galan[2], Marinette van der Graaf[1, 3]
[1]Radiology and Nuclear Medicine, Radboud University Medical Center, Nijmegen, Gelderland, Netherlands; [2]Internal Medicine, Radboud University Medical Center, Nijmegen, Gelderland, Netherlands; [3]Pediatrics, Radboud University Medical Center, Nijmegen, Gelderland, Netherlands

2321. Diffusion Tensor Imaging Analysis of Presbycusis Using Voxel-Based Method
Fei Gao[1], Guangbin Wang[1], Bin Zhao[1], Wen Ma[2], Muwei Li[3], Fuxin Ren[1], Bo Liu[1], Weibo Chen[4]

[1]Shandong Medical Imaging Research Institute, Shandong University, Jinan, China; [2]The Central Hospital of Jinan City, Shandong University, Jinan, China; [3]College of Electronics and Information Engineering, Sichuan University, Chengdu, China; [4]Philips Healthcare, Shanghai, China

Traditional Poster
Perfusion & Permeability

Exhibition Hall Wednesday 13:30-15:30

2322. Absolute CBV and AIF from Global Recirculation Approach

ISMRM MERIT AWARD magna cum laude

Jeiran Jahani[1], Timothy M. Shepherd[1], Glyn Johnson[1], Valerij G. Kiselev[2], Dmitry S. Novikov[1]
[1]Department of Radiology, New York University School of Medicine, New York City, NY, United States; [2]Department of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany

2323. Measurement of Local Cerebral Hematocrit with MRI

Fernando Calamante[1], André Ahlgren[2], Matthias J.P. van Osch[3], Linda Knutsson[2]
[1]The Florey Institute of Neuroscience and Mental Health, University of Melbourne, Melbourne, Victoria, Australia; [2]Department of Medical Radiation Physics, Lund University, Lund, Sweden; [3]Department of Radiology, C.J. Gorter Center for high field MRI, Netherlands

2324. Reconstructing the One-Compartment Tracer-Kinetic Field with Diffusion and Convection

Steven Sourbron[1]
[1]University of Leeds, Leeds, UK, United Kingdom

2325. Arterial Spin Labeling Improvement by Incorporating Local Similarity with Anatomic Images

Li Zhao[1], Weiying Dai[1], David Alsop[1]
[1]Radiology, Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA, United States

2326. On the Use of DSC-MRI for Measuring Vascular Permeability

Jack T. Skinner[1, 2], Paul L. Moots[3], C Chad Quarles[1, 2]
[1]Radiology and Radiological Sciences, Vanderbilt University Medical Center, Nashville, TN, United States; [2]Institute of Imaging Science, Vanderbilt University Medical Center, Nashville, TN, United States; [3]Neurology, Vanderbilt University Medical Center, Nashville, TN, United States

2327. A Simplified Spin and Gradient Echo (SAGE) Approach for Brain Tumor Perfusion Imaging

Ashley M. Stokes[1], C. Chad Quarles[1]
[1]Institute of Imaging Science, Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States

2328. Cell Size Imaging

Natenael B. Semmineh[1], Ashley M. Stokes[1], John C. Gore[1], C Chad Quarles[1]
[1]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States

2329. Comparative Assessment of SAGE and GRE DSC Perfusion: Initial Assessment in a Stroke Cohort

Shalini A. Amukotuwa[1, 2], Fernando Calamante[2], Roland Bammer[1]
[1]Department of Radiology, Stanford University, Stanford, CA, United States; [2]The Florey Institute of Neuroscience and Mental Health, University of Melbourne, Parkville, VIC, Australia

2330. Improving Look & Locker Readout for PCASL Using a Variable Flip Angle Sweep

Marco Castellaro[1], Alessandra Bertoldo[1], Denis Peruzzo[2], Filippo Arrigoni[3], Matthias Van Osch[4]
[1]Department of Information Engineering, University of Padova, Padova, Italy; [2]Department of Neuroimaging,, Research institute IRCCS "E. Medea", Bosisio Parini, Lecco, Italy; [3]Department of Neuroimaging, Research institute IRCCS "E. Medea", Bosisio Parini, Lecco, Italy; [4]C.J. Gorter Center for High Field MRI, Radiology, Leiden University Medical Center, Leiden, Netherlands

2331. Effect of Labelling Plane Angulation on PCASL Labelling Efficiency – Does It Really Matter?
Magdalena Sokolska[1], Xavier Golay[1], David Thomas[1]
[1]UCL Institute of Neurology, London, United Kingdom

2332. Time-Resolved Artery-Selective Angiography Based on Super-Selective Arterial Spin Labeling
Thomas Lindner[1], Ulf Jensen-Kondering[1], Olav Jansen[1], Matthias JP van Osch[2], Michael Helle[3]
[1]Department of Radiology and Neuroradiology, UKSH, Kiel, Germany; [2]Department of Radiology, LUMC, C. J. Gorter Center for High Field MRI, Leiden, Netherlands; [3]Philips Research, Hamburg, Germany

2333. The Many Advantages of Arterial Spin Labeling with Long Label Duration
R. Marc Lebel[1, 2], Ajit Shankaranarayanan[3], Eric E. Smith[4], Cheryl McCreary[2], Richard Frayne[2], Weiying Dai[5], David C. Alsop[5]
[1]GE Healthcare, Calgary, Alberta, Canada; [2]Radiology, University of Calgary, Calgary, Alberta, Canada; [3]GE Healthcare, Menlo Park, CA, United States; [4]Clinical Neurosciences, University of Calgary, Calgary, Alberta, Canada; [5]Radiology, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, United States

2334. Inflow Velocity Density Mapping Using Fourier Analysis of Velocity Selective ASL Images
Tianrui Luo[1], Luis Hernandez-Garcia[2]
[1]University of Michigan, Ann Arbor, MI, United States; [2]FMRI Laboratory, University of Michigan, Ann Arbor, MI, United States

2335. Conversion of the Arterial Input Function Using Accelerated Dual-Contrast EPIK: A Multi-Modality MR-PET Study
Liliana Lourenco Caldeira[1], Seong Dae Yun[1], Nuno André da Silva[1], Christian Filss[1], N. Jon Shah[1, 2]
[1]Institute of Neuroscience and Medicine (4), Forschungszentrum Juelich, Jülich, Germany; [2]RWTH Aachen University, Faculty of Medicine, Department of Neurology, JARA, Aachen, Germany

2336. Robust Inter-Pulse Phase Correction for Brain Perfusion Imaging at Very High Field Using Pseudo-Continuous Arterial Spin Labeling (PCASL)
Lydiane Hirschler[1, 2], Clément Stéphan Debacker[1, 2], Jérôme Voiron[2], Jan Warnking[1, 3], Emmanuel Luc Barbier[1, 3]
[1]Université Grenoble Alpes, Grenoble Institut des Neurosciences, Grenoble, France; [2]Bruker Biospin, Ettlingen, Germany; [3]Inserm, U836, Grenoble, France

2337. Arterial Input Partial Volume Artifacts Correction Applied for a T1-Weighted 3D Gradient Echo Sequence
Stefan Hindel[1], Nico Verbeek[2], Anika Sauerbrey[1], Lutz Lüdemann[1]
[1]Strahlenklinik und Poliklinik, Universitätsklinikum Essen, Essen, North Rhine-Westphalia, Germany; [2]Heinrich-Heine-Universität Düsseldorf, Düsseldorf , North Rhine-Westphalia, Germany

2338. Statistical Mapping of Cerebral Blood Flow Territories Using Multi-Phase Pseudo-Continuous Arterial Spin Labeling
Wen-Chau Wu[1, 2]
[1]National Taiwan University, Taipei, Taiwan; [2]Department of Medical Imaging, National Taiwan University Hospital, Taipei, Taiwan

2339. Fully Bayesian Multi-Model Inference for Parameter Estimation in DCE-MRI
Tammo Rukat[1], Stefan A. Reinsberg[1]
[1]Department of Physics and Astronomy, University of British Columbia, Vancouver, British Columbia, Canada

2340. A Modified Deconvolution Method to Quantify Brain Tumour Haemodynamic Parameters in the Presence of Contrast Agent Extravasation.
Thaís Roque[1], Amit Mehndiratta[2], Lawrence Kenning[3], Martin Lowry[3], Michael Chappell[1]
[1]Institute of Biomedical Engineering IBME, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]Centre for Biomedical Engineering, Indian Institute of Technology Delhi, New Delhi, India; [3]Centre for MR investigations CMRI, University of Hull, Hull, United Kingdom

2341. *In Vitro* and *In Vivo* Measurement of Pseudo Continuous Arterial Spin Labeling Efficiency
Adam Michael Bush[1], Gregory Lee[2], Matt Borzage[1], Vincent Schmithorst[2], Scott Holland[2], John Wood[1]
[1]Children's Hospital Los Angeles USC, Los Angeles, CA, United States; [2]Pediatric Neuroimaging Research Consortium, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States

2342. Experimental Assessment of PCASL Labeling Efficiency in the Peripheral Vasculature
Erin K. Englund[1], Zachary B. Rodgers[2], Thomas F. Floyd[3], Felix W. Wehrli[2]
[1]Department of Radiology, University of Pennsylvania , Philadelphia, PA, United States; [2]Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [3]Department of Anesthesiology, Stony Brook University, Stony Brook, NY, United States

2343. Improving the Reproducibility of Labeling-Efficiency Measurements *In Vivo* in Pseudo-Continuous Arterial Spin Labeling
Kathrin Lorenz[1, 2], Toralf Mildner[1], Torsten Schlumm[1], Harald E. Möller[1, 2]
[1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany; [2]Faculty of Physics and Earth Sciences, University of Leipzig, Saxony, Germany

2344. Optimization of Phase-Contrast MRI for the Quantification of Whole-Brain Cerebral Blood Flow
ISMRM MERIT AWARD magna cum laude
Shin-Lei Peng[1, 2], Pan Su[1, 3], Fu-Nien Wang[2], Yan Cao[4], Rong Zhang[5], Hanzhang Lu[1, 3], Peiying Liu[1]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan; [3]Biomedical Engineering Graduate Program, UT Southwestern Medical Center, TX, United States; [4]Department of Mathematical Sciences, University of Texas at Dallas, Richardson, TX, United States; [5]Institute for Exercise and Environmental Medicine, Texas Health Presbyterian Hospital Dallas, Dallas, TX, United States

2345. Optimal Sampling Design in Quantitative DCE MRI
Ina Nora Kompan[1, 2], Matthias Guenther[1, 2]
[1]Fraunhofer MEVIS, Bremen, Germany; [2]mediri GmbH, Heidelberg, Baden-Württemberg, Germany

2346. Caipirinha Acceleration for Intracranial 3D DCE MRI: Determination of the Optimal Sampling Pattern
Michael Ingrisch[1], Michael Peller[1], Birgit Ertl-Wagner, Maximilian F. Reiser, Olaf Dietrich[1]
[1]Josef-Lissner-Laboratory for Biomedical Imaging, Institute for Clinical Radiology, Ludwig-Maximilians-University Hospital, München, Germany

2347. The Effect of Dynamic Contrast Enhanced Acquisition Duration on Estimated Pharmacokinetic Parameters: Study of Simulated and Real Data
Moran Artzi[1, 2], Gilad Liberman[1, 3], Guy Nadav[1, 4], Deborah T. Blumenthal[5], Orna Aizenstein[1], Dafna Ben Bashat[1, 6]
[1]Functional Brain Center, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel; [2]Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel; [3]Department of Chemical Physics, Weizmann Institute, Rehovot, Israel; [4]Functional Brain Center, Tel Aviv University, Tel Aviv, Israel; [5]Neuro-Oncology Service, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel; [6]Sackler Faculty of Medicine and Sagol School of Neuroscience, Tel Aviv University, Tel Aviv, Israel

2348. Correcting for Bolus Delay and Dispersion in the AIF Using a Constrained Local AIF (LAIF) Model
Chong Duan[1], Jesper F. Kallehauge[2], Carlos J. Perez-Torres[3], Kari Tanderup[4, 5], Larry Bretthorst[3], Joseph JH Ackerman[1, 3], Joel R. Garbow[3]

[1]Chemistry, Washington University, Saint Louis, MO, United States; [2]Medical Physics, Aarhus University, Aarhus, Denmark; [3]Radiology, Washington University, Saint Louis, MO, United States; [4]Radiation Oncology, Washington University, Saint Louis, MO, United States; [5]Oncology, Aarhus University, Aarhus, Denmark

2349. Validation of Random Vessel-Encoded Arterial Spin Labeling as Territorial Perfusion Imaging by Comparison to Conventional VEASL
Yi Dang[1], Jia Guo[2], Jue Zhang[3, 4], Eric Che Wong[5]
[1]Magnetic Resonance Imaging Research Center,Institution of Psychology, Chinese Academy of Sciences, Beijing, China; [2]Department of Bioengineering, University of California San Diego, CA, United States; [3]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China; [4]College of Enigneering, Peking University, Beijing, China; [5]Department of Radiology and Psychiatry, University of California San Diego, CA, United States

2350. Scan-Rescan Variability in DCE-MRI Comparing Signal Difference and Concentration-Based Methods
Edward Ashton[1], Jill Fredrickson[2]
[1]VirtualScopics, Inc., Rochester, NY, United States; [2]Genentech, Inc., South San Francisco, CA, United States

2351. Feasibility of Free-Breathing DCE-MRI: Phantom Studies to Compare VIBE, Radial-VIBE, and CAIPIRINHA-VIBE
Chang Kyung Lee[1], Bohyun Kim[1], Nieun Seo[1], Jeong Kon Kim[1], In Seong Kim[2], Berthold Kiefer[3], Kyung Won Kim[1]
[1]Radiology, Seoul Asan Medical Center, Seoul, Korea; [2]Siemens Healthcare, Seoul, Korea; [3]Siemens Healthcare, Erlangen, Germany

2352. Comparison of 3 and 7 Tesla Arterial Spin Labelling Techniques for Simultaneous Functional Perfusion and BOLD MRI Studies
Dimo Ivanov[1], Anna Gardumi[1], Benedikt A. Poser[1], Josef Pfeuffer[2], Kâmil Uludağ [1]
[1]Department of Cognitive Neuroscience, Maastricht University, Maastricht, Netherlands; [2]Application Development, Siemens Healthcare, Erlangen, Germany

2353. Application of Multi-TI Arterial Spin-Labeling MRI in Brain Tumors: Comparison with Dynamic Susceptibility Contrast
Shuang Yang[1], Tianyi Qian[2], Jianwei Xiang[3], Yingchao Liu[4], Peng Zhao[4], Josef Pfeuffer[5], Guangbin Wang[1], Bin Zhao[1]
[1]Shandong Medical Imaging Research Institute, Shandong University, Jinan, Shandong, China; [2]MR Collaborations NE Asia, Siemens Healthcare, Beijing, China; [3]Shandong Medical Imaging Research Institute, Taishan Medical University, Jinan, Shandong, China; [4]Neurosurgery, Shandong provincial Hospital Affiliated to Shandong University, Shandong, China; [5]Application Development, Siemens Healthcare, Erlangen, Germany

2354. Quantifying Cerebral Blood Flow: A Comparison of Two Non-Invasive Perfusion Imaging Techniques
Gena Matta[1, 2], Andrew D. Robertson[1], Sandra E. Black[1, 3], Bradley J. MacIntosh[1, 3]
[1]Canadian Partnership for Stroke Recovery, Sunnybrook Research Institute, Toronto, Ontario, Canada; [2]University of Waterloo, Waterloo, Ontario, Canada; [3]University of Toronto, Toronto, Ontario, Canada

2355. Comparison of PASL, PCASL and Background Suppressed 3D PCASL in a Clinical Population
Sudipto Dolui[1, 2], Marta Vidorreta[1], Ze Wang[3, 4], David A. Wolk[1], John A. Detre[1, 2]
[1]Department of Neurology, University of Pennsylvania, Philadelphia, PA, United States; [2]Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [3]Hangzhou Normal University, Hangzhou, Zhejiang, China; [4]Department of Psychiatry and Radiology, University of Pennsylvania, PA, United States

2356. An Outlier Rejection Algorithm for ASL Time Series : Validation with ADNI Control Data
Sudipto Dolui[1, 2], Ze Wang[3, 4], David A. Wolk[1], John A. Detre[1, 2]
[1]Department of Neurology, University of Pennsylvania, Philadelphia, PA, United States; [2]Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [3]Hangzhou Normal University, Hangzhou, Zhejiang, China; [4]Department of Psychiatry and Radiology, University of Pennsylvania, PA, United States

2357. The Impact of Blood Bolus Dispersion on Myocardial Arterial Spin Labeling

Karsten Sommer[1, 2], Dominik Bernat[1], Regine Schmidt[1], Laura M. Schreiber[1]
[1]Department of Radiology, Johannes Gutenberg University Medical Center, Mainz, Rhineland-Palatinate, Germany; [2]Max Planck Graduate Center with the Johannes Gutenberg University Mainz, Mainz, Rhineland-Palatinate, Germany

2358. Three-Dimentional Stereotactic Surface Projections Applied to Arterial Spin Labeling in a Clinical Population

Jalal B. Andre[1], Greg Wilson[1], Yoshimi Anzai[1], Mahmud Mossa-Basha[1], Michael N. Hoff[1], Satoshi Minoshima[1]
[1]Radiology, University of Washington, Seattle, WA, United States

2359. Application of Pseudo-Continuous Arterial Spin Labeling for Quantification of Hepatic Perfusion

Mike-Ely Cohen[1, 2], Isabelle Lajoie[2], Kenneth Dyson[2], Olivier Lucidarme[3, 4], Richard D. Hoge[2, 5], Frédérique Frouin[4, 6]
[1]Laboratoire d'imagerie biomedicale, Sorbonne Université Univ Paris 06, Inserm, CNRS, Paris, France; [2]Centre de recherche de l'institut universitaire de gériatrie de Montréal, Montréal, Quebec, Canada; [3]Service de Radiologie Polyvalente Diagnostique et Oncologique, CHU Pitié-Salpêtrière, AP-HP, Paris, France; [4]Laboratoire d'imagerie biomedicale, Sorbonne Université Univ Paris 06, Inserm, CNRS,, Paris, France; [5]McConnell Brain Imaging Centre, Montreal Neurological Institute - McGill University, Quebec, Canada; [6] CEA/I2BM/SHFJ, IMIV, Orsay, France

2360. Feasibility of Renal Perfusion Imaging Using Velocity Selective ASL

Marijn van Stralen[1], Margreet F. Sanders[2], Hanke J. Schalkx[3], Maurice A. van den Bosch[3], Clemens Bos[1], Peter J. Blankestijn[2], Tim Leiner[3], Esben Thade Petersen[3]
[1]Image Sciences Institute, UMC Utrecht, Utrecht, Netherlands; [2]Dept of Nephrology, UMC Utrecht, Utrecht, Netherlands; [3]Dept of Radiology, UMC Utrecht, Utrecht, Netherlands

2361. Whole Brain Measurement of Dynamics of Arterial Spin Labeling Using Multi-Band Look-Locker Technique in Hypertension

Yoojin Lee[1], Tae Kim[1]
[1]Department of Radiology, University of Pittsburgh, Pittsburgh, PA, United States

2362. Dual Temporal Resolution DCE-MRI Reveals Increased Blood-Brain Barrier Leakage in Cerebral Small Vessel Disease

Sau May Wong[1], Eleana Zhang[2], Harm J. van de Haar[1], Julie E.A. Staals[2], Cécile R.L.P.N. Jeukens[1], Paul A.M. Hofman[1], Robert J. van Oostenbrugge[2], Jacobus F.A. Jansen[1], Walter H. Backes[1]
[1]Radiology, Maastricht University Medical Center, Maastricht, Limburg, Netherlands; [2]Neurology, Maastricht University Medical Center, Maastricht, Limburg, Netherlands

2363. Effect of Ketamine and Isoflurane Anesthesia on Regional Cerebral Blood Flow of Macaque Monkeys

Chun-Xia Li[1], Doty Kempf[1], Leonard Howell[1], Xiaodong Zhang[1]
[1]Yerkes Imaging Center, Yerkes National Primate Research Center, Emory University, Atlanta, GA, United States

2364. Effect of Long-Duration Isoflurane Administration on Regional Cerebral Blood Flow

Chun-Xia Li[1], Sudeep Patel[1], Xiaodong Zhang[1]
[1]Yerkes Imaging Center, Yerkes National Primate Research Center, Emory University, Atlanta, GA, United States

2365. MRI Based Quantification of Cortical Responses to Exercise

Andrew P. Hale[1], Charlotte E. Buchanan[1], Johannes van Lieshout[2], Penny A. Gowland[1], Paul L. Greenhaff[3], Sue T. Francis[1]
[1]Sir Peter Mansfield Imaging Centre, University of Nottingham, Nottingham, United Kingdom; [2]School of Biomedical Sciences, University of Nottingham, Nottingham, United Kingdom; [3]Faculty of Medicine & Health Sciences, University of Nottingham, Nottingham, United Kingdom

2366. Cerebral Blood Flow and Metabolism in Patients with Sickle Cell Disease

Adam Bush[1], Matthew Borzage[1], Thomas Coates[1], John Wood[1]
[1]Children's Hospital Los Angeles USC, Los Angeles, CA, United States

2367. Evaluation of Random Vessel-Encoded ASL in Both Healthy Subjects and Stroke Patients

Lirong Yan[1], Songlin Liu[1], Jia Guo[2], David S. Liebeskind[1], Jeffrey L. Saver[1], Noriko Salamon[3], Neal Yao[1], Sunil Sheth[1], Conrad Liang[1], Eric C. Wong[2], Danny JJ Wang[1]
[1]Neurology, UCLA, Los Angeles, CA, United States; [2]UCSD, San Diego, CA, United States; [3]Radiology, UCLA, Los Angeles, CA, United States

2368. Diagnosis of Schizophrenia Using CBF Measures as a Classification Feature – a FBIRN Phase 3 Multisite ASL Study at 3T

David Shin[1], Burak Ozyurt[1], Jerod Rasmussen[2], Juan Bustillo[3], Theodorus Van Erp[2], Jatin Vaidya[4], Daniel Mathalon[5], Bryon Mueller[6], James Voyvodic[7], Douglas Greve[8], Judith Ford[5], Gary Glover[9], Gregory Brown[1], Steven Potkin[2], Thomas Liu[1]
[1]University of California, San Diego, La Jolla, CA, United States; [2]University of California, Irvine, Irvine, CA, United States; [3]University of New Mexico, Albuquerque, NM, United States; [4]University of Iowa, Iowa City, IA, United States; [5]University of California, San Francisco, San Francisco, CA, United States; [6]University of Minnesota, Twin Cities, Minneapolis, MN, United States; [7]Duke University, Durham, NC, United States; [8]Harvard Medical School, Massachusetts General Hospital, Charlestown, MA, United States; [9]Stanford University, Stanford, CA, United States

2369. Non-Contrast Indirect MRI Quantification of Portal Hypertension Severity

ISMRM MERIT AWARD magna cum laude

Daniel Aguirre-Reyes[1, 2], Juan P. Arab[3], Marco Arrese[3], Rodrigo Tejos[3], Pablo Irarrazaval[1], Cristian Tejos[1], Sergio Uribe[4], Marcelo E. Andia[4]
[1]Biomedical Imaging Center - Electrical Engineering Department, Pontificia Universidad Catolica de Chile, Santiago, Region Metropolitana, Chile; [2]Computational Sciences and Electronic Department, Universidad Tecnica Particular de Loja, Loja, Ecuador; [3]Gastroenterology Department, School of Medicine, Pontificia Universidad Catolica de Chile, Santiago, Chile; [4]Radiology Department, School of Medicine, Pontificia Universidad Catolica de Chile, Santiago, Chile

Traditional Poster
Pulse Sequences - Spectroscopy

Exhibition Hall Wednesday 16:00-18:00

2370. Ultra-High Resolution 3D ^{1}H-MRSI of the Brain: Subspace-Based Data Acquisitions and Processing

Fan Lam[1], Bryan Clifford[1], Chao Ma[2], Curtis L. Johnson[2], Zhi-Pei Liang[1]
[1]Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]Beckman Institute, University of Illinois at Urbana-Champaign, Urbana, IL, United States

2371. Acceleration of Chemical-Shift Imaging by Applying True 3D Compressed Sensing

Jian-Xiong Wang[1, 2], Matthew E. Merritt[1, 2], A Dean Sherry[1, 2], Craig R. Malloy[1, 2]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Department of Radiology, University of Texas Southwestern Medical Center, Dallas, TX, United States

2372. Fast Sodium MRI of the Human Brain Using a Balanced Steady-State Free Precession Sequence

Ruomin Hu[1], Simon Konstandin[2], Lothar R. Schad[1]
[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Baden-Württemberg, Germany; [2]MR-Imaging and Spectroscopy, University of Bremen, Bremen, Germany

2373. SPatiotemporal ENcoded Spectroscopic Imaging (SPENSI) a New Approach for Multi & Single Scan Spectral Imaging

Amir Seginer[1], Rita Schmidt[1], Lucio Frydman[1]
[1]Chemical Physics Department, Weizmann Institute of Science, Rehovot, Israel

2374. Model-Based Reconstruction of Hyperpolarized [1-^{13}C]-Pyruvate
James Bankson[1], Christopher Walker[1], Wolfgang Stefan[1], David Fuentes[2], Matthew Merritt[3], Yunyun Chen[4], Craig Malloy[3], Dean Sherry[3], Stephen Lai[4], John Hazle[1]
[1]Department of Imaging Physics, UT MD Anderson Cancer Center, Houston, TX, United States; [2]UT MD Anderson Cancer Center, Department of Imaging Physics, Houston, TX, United States; [3]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States; [4]Department of Head & Neck Surgery, UT MD Anderson Cancer Center, Houston, TX, United States

2375. Efficient Detection of Bound Potassium and Sodium Using TQTPPI Pulse Sequence
Victor D. Schepkin[1], Boris M. Odintsov[2], Ilya Litvak[1], Peter L. Gor'kov[1], William W. Brey[1], Andreas Neubauer[3], Thomas F. Budinger[4]
[1]NHMFL/FSU, Tallahassee, FL, United States; [2]UIUC, IL, United States; [3]Heidelberg University, Germany; [4]LBNL/UCB, CA, United States

Traditional Poster
B1 Imaging
Exhibition Hall Wednesday 16:00-18:00

2376. Transmit Field Estimation from K-Space Data
Yu Ding[1], Jinghua Wang[2]
[1]Dorothy M. Davis Heart and Lung Research Institute, The Ohio State University, Columbus, OH, United States; [2]Center for Cognitive and Behavioral Brain Imaging, The Ohio State University, Columbus, OH, United States

2377. Slice Profile Corrections in the XFL (Magnetization-Prepared Turbo-FLASH) B1-Mapping Sequence
Alexis Amadon[1], Franck Mauconduit[2], Alexandre Vignaud[3], Nicolas Boulant[3]
[1]I2BM / NeuroSpin / UNIRS, CEA , Gif-sur-Yvette, France, France; [2]Siemens Healthcare, Saint-Denis, France, France; [3]I2BM / NeuroSpin / UNIRS, CEA, Gif-sur-Yvette, France, France

2378. Fast 3D Algorithm for Coil Localization as an Aid in Estimation of B1 Distribution
Parnian Zarghamravanbakhsh[1], John M. Pauly[1], Greig Scott[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States

2379. *In Vivo* Comparison of B1 Mapping Techniques for Hip Joint Imaging at 7 Tesla
Oliver Kraff[1], Andrea Lazik[1, 2], Daniel Brenner[3], Desmond H.Y. Tse[4, 5], Qi Duan[6], Soeren Johst[1], Harald H. Quick[1, 7], Mark E. Ladd[1, 8]
[1]Erwin L. Hahn Institute for MRI, University Duisburg-Essen, Essen, Germany; [2]Diagnostic and Interventional Radiology and Neuroradiology, University Hospital Essen, Germany; [3]German Center for Neurodegenerative Diseases (DZNE), Bonn, Germany; [4]Neuropsychology and Psychopharmacology, Maastricht University, Netherlands; [5]Radiology, Maastricht University MC, Netherlands; [6]Adv. MRI Section, LFMI, NINDS, National Institutes of Health, MD, United States; [7]Highfield and Hybrid MR Imaging, University Hospital Essen, Germany; [8]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Germany

2380. Optimal Flip Angle and Signal Shaping for Single-Shot Volumetric DREAM B_1 Mapping
ISMRM MERIT AWARD summa cum laude
Rüdiger Stirnberg[1], Daniel Brenner[1], Tony Stöcker[1, 2]
[1]German Center for Neurodegenerative Diseases (DZNE), Bonn, Germany; [2]Department of Physics and Astronomy, University of Bonn, Bonn, Germany

2381. Robust Implementation of 3D Bloch Siegert B1 Mapping
Andreas Lesch[1], Andreas Petrovic[1], Rudolf Stollberger[1]
[1]Department for Medical Engineering, Graz University of Technology, Graz, Styria, Austria

2382. Fast Low-Angle B1 Mapping
Caroline Le Ster[1, 2], Giulio Gambarota[1], Eric Brillet[3], Olivier Beuf[4], Hervé Saint-Jalmes[1, 5]

[1]INSERM UMR 1099, Université de Rennes 1, Rennes, France; [2]Siemens Healthcare, Saint-Denis, France; [3]Department of Imaging, Rennes University Hospital, Rennes, France; [4]Université de Lyon, CREATIS, CNRS UMR 5220, INSERM U1044, INSA-Lyon, Université Lyon 1, Villeurbanne, France; [5]Centre Eugène Marquis, CRLCC, Rennes, France

2383. Spin Echo B1+ Mapping in High Susceptibility Tissues
Eamon Doyle[1, 2], Jonothan Chia[3], Krishna Nayak, [14], John C. Wood, [12]
[1]Biomedical Engineering, University of Southern California, Los Angeles, CA, United States; [2]Cardiology, Children's Hospital of Los Angeles, Los Angeles, CA, United States; [3]Philips Healthcare, Cleveland, OH, United States; [4]Electrical Engineering, University of Southern California, Los Angeles, CA, United States

2384. Comparing Bloch-Siegert B1+ Mapping Using Single Channel and Channel Combination Tx Methods
Mohammad Mehdi Khalighi[1], Gaohong Wu[2], Qin Liu[2]
[1]Applied Science Lab, GE Healthcare, Menlo Park, CA, United States; [2]MR Engineering, GE Healthcare, Waukesha, WI, United States

2385. Characterizing *In Vivo* B1 Maps at 7T Using the Kolmogorov-Smirnov Test
Douglas A C Kelley[1]
[1]Neuro Apps and Workflow, GE Healthcare, San Francisco, CA, United States

2386. B1 Mapping of the Breast with a Reference Tissue Method
Federico D. Pineda[1], Milica Medved[1], Xiaobing Fan[1], Gregory Karczmar[1]
[1]Radiology, The University of Chicago, Chicago, IL, United States

Traditional Poster
RF Pulse Design

Exhibition Hall Wednesday 16:00-18:00

ISMRM MERIT AWARD magna cum laude

2387. 2-Spoke Placement Optimization Under Explicit SAR and Power Constraints in Parallel Transmission at Ultra-High Field
Laura Dupas[1], Aurélien Massire[1], Alexis Amadon[1], Alexandre Vignaud[1], Nicolas Boulant[1]
[1]NeuroSpin, CEA, Saclay, Ile de France, France

2388. Does the Best Distance Beween 2 Spokes Match the Inverse RF Wavelength ?
Alexis Amadon[1], Laura Dupas[2], Alexandre Vignaud[2], Nicolas Boulant[2]
[1]I2BM / NeuroSpin / UNIRS, CEA , Gif-sur-Yvette, France, France; [2]I2BM / NeuroSpin / UNIRS, CEA, Gif-sur-Yvette, France, France

2389. Off-Resonance Compensated Velocity Selective RF Pulse Design for Reducing Signal Dropout in Vessel Wall Imaging
Yunduo Li[1], Shuo Chen[1], Zechen Zhou[1], Rui Li[1], Chun Yuan[1, 2]
[1]Center for Biomedical Imaging Research, Beijing, China; [2]Department of Radiology, University of Washington, Seattle, WA, United States

2390. Parallel 2D Excitation of Thin Limited Slice Profiles
Denis Kokorin[1], Jürgen Hennig[1], Maxim Zaitsev[1]
[1]Department of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany

2391. Hybrids of Static and Dynamic RF Shimming for Body Imaging at 7T
Martina Flöser[1, 2], Andreas Bitz[1], Sören Jost[2], Stephan Orzada[2], Marcel Gratz[2], Oliver Kraff[2], Mark Ladd[1, 2]

[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany; [2]Erwin L. Hahn Institute for MRI, University Duisburg-Essen, Essen, Germany

2392. Influence of 2-Spoke Pulses K-Space Placement in Different Optimization Strategies and Cost Functions
Laura Dupas[1], Alexis Amadon[1], Aurélien Massire[1], Alexandre Vignaud[1], Nicolas Boulant[1]
[1]NeuroSpin, CEA, Saclay, Ile de France, France

2393. Slice-Selective Adiabatic T2 Preparation Using a Modified STABLE Pulse
Hadrien Dyvorne[1], Priti Balchandani[1]
[1]Radiology, Icahn School of Medicine at Mount Sinai, New York, NY, United States

2394. Multiband Arbitrary-Phase SLR RF Pulse with Generalized Flip Angle Via Convex Optimization
Hong Shang[1, 2], Peder E.Z. Larson[1, 2], Adam B. Kerr[3], Galen Reed[4], Adam Elkhaled[1, 2], Jeremy W. Gordon[1], Cornelius von Morze[1], Michael Lustig[5], Daniel B. Vigneron[1]
[1]Radiology and Biomedical Imaging, UCSF, San Francisco, CA, United States; [2]UCSF-UC Berkeley Graduate Program in Bioengineering, San Francisco/Berkeley, CA, United States; [3]Electrical Engineering, Stanford University, Stanford, CA, United States; [4]HeartVista, Menlo Park, CA, United States; [5]Electrical Engineering and Computer Science, UC Berkeley, Berkeley, CA, United States

2395. Design and Optimization of Fast Imaging Pulse Sequences Using Optimal Control Theory.
Oleksandr Khegai[1], Jiun-Jie Wang[2], Steffen J. Glaser[3], Florian Wiesinger[4]
[1]Healthy Aging Research Center, Chang Gung University, Taipei, Taiwan; [2]Department of Medical Imaging and Radiological Sciences, Chang Gung University, Taipei, Taiwan; [3]Department of Chemistry, Technische Universität München, Munich, Germany; [4]Diagnostics and Biomedical Technologies Lab, GE Global Research Europe, Munich, Germany

2396. Fully-Refocused SPatio-Temporal ENcoding (SPEN) MRSI Using Fourier-Encoding Polychromatic Spectral Pulses
Zhiyong Zhang[1, 2], Lucio Frydman[1]
[1]Chemical Physics Department, Weizmann Institute of Science, Rehovot, Israel; [2]Department of Electronic Science, Xiamen University, Xiamen, Fujian, China

2397. SAR Reduced Excitation by Joint Design of RF Pulse and Slice Selective Gradient Shape
Christoph Stefan Aigner[1], Christian Clason[2], Armin Rund[3], Rudolf Stollberger[1]
[1]Institute of Medical Engineering, Graz University of Technology, Graz, Austria; [2]Faculty of Mathematics, University of Duisburg-Essen, Essen, Germany; [3]Institute for Mathematics and Scientific Computing, University of Graz, Graz, Austria

2398. Optimized Amplitude Modulated Multi-Band RF Pulses
Shaihan J. Malik[1, 2], Anthony N. Price[2], Joseph V. Hajnal[1, 2]
[1]Division of Imaging Sciences and Biomedical Engineering, Kings College London, London, United Kingdom; [2]Centre for the Developing Brain, Kings College London, London, United Kingdom

2399. SLR Pulse Implementation in Multi-Slice 2D FLASH Pulse Sequence for 3T MRI and Beyond
A Alhamud[1], Jay Moore[2], Neal Derman[1], Ernesta Meintjes[1], Marcin Jankiewicz[1]
[1]Human Biology,MRC/UCT Medical Imaging Research Unit, University of Cape Town, Cape Town, Western Cape, South Africa; [2]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States

2400. Rapid 3D-FFE MR Image Acquisition Using Aliased K-Space Acquisitions
Indrajit Saha[1], Rakesh Kumar Gupta[2]
[1]Philips Healthcare, Philips India Ltd, Gurgaon, Haryana, India; [2]fortis memorial research institute, Gurgaon, India

2401. Contrast Variation in UTE Imaging with Very Short RF Pulse Duration
Chanhee Lee[1], Soon Ho Yoon[2], Jin Mo Goo[2], Jang-Yeon Park[1]
[1]Biomedical Engineering, IBS Center for Neuroscience Imaging Research, Sungkyunkwan University, Suwon, Gyeonggi, Korea; [2]Radiology, Seoul National University College of Medicine, Seoul, Korea

2402. Steady-State Imaging with 3D Inner Volume Excitation
Hao Sun[1], Jeffrey A. Fessler[1], Douglas C. Noll[2], Jon-Fredrik Nielsen[2]
[1]Electrical Engineering and Computer Science, University of Michigan, Ann Arbor, MI, United States; [2]Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States

Traditional Poster
Multi-Band MRI

Exhibition Hall Wednesday 16:00-18:00

ISMRM MERIT AWARD magna cum laude

2403. Multiband Imaging Method for Metal Artifact Correction with 3D Multi-Spectral Imaging
JaeJin Cho[1], Dongchan Kim[1], Hyunseok Seo[1], HyunWook Park[1]
[1]Department of Electrical Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Chungcheong, Korea

2404. A Multi-Band Spatial Spectral Selective Excitation RF Design
Yajun Ma[1], Bing Wu[2], Wentao Liu[1], Weinan Tang[1], Jia-Hong Gao[1]
[1]Center for MRI, Peking University, Beijing, China; [2]GE Healthcare MR Research China, Beijing, China

2405. caipirinha Using the RF Pulse Modulation with Random Phase for Multiband Imaging
Changheun Oh[1], Dongchan Kim[1], HyunWook Park[1]
[1]Korea advanced institute of science and technology, Daejeon, Korea

2406. Pre-Scan with Half-Sized Phase Encoding Blips Reducing Ghost and Slice Leakage Artifacts in Dual-Band EPI
Hiroshi Toyoda[1], Naoya Yuzuriha[2], Sosuke Yoshinaga[2], Hiroaki Terasawa[2]
[1]Center for Information and Neural Networks, National Institute of Information and Communications Technology, Suita, Osaka, Japan; [2]Department of Structural BioImaging, Kumamoto University Graduate school of Pharmaceutical Sciences, Kumamoto, Japan

2407. Hadamard and Sensitivity Encoding (H-SENSE) for Simultaneous Multi-Slice MR Imaging
Jong-Min Kim[1], Junyong Park[2], Chulhyun Lee[2], Chang-Hyun Oh[1]
[1]Electronic and information engineering, Korea University, Seongbuk-Gu, Seoul, Korea; [2]The MRI Team, Korea Basic Science Institute, Chungchungbuk-Do, Korea

2408. A GRAPPA Reconstruction for Simultaneous Multi-Slice Radial Acquisition
Weiran Deng[1], Kyoko Fujimoto[1], V. Andrew Stenger[1]
[1]University of Hawaii JABSOM, Honolulu, HI, United States

2409. Ghost-Correcting SENSE Reconstruction for Multi-Band EPI
Franciszek Hennel[1], Aline Seuwen[1], Constantin von Deuster[1], Klaas P. Pruessmann[1]
[1]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland

2410. 2D-SENSE-GRAPPA for Fast, Ghosting-Robust Reconstruction of In-Plane and Slice Accelerated Blipped-CAIPI-EPI
Peter Jan Koopmans[1], Benedikt A. Poser[2], Felix A. Breuer[3]
[1]FMRIB Centre, University of Oxford, Oxford, United Kingdom; [2]Faculty of Psychology and Neuroscience, Maastricht University, Maastricht, Netherlands; [3]Research Center Magnetic Resonance Bavaria, Wurzburg, Germany

2411. Multi-Band PROPELLER Imaging with Auto-Calibration
Mengye Lyu[1, 2], Yilong Liu[1, 2], Victor B. Xie[1, 2], ErPeng Dai[3], Hua Guo[3], Ed X. Wu[1, 2]
[1]Laboratory of Biomedical Imaging and Signal Processing, The University of Hong Kong, Hong Kong, HKSAR, China; [2]Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, HKSAR, China; [3]Center for Biomedical Imaging Research, Tsinghua University, Beijing, China

2412. Dynamic Compressed Sensing for Multiband MRI
Huisu Yoon[1], Dong-wook Lee[1], Juyoung Lee[1], Seung Hong Choi[2], Sung-Hong Park[1], Jong Chul Ye[1]
[1]Dept. of Bio and Brain Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Korea; [2]Dept. of Radiology, Seoul National University College of Medicine, Seoul, Korea

Traditional Poster
Parallel Imaging

Exhibition Hall Wednesday 16:00-18:00

2413. Iterative GRAPPA Using Wiener Filter
Wan Kim[1], Yihang Zhou[1]
[1]The State University of New York at Buffalo, Buffalo, NY, United States

2414. Single-Slab 3D TSE with CAIPIRINHA Acquisition Mode
Zhang Qiong[1], Sun Zhi guo[1], Liu Wei[1]
[1]Siemens, ShenZhen, GuangDong, China

2415. Fast G-Factor Estimation in Multi-Band Acquisition Based on Sum of Inverse Distance Model
Mengye Lyu[1, 2], Victor B. Xie[1, 2], Patrick P. Gao[1, 2], Yilong Liu[1, 2], Ed X. Wu[1, 2]
[1]Laboratory of Biomedical Imaging and Signal Processing, The University of Hong Kong, Hong Kong, China; [2]Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, China

2416. Dual Asymmetric Echo Steady State Imaging with CAIPIRINHA Acquisition Mode
Zhang Qiong[1], Sun Zhi guo[1]
[1]Siemens, Shen Zhen, Guang Dong, China

2417. Automatic Coil Compression for Parallel MRI Based on Noise Variance Estimation
Allan Raventos[1], Tao Zhang[1], John M. Pauly[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States

2418. Parallel MRI Reconstruction by Direct Convex Optimization
Cishen Zhang[1], Ifat-Al Baqee[1]
[1]Swinburne University of Technology, Hawthorn, Victoria, Australia

2419. Effects of Motion on Coupling of Coil Elements and Parallel Imaging Reconstruction at 3T and 7T
Qiyuan Tian[1], Enhao Gong[1], Christoph W.U. Leuze[2], John Pauly[1], Jennifer McNab[2]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Radiology, Stanford University, Stanford, CA, United States

2420. Investigation of GRAPPA G-Factor Dependence on Calibration Scan Phase Errors and SNR
S. L. Talagala[1], J. E. Sarlls[1], S. J. Inati[2]

[1]NMRF/NINDS, National Institutes of Health, Bethesda, MD, United States; [2]FMRIF/NIMH, National Institutes of Health, Bethesda, MD, United States

2421. Parallel Magnetic Resonance Imaging Via Dictionary Learning
Shanshan Wang[1, 2], Xi Peng[1], Jianbo Liu[1], Yuanyuan Liu[1], Pei Dong[2], Dong Liang[1]
[1]Paul C. Lauterbur Research Centre for Biomedical Imaging, Chinese Academy of Sciences, Shenzhen, GuangDong, China; [2]School of Information Technologies, University of Sydney, Sydney, New South Wales, Australia

2422. Smallest Singular Value: A Metric for Assessing K-Space Sampling Patterns
Andrew T. Curtis[1], Christopher K. Anand[1]
[1]Computing and Software, McMaster University, Hamilton, Ontario, Canada

2423. STEP: Self-Supporting Tailored K-Space Estimation for Parallel Imaging Reconstruction
Zechen Zhou[1], Jinnan Wang[2, 3], Niranjan Balu[3], Rui Li[1], Chun Yuan[1, 3]
[1]Center for Biomedical Imaging Research, Department of Biomedical Engineering, School of Medicine, Tsinghua University, Beijing, China; [2]Philips Research North America, Briarcliff Manor, NY, United States; [3]Vascular Imaging Lab, Department of Radiology, University of Washington, Seattle, WA, United States

2424. Highly Accelerated 3D Parallel Imaging with Transitional Auto-Calibration (3D-PITA)
Ren He[1], Jingyuan Lyu[1], Leslie Ying[2]
[1]Department of Electrical Engineering, University at Buffalo, Buffalo, NY, United States; [2]Department of Electrical Engineering, Department of Biomedical Engineering, University at Buffalo, Buffalo, NY, United States

2425. Generalized Direct Virtual Coil (DVC) with SPIRiT Kernel for Arbitrary Sampling Pattern
Yuxin Hu[1], Tao Zhang[2], Kui Ying[3], John M. Pauly[2]
[1]Biomedical Engineering, Tsinghua University, Beijing, China; [2]Electrical Engineering, Stanford University, CA, United States; [3]Engineering Physics, Tsinghua University, China

2426. Considerations for Parallel Imaging When Using High Permittivity Pads in the Thighs at 3 T
Wyger Brink[1], Maarten J. Versluis[1, 2], Johannes M. Peeters[2], Peter Börnert[1, 2], Andrew Webb[1]
[1]Radiology, Leiden University Medical Center, Leiden, Netherlands; [2]Philips Healthcare, Best, Netherlands

2427. Anatomically Constrained Magnetic Resonance Inverse Imaging for Human Brain
Kevin Wen-Kai Tsai[1, 2], Fa-Hsuan Lin[3]
[1]Department of Biomedical Engineering and Computational Science, Aalto University School of Science, Espoo, Finland; [2]Brain Research Unit (BRU), Low Temperature Laboratory, Aalto University School of Science, Espoo, Finland; [3]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan

2428. Sensitivity Improvement Under Parallel Detection in CW-EPR Imaging
Ayano Enomoto[1], Hiroshi Hirata[1]
[1]Division of Bioengineering and Bioinformatics, Hokkaido University, Sapporo, Hokkaido, Japan

2429. COMPASS – Guiding Reconstruction with Parallel MRI Signal Structure
Yudong Zhu[1]
[1]Zhu Consulting, Scarsdale, NY, United States

2430. AC-LORAKS: Autocalibrated Low-Rank Modeling of Local K-Space Neighborhoods
Justin P. Haldar[1]

[1]Electrical Engineering, University of Southern California, Los Angeles, CA, United States

2431. KerNL: Parallel Imaging Reconstruction Using Kernel-Based NonLinear Method
Jingyuan Lyu[1], Yihang Zhou[1], Ukash Nakarmi[1], Chao Shi[1], Leslie Ying, [12]
[1]Department of Electrical Engineering, State University of New York at Buffalo, Buffalo, NY, United States; [2]Department of Biomedical Engineering, State University of New York at Buffalo, Buffalo, NY, United States

2432. A Theory for Sampling in K-Space - Parallel Imaging as Approximation in a Reproducing Kernel Hilbert Space
Vivek Athalye[1], Michael Lustig[1], Martin Uecker[1]
[1]Electrical Engineering and Computer Sciences, University of California, Berkeley, Berkeley, CA, United States

2433. Clinical Feasibility of Accelerated TOF MR Angiography with Sparse Undersampling and Iterative Reconstruction: Comparison with Conventional Parallel Imaging
Takayuki YAMAMOTO[1], Koji FUJIMOTO[1], Tomohisa OKADA[1], Yasutaka FUSHIMI[1], Akira YAMAMOTO[1], Aurelien F. STALDER[2], Yutaka NATSUAKI[3], Michaela SCHMIDT[2], Kaori TOGASHI[1]
[1]Diagnostic Imaging and Nuclear Medicine, Graduate School of Medicine, Kyoto University, Kyoto, Japan; [2]Siemens Healthcare, Erlangen, Germany; [3]Siemens Medical Solutions USA, Inc, PA, United States

2434. Ultra Short Echotime MRI to Locate Foreign Objects: Initial Phantom Results
Karl-Heinz Herrmann[1], Anusch Mheryan, Martin Stenzel, Hans-Joachim Mentzel, Ulf Teichgräber, Jürgen R. Reichenbach[1]
[1]Medical Physics Group, Institute of Diagnostic and Interventional Radiology, Jena University Hospital - Friedrich Schiller University Jena, Jena, Germany

2435. SNR-Efficient Anisotropic 3D Ultra-Short Echo Time Sequence for Sodium MRI with Retrospective Gating
Simon Konstandin[1], Matthias Günther[1, 2]
[1]MR-Imaging and Spectroscopy, Faculty 01 (Physics/Electrical Engineering), University of Bremen, Bremen, Germany; [2]Fraunhofer MEVIS, Bremen, Germany

2436. T_2-Selective Excitation with UTE Imaging for Bone Imaging
Ethan M. Johnson[1], Urvi Vyas[2], Kim Butts Pauly[2], John M. Pauly[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Radiology, Stanford University, Stanford, CA, United States

2437. Anisotropic Field-Of-View Support for Golden Angle Radial Imaging
Ziyue Wu[1], Krishna S. Nayak[1]
[1]University of Southern California, Los Angeles, CA, United States

2438. Gradient-Modulated PETRA
Naoharu Kobayashi[1], Luning Wang[1], Michael Garwood[1]
[1]Center for Magnetic Resonance Research, Department of Radiology, University of Minnesota, Minneapolis, MN, United States

2439. Segmented Golden Ratio Radial Reordering for Dynamic Cardiac MRI with Variable Temporal Resolution
Fei Han[1], Ziwu Zhou[1], Stanislas Rapacchi[1], Paul Finn[1], Peng Hu[1]
[1]Radiology, David Geffen School of Medicine at UCLA, Los Angeles, CA, United States

2440. 3D Through Time GRAPPA for Dynamic Distributed Spirals
Dallas C. Turley[1], Jim Pipe[1]
[1]Imaging Research, Barrow Neurological Institute, Phoenix, AZ, United States

2441. CODEC: Covariance-Driven Parallel Imaging for NonCartesian Sampling Trajectories
James G . Pipe[1]
[1]Imaging Research, Barrow Neurological Institute, Phoenix, AZ, United States

2442. Rapid 3D Spoiled Steady-State Imaging with Yarn-Ball Acquisition
Robert W. Stobbe[1], Christian Beaulieu[1]
[1]University of Alberta, Edmonton, Alberta, Canada

2443. Density-Adapted Spiral MRI Sequence for ^{23}Na Imaging
Maria Engel[1], Nadia Benkhedah[1], Armin M. Nagel[1]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

2444. A Spiral Spin-Echo Sequence for Fast T2-Weighted Imaging with Improved Contrast
Zhiqiang Li[1], Dinghui Wang[1], John P. Karis[2], James G. Pipe[1]
[1]Imaging Research, Barrow Neurological Institute, Phoenix, AZ, United States; [2]Neuroradiology, Barrow Neurological Institute, Phoenix, AZ, United States

2445. Analytic Form 3D Radial Sampling Strategy for Maintaing the Uniformity of K-Space Coverage with Increasing Interleaves
Jinil Park[1], Tae-Hoon Shin[2], Jang-Yeon Park[1]
[1]Biomedical Engineering, IBS Center for Neuroscience Imaging Research, Sungkyunkwan University, Suwon, Gyungki-do, Korea; [2]Diagnostic Radiology and Nuclear Medicine, University of Maryland, Baltimore, MD, United States

2446. *In-Vivo* Brain Fast Rosette Spectroscopic Imaging (RSI) with Reduced Gradient Demands/improved Patient Comfort and a Processing Pipeline with Automated LCModel Quantification, for All Acquired Voxels
Claudiu Schirda[1], Tiejun Zhao[2], Ovidiu Andronesi[3], James Mountz[1], Fernando Boada[1], Hoby Hetherington[1]
[1]Radiology, University of Pittsburgh School of Medicine, Pittsburgh, PA, United States; [2]Siemens Medical Solutions, Pittsburgh, PA, United States; [3]Radiology, Massachusetts General Hospital, Boston, MA, United States

ISMRM MERIT AWARD magna cum laude

2447. Single-Shot Spiral Imaging Using the Gradient Impulse Response for Trajectory Prediction
Signe Johanna Vannesjo[1], Nadine N. Graedel[2], Lars Kasper[1], Simon Gross[1], Christoph Barmet[1, 3], Klaas P. Pruessmann[1]
[1]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [2]FMRIB Centre, University of Oxford, Oxford, United Kingdom; [3]Skope Magnetic Resonance Technologies, Zurich, Switzerland

2448. Dynamic Volumetric MRI Using Golden-Angle Variable Density Spiral Acquisition with Sparse Parallel Imaging Reconstruction
Lyu Li[1], Xiaodong Ma[1], Pascal Spincemaille[2], Yi Wang[2, 3], Huijun Chen[1], Hua Guo[1]
[1]Center for Biomedical Imaging Research, Department of Biomedical Engineering, School of Medicine, Tsinghua University, Beijing, China; [2]Radiology, Weill Cornell Medical College, NY, United States; [3]Biomedical Engineering, Cornell University, NY, United States

2449. L1-ESPIRiT Reconstruction for Accelerating 3D UTE and Denoising
Wenwen Jiang[1], Frank Ong[2], Roland Henry[3], Michael Lustig[2], Peder E.Z. Larson[3]
[1]Bioengineering, UC Berkeley/UCSF, Berkeley, CA - California, United States; [2]EECS, UC Berkeley, Berkeley, CA, United States; [3]Radiology and Biomedical Imaging, UCSF, San Francisco, CA - California, United States

2450. Proton-Constrained $CMRO_2$ Quantification with Direct ^{17}O-MRI at 3 Tesla
Dmitry Kurzhunov[1], Robert Borowiak, [12], Philipp Wagner[1], Marco Reisert[1], Michael Bock[1]
[1]Department of Radiology · Medical Physics, University Medical Center Freiburg, Freiburg, Baden-Württemberg, Germany; [2]German Cancer Consortium (DKTK), German Cancer Research Center (DKFZ),, Heidelberg, Baden-Württemberg, Germany

2451. Comparison of Pre-Reconstruction Interpolation Methods for Rapid Compressed Sensing Reconstruction of Non-Cartesian *k*-Space
KC Erb[1], Ganesh Adluru[1], Srikant Kamesh Iyer[1], Devavrat Likhite[1], John A. Roberts[1], Edward DiBella[1]
[1]UCAIR, University of Utah, Salt Lake City, UT, United States

2452. Density Compensation for Iterative Reconstruction from Under-Sampled Radial Data
Boris Mailhe[1], Qiu Wang[1], Robert Grimm[2], Marcel Dominik Nickel[2], Kai Tobias Block[3], Hersh Chandarana[3], Mariappan S. Nadar[1]
[1]Imaging and Computer Vision, Siemens Corporation, Corporate Technology, Princeton, NJ, United States; [2]MR Application & Workflow Development, Siemens Healthcare, Erlangen, Germany; [3]Department of Radiology, New York University School of Medicine, New York, NY, United States

Traditional Poster
Encoding & Reconstruction

Exhibition Hall Wednesday 16:00-18:00

2453. CAIPIRINHA Acceleration Enables Rapid High-Spatial-Resolution Isotropic 3D SPACE of the Knee: Comparison with Conventional SPACE and 2D TSE
Esther Raithel[1], Gaurav Thawait[2], Shivani Ahlawat[2], Shadpour Demehri[2], Zhang Qiong[3], Jan Fritz[2]
[1]Siemens AG, Healthcare Sector, Erlangen, Bavaria, Germany; [2]Russell H. Morgan Department of Radiology and Radiological Science, Johns Hopkins University School of Medicine, MD, United States; [3]Siemens AG, Guang Dong, China

ISMRM MERIT AWARD summa cum laude

2454. Rapid Fast Field-Cycling MRI Using Keyhole Imaging
Peter James Ross[1], David J. Lurie[1]
[1]Aberdeen Biomedical Imaging Centre, University of Aberdeen, Aberdeen, Aberdeen City, United Kingdom

2455. Robust and Automatic Polarity Determination for Phase-Sensitive Inversion Recovery (PSIR) Imaging
Deqing Chen[1], Weiguo Zhang[1]
[1]Shanghai United Imaging Healthcare Co. Ltd., Shanghai, China

2456. An Integrated Approach of Interactive Land-Marking and Auto Coil Detection
Jia Guo[1], Yongchuan Lai[1], Xiaocheng Wei[1], Nan Cao[1], Bing Wu[1]
[1]GE Healthcare, Beijing, China

2457. Acquisition and Reconstruction Effects on Image Quality in Variable-Density Sparse MRI
Dimitris Mitsouras[1], Onur Afacan[2], Robert V. Mulkern[3], Dana H. Brooks[4]
[1]Radiology, BWH/Harvard Medical School, Boston, MA, United States; [2]Children's Hospital Boston, MA, United States; [3]Childrens' Hospital Boston, MA, United States; [4]Northeastern University, Boston, MA, United States

ISMRM MERIT AWARD magna cum laude

2458. Optimal Spread Spectrum for Enhanced Multi-Receive Compressed Sensing MRI
Sulaiman A. Al Hasani[1], Gary F. Egan[2], Jingxin Zhang[3]
[1]Electrical and Computer Systems Engineering, Monash University, clayton, VIC, Australia; [2]Monash Biomedical Imaging, Monash University, VIC, Australia; [3]School of Software and Electrical Engineering, Swinburne University of Technology, VIC, Australia

2459. Image Reconstruction of Under-Sampled Signal at Equal Interval Using Quadratic Phase Scrambling
Satoshi Ito[1], Shungo Yasaka[1], Yoshifumi Yamada[1]
[1]Utsunomiya University, Utsunomiya, Tochigi, Japan

2460. Improved Partial Fourier Reconstruction Using Two Reverse Polarity Echoes in a Single GRE Acquisition
Ehsan Hamtaei[1, 2], Saifeng Liu[3], Yongquan Ye[2], Dongmei Wu[4], E. Mark Haacke[1, 2]
[1]MR Innovations Inc., Detroit, MI, United States; [2]Radiology, Wayne State University, Detroit, MI, United States; [3]MRI Institute of Biomedical Research, Ontario, Canada; [4]East China Normal University, Shanghai, China

2461. Non-Linear TRASE
Somaie Salajeghe[1], Paul Babyn[2], Jonathan C. Sharp[3], Gordon E. Sarty[1]
[1]Division of Biomedical Engineering, University of Saskatchewan, Saskatoon, SK, Canada; [2]Medical Imaging, University of Saskatchewan, Saskatoon, SK, Canada; [3]Department of Oncology, University of Alberta, Edmonton, AB, Canada

2462. Enhanced FRONSAC Encoding with Compressed Sensing
Haifeng Wang[1], R. Todd Constable[1], Gigi Galiana[1]
[1]Yale University, New Haven, CT, United States

2463. Improved Scan Efficiency of 3D Fast Spin Echo with Subspace-Constrained Reconstruction
Jonathan I. Tamir[1], Weitian Chen[2], Peng Lai[2], Martin Uecker[1], Michael Lustig[1]
[1]Electrical Engineering and Computer Sciences, University of California, Berkeley, Berkeley, CA, United States; [2]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States

2464. *In-Vivo* High Resolution Imaging of Fine-Scale Anatomical Structures at 3T with Simultaneous Bias/Variance Reduction
Aymeric Stamm[1], Onur Afacan, Benoit Scherrer, Jolene M. Singh[1], Simon K. Warfield[1]
[1]Computational Radiology Laboratory, Department of Radiology, Boston Children's Hospital, Harvard Medical School, Boston, MA, United States

2465. rOi-Space: Accelerated Imaging of Sub-Volumes Using ROI Focused O-Space
Emre Kopanoglu[1], Haifeng Wang[1], Yuqing Wan[1], Dana C. Peters[1], Gigi Galiana[1], Robert Todd Constable[1]
[1]Diagnostic Radiology, Yale University, New Haven, CT, United States

2466. Scan Time Reduction for Non-CPMG 3D FSE Imaging Based on Phase Cycling
Weitian Chen[1], Rob Peters[2], Suchandrima Banerjee[1], Misung Han[3], Roland Krug[3], Garry Gold[4], Yuval Zur[5]
[1]Global Applied Science laboratory, General Electric, Menlo Park, CA - California, United States; [2]Global Applied Science laboratory, General Electric, Waukesha, WI, United States; [3]Department of Radiology and Biomedical Imaging, UCSF, San Francisco, CA - California, United States; [4]Radiology, Stanford University, Palo Alto, CA - California, United States; [5]Healthcare Magnetic Resonance, General Electric, Haifa, Israel

2467. Accelerating MRI by Quadratic Phase Encoding
Lin Chen[1], Congbo Cai[2], Shuhui Cai[1], Zhong Chen[1]
[1]Department of Electronic Science, Xiamen University, Xiamen, Fujian, China; [2]Department of Communication Engineering, Xiamen University, Xiamen, Fujian, China

2468. High-Resolution fMRI Using Accelerated EPIK for Enhanced Characterisation of Functional Areas at 3T
Seong Dae Yun[1], N. Jon Shah[1, 2]
[1]Institute of Neuroscience and Medicine, Medical Imaging Physics (INM-4), Forschungszentrum Juelich, Juelich, Germany; [2]Faculty of Medicine, Department of Neurology, JARA, RWTH Aachen University, Aachen, Germany

ISMRM MERIT AWARD magna cum laude

2469. Simultaneous Imaging of Myelin and Iron Using Ultrashort Echo Time (UTE) MRI
Vipul R. Sheth[1], Jacopo Annese[1], Hongda Shao[1], Qun He[1], Jody Corey-Bloom[2], Graeme M. Bydder[1], Jiang Du[1]
[1]Radiology, University of California, San Diego, CA, United States; [2]Neurosciences, University of California, San Diego, CA, United States

2470. Spatial Localization of Relaxation Dispersion by Field-Cycling with One-Dimensional Projection
Kerrin J. Pine[1], Gareth R. Davies[1], David J. Lurie[1]
[1]Aberdeen Biomedical Imaging Centre, University of Aberdeen, Aberdeen, Scotland, United Kingdom

Traditional Poster
Image Processing and Analysis
Exhibition Hall Wednesday 16:00-18:00

2471. Multivariate Asymmetry Analysis (MVAA): Applications in Temporal Lobe Epilepsy
Diego Cantor-Rivera[1], Terry M. Peters[2], Ali R. Khan[2]
[1]Biomedical Engineering Graduate Program, Western University, London, ON, Canada; [2]Medical Biophysics, Western University, London, ON, Canada

2472. Polyhedral Phantom Framework with Analytical Fourier Transform with Intensity Gradients
Shuo Han[1], Daniel A. Herzka[1]
[1]Department of Biomedical Engineering, Johns Hopkins School of Medicine, Baltimore, MD, United States

2473. A Hybrid Approach to Intensity Normalization of Brain MRI Based on Gaussian Mixture Model and Histogram Matching
Xiaofei Sun[1], Lin Shi[2, 3], Yishan Luo[1], Winnie CW Chu[1], Defeng Wang[1, 4]
[1]Department of Imaging and Interventional Radiology, The Chinese University of Hong Kong, Shatin, NT, Hong Kong; [2]Department of Medicine and Therapeutics, The Chinese University of Hong Kong, Shatin, NT, Hong Kong; [3]Chow Yuk Ho Technology Centre for Innovative Medicine, The Chinese University of Hong Kong, Shatin, NT, Hong Kong; [4]Department of Biomedical Engineering and Shun Hing Institute of Advanced Engineering, The Chinese University of Hong Kong, Shatin, NT, Hong Kong

2474. Concentration Maps Improve Detection of Gray Matter Alteration in Cerebellum and Deep Gray Matter Structures
Guillaume Bonnier[1, 2], Jean-Philippe Thiran[2], Gunnar Krueger[1, 2], Tobias Kober[1, 2], Bénédicte Mortamet[1, 2], Cristina Granziera[1, 3], Alexis Roche[1, 2]
[1]Siemens ACIT – CHUV Radiology, Siemens Healthcare IM BM PI & Department of Radiology CHUV, Lausanne, Vaud, Switzerland; [2]LTS5, École Polytechnique Fédérale de Lausanne, Lausanne, Vaud, Switzerland; [3]Department of Clinical Neurosciences, Laboratoire de recherche en neuroimagerie and Neuroimmunology Unit, Lausanne, Vaud, Switzerland

2475. Iterative Residual Based Deconvolution Partial Volume Correction for Brain PET- MRI
Chenguang Peng[1], Huayu Zhang[1], Jinchao Wu[1], Xingfeng Shao[1, 2], Yingmao Chen[3], Quanzheng Li[4], Georges El Fakhr[4], Kui Ying[1]
[1]Key Laboratory of Particle and Radiation Imaging, Ministry of Education, Department of Engineering, Beijing, China; [2]Department of Bioengineering, UCLA, CA, United States; [3]Department of Nuclear Medicine, The general hospital of Chinese People's Liberation, Beijing, China, Beijing, China; [4]Department of Radiology, Division of Nuclear Medicine and Molecular Imaging, Harvard Medical School, Boston, United States

2476. Processing Induced Spatial Correlations Are Quantified with a Temporal Frequency Representation in Complex-Valued fMRI
Mary C. Kociuba[1], Daniel B. Rowe[1, 2]
[1]Department of Mathematics, Statistics, and Computer Science, Marquette University, Milwaukee, WI, United States; [2]Department of Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States

2477. Influence of Anisotropic Blood Vessels Modeling in the EEG/MEG Forward Problem Using MRI.
Ernesto Cuartas-M[1], Angel Torrado-C[2, 3], Juan A Hernandez-T[2, 3], José Ángel Pineda[4], Eva Manzanedo-S[2], German Castellanos-D[1]
[1]Universidad Nacional de Colombia, Manizales, Caldas, Colombia; [2]Medical Image Analysis and Biometry Lab, Rey Juan Carlos University, Madrid, Spain; [3]Madrid-MIT M+Vision Consortium, Madrid, Spain; [4]Centre for Biomedical Technology-U.P.M, Pozuelo de Alarcón, Spain

2478. Partial Volume Correction Based on Spatial Variant Point Spread Function for Simultaneous PET-MR Imaging
Chenguang Peng[1], Jinchao Wu[1], Xingfeng Shao[1, 2], Yingmao Chen[3], Quanzheng Li[4], Georges El Fakhr[4], Kui Ying[1]
[1]Key Laboratory of Particle and Radiation Imaging, Ministry of Education, Department of Engineering, Beijing, China; [2]Department of Bioengineering, UCLA, , CA, United States; [3]Department of Nuclear Medicine, The general hospital of Chinese People's Liberation, Beijing, China, Beijing, China; [4]Department of Radiology, Division of Nuclear Medicine and Molecular Imaging, Harvard Medical School, Boston, United States

2479. Weighted Echo Sharing Technique (WEST) for Highly Undersampled Multi-Echo T2(*) Weigthed Data in Cartesian Domain
Taejoon Eo[1], Jinseong Jang[1], Dosik Hwang[1]
[1]Yonsei University, Seoul, Korea

2480. Rapid Segmentation of the Cervical Spinal Cord on 3D MRI Data with Cord Image Analyzer (Cordial): Application to Three-Year Follow-Up Data of MS Patients with a Progressive Disease Course
Michael Amann[1], Simon Pezold[2], Yvonne Naegelin[3], Ketut Fundana[2], Michaela Andelova[3], Katrin Weier[3], Christoph Stippich, Ludwig Kappos[3], Philippe Cattin[2], Till Sprenger[1]
[1]Neurology/Neuroradiology, University Hospital Basel, Basel, BS, Switzerland; [2]Medical Image Analysis Center (MIAC), University of Basel, Basel, BS, Switzerland; [3]Neurology, University Hospital Basel, Basel, BS, Switzerland

2481. Abnormal Brain Anatomy Can Introduce Considerable Bias to Studies Relying on FIRST – an Improved Segmentation Pipeline
Xiang Feng[1], Andreas Deistung[1], Jesper Hagemeier[2], Michael Dwyer[2], Robert Zivadinov[2, 3], Juergen R. Reichenbach[1], Ferdinand Schweser[2, 3]
[1]Medical Physics Group, Institute of Diagnostic and Interventional Radiology, Jena University Hospital - Friedrich Schiller University Jena, Jena, Germany; [2]Buffalo Neuroimaging Analysis Center, Dept. of Neurology, School of Medicine and Biomedical Sciences, State University of New York at Buffalo, Buffalo, NY, United States; [3]MRI Molecular and Translational Imaging Center, Buffalo CTRC, State University of New York at Buffalo, Buffalo, NY, United States

2482. Semi-Automatic Prostate Segmentation Via a Hidden Markov Model with Anatomical and Textural Priors
Christian Scharfenberger[1], Dorothy Lui[1], Farzad Khalvati[2], Alexander Wong[1], Masoom Haider[2, 3]
[1]Systems Design Engineering, University of Waterloo, Waterloo, Ontario, Canada; [2]Department of Medical Imaging, University of Toronto, Toronto, Ontario, Canada; [3]Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada

2483. Magnetic Resonance Neurography (MRN) of Brachial Plexus at 1.5 T: Comparative Evaluation of 3D SHINKEI Versus DWIBS, Our Initial Experience
Prashant Nair[1], Rajagopal K. V[1], Rolla Narayana[2], Indrajit Saha[3], Satish M[1]
[1]KMCH Hospital, Manipal University, Manipal, India; [2]Philips Healthcare, Philips India Ltd, Bangalore, India; [3]Philips Healthcare, Philips India Ltd, Gurgaon, Haryana, India

Traditional Poster
Novel Computing Frameworks
Exhibition Hall Wednesday 16:00-18:00

2484. A Hardware-Independent Environment for MR Acquisition and Simulation
Kelvin Layton[1], Stefan Kroboth[1], Jochen Leupold[1], Huijun Yu[1], Feng Jia[1], Sebastian Littin[1], Tony Stöcker[2], Maxim Zaitsev[1]
[1]Medical Physics, University Medical Center Freiburg, Freiburg, BW, Germany; [2]German Center for Neurodegenerative Diseases, Bonn, NRW, Germany

2485. Sub-Second Compressed Sensing Reconstruction for Large Array Data Using GPUs
Ching-Hua Chang[1], Jim Ji[1]
[1]Texas A&M University, College Station, TX, United States

2486. Berkeley Advanced Reconstruction Toolbox
Martin Uecker[1], Frank Ong[1], Jonathan I. Tamir[1], Dara Bahri[1], Patrick Virtue[1], Joseph Y. Cheng[2], Tao Zhang[2], Michael Lustig[1]
[1]Electrical Engineering and Computer Sciences, University of California, Berkeley, Berkeley, CA, United States; [2]Department of Radiology, Stanford University, Stanford, United States

2487. Customized CPU Accelerated CS-Based MRI Reconstruction Platform
Kyunghyun Sung[1, 2], Di Wu[3], Fei Han[1, 2], Ziwu Zhou[1, 2], Peng Hu[1, 2], Holden Wu[1, 2], Alex Bui[1, 2], Jason Cong[3]
[1]Radiological Sciences, University of California, Los Angeles, Los Angeles, CA, United States; [2]Bioengineering, University of California, Los Angeles, Los Angeles, CA, United States; [3]Computer Science, University of California, Los Angeles, Los Angeles, CA, United States

2488. Faster-Than-Acquisition 4D Sparse Reconstruction for Cartesian 2D SENSE-Type Acquisition
Eric A. Borisch[1], Joshua D. Trzasko[1], Adam T. Froemming[2], Roger C. Grimm[1], Akira Kawashima[2], Armando Manduca[1], Phillip M. Young[2], Stephen J. Riederer[1]
[1]Mayo Clinic, Rochester, MN, United States; [2]Radiology, Mayo Clinic, Rochester, MN, United States

2489. A Low-Cost Flexible Non-Linear Parallelized MR Image Reconstruction System
Fei Han[1], Ziwu Zhou[1], Kyunghyun Sung[1], J Paul Finn[1], Peng Hu[1]
[1]Radiology, David Geffen School of Medicine at UCLA, Los Angeles, CA, United States

Traditional Poster
Image Quality Assessment
Exhibition Hall Wednesday 16:00-18:00

2490. Standardization and Automatization of Quality Assurance in Structural and Dynamic MRI.
Robin Antony Birkeland Bugge[1], Atle Bjørnerud[1], Wibeke Nordhøy[1], Øystein Bech Gadmar[1]
[1]Intervention Center, Oslo University Hospital, Oslo, Norway

2491. Exploring Quality Metrics for MRI Imaging: Comparing Multiple Reconstructions and Measuring Instrument Calibration Using Low Cost Phantoms
Brian Hanna[1], Naoharu Kobayashi[1], Djaudat Idiyatullin[1], Curtis Andrew Corum[1], Brad Weegman[1], Jinjin Zhang[1], Michael Garwood[1]
[1]Radiology, University of Minnesota, Minneapolis, MN, United States

2492. Extending BrainWeb for Evaluating Methods of Brain Volume Change: Simulation of Central and Peripheral Brain Atrophy
Kunio Nakamura[1], Vladimir S. Fonov[1], Nicolas Guizard[1], Sridar Narayanan[1], Douglas L. Arnold[1], D. Louis Collins[1]
[1]Montreal Neurological Institute, McGill University, Montreal, Quebec, Canada

2493. A New Approach for Automatic Image Quality Assessment
Thomas Küstner[1, 2], Parnia Bahar[2], Christian Würslin[1], Sergios Gatidis[1], Petros Martirosian[3], Nina Schwenzer[1], Holger Schmidt[1], Bin Yang[2]
[1]Department of Radiology, University Hospital of Tübingen, Tübingen, Baden-Württemberg, Germany; [2]Institute of Signal Processing and System Theory, University of Stuttgart, Stuttgart, Baden-Württemberg, Germany; [3]Diagnostic and Interventional Radiology, University Hospital of Tübingen, Tübingen, Baden-Württemberg, Germany

2494. A Generalized Method for Automated Quality Assessment in Brain MRI
Bénédicte Maréchal[1, 2], Stephan Kannengiesser[3], Kaely Thostenson[4], Peter Kollasch[5], Pavel Falkovskyi[1, 2], Jean-Philippe Thiran[2], Reto Meuli[6], Matt A. Bernstein[4], Gunnar Krueger[1, 2]
[1]Siemens ACIT – CHUV Radiology, Siemens Healthcare IM BM PI & Department of Radiology CHUV, Lausanne, Switzerland; [2]LTS5, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [3]Siemens Healthcare, Erlangen, Germany; [4]Department of Radiology, Mayo Clinic, Rochester, MN, United States; [5]Siemens Healthcare, MN, United States; [6]CHUV Radiology, Lausanne, Switzerland

2495. Semi-Automatic Quantification of Long-Term Stability and Image Quality of a Parallel Transmit System at 7T
Marcel Gratz[1, 2], Maximilian Völker[2], Sören Johst[2], Mark E. Ladd[2, 3], Harald H. Quick[1, 2]
[1]High Field and Hybrid MR Imaging, University Hospital Essen, Essen, Germany; [2]Erwin L. Hahn Institute for Magnetic Resonance Imaging, University of Duisburg-Essen, Essen, Germany; [3]Medical Physics in Radiology, German Cancer Research Center, Heidelberg, Germany

2496. Comparison of BRISQUE and SSIM as Image Quality Assessment (IQA) on MR Optic Nerve Images.
Li Sze Chow[1], Raveendran Paramesran[1], Martyn Paley[2]
[1]Electrical Engineering, University of Malaya, Kuala Lumpur, Wilayah Persekutuan, Malaysia; [2]Academic Radiology, University of Sheffield, Sheffield, South Yorkshire, United Kingdom

2497. Radiological and Quantitative Assessment of Compressed Sensing Reconstruction of Undersampled 3D Brain Images
Ian Marshall[1], Gabriel Rilling[1], Yuehui Tao[2], Chaoran Du[1], Samarth Varma[1], Dominic Job[1], Andrew Farrall[1], Mike Davies[1]
[1]University of Edinburgh, Edinburgh, United Kingdom; [2]University of Oxford, Oxford, United Kingdom

2498. How to Improve the Accuracy of Total Water Content Measured Using T_2 Relaxation
Sandra M. Meyers[1], Shannon H. Kolind[2], Alex L. MacKay[1, 3]
[1]Physics and Astronomy, University of British Columbia, Vancouver, BC, Canada; [2]Medicine, University of British Columbia, Vancouver, BC, Canada; [3]Radiology, University of British Columbia, Vancouver, BC, Canada

Traditional Poster
Dictionary-Based Reconstruction
Exhibition Hall Wednesday 16:00-18:00

2499. Efficient Dictionary Design for MR Fingerprinting Using Tree-Structured Vector Quantization
Zhitao Li[1], Benjamin Paul Berman[2], Diego R. Martin[3], Maria I. Altbach[3], Ali Bilgin[1, 4]
[1]Electrical and Computer Engineering, University of Arizona, Tucson, AZ, United States; [2]Applied Mathematics, University of Arizona, Tucson, AZ, United States; [3]Department of Medical Imaging, University of Arizona, Tucson, AZ, United States; [4]Biomedical Engineering, University of Arizona, Tucson, AZ, United States

2500. Fast Reconstruction of Highly-Undersampled Dynamic MRI Using Random Sampling and Manifold Interpolation
Kanwal K. Bhatia[1], Anthony N. Price[2,3], Joseph V. Hajnal[2,3], Daniel Rueckert[1]
[1]Biomedical Image Analysis Group, Imperial College London, London, United Kingdom; [2]Centre for the Developing Brain, Kings College London, London, United Kingdom; [3]Biomedical Engineering Department, Kings College London, London, United Kingdom

2501. Fast Dictionary Learning-Based Compresssed Sensing MRI with Patch Clustering
Zhifang Zhan[1], Yunsong Liu[1], Jian-Feng Cai[2], Di Guo[3], Jing Ye[1], Zhong Chen[1], Xiaobo Qu[1]
[1]Department of Electronic Science, Xiamen University, Xiamen, Fujian, China; [2]Department of Mathematics, University of Iowa, Iowa City, IA, United States; [3]School of Computer and Information Engineering, Xiamen University of Technology, Xiamen, Fujian, China

2502. Dictionary Learning for Compressive T2 Mapping with Non-Cartesian Trajectories and Parallel Imaging
Benjamin Paul Berman[1], Mahesh Bharath Keerthivasan[2], Zhitao Li[2], Diego R. Martin[3], Maria I. Altbach[3], Ali Bilgin[2,4]
[1]Program in Applied Mathematics, University of Arizona, Tucson, AZ, United States; [2]Electrical & Computer Engineering, University of Arizona, Tucson, AZ, United States; [3]Medical Imaging, University of Arizona, Tucson, AZ, United States; [4]Biomedical Engineering, University of Arizona, Tucson, AZ, United States

2503. Sparsity-Promoting Orthogonal Dictionary Updating for Highly Undersampled MRI Reconstruction
Jinhong Huang[1,2], Xiaohui Liu[1], Wufan Chen[1], Yanqiu Feng[1]
[1]Guangdong Provincial Key Laborary of Medical Image Processing, School of Biomedical Engineering, Southern Medical University, Guangzhou, Guangdong, China; [2]School of Mathemtics and Computer Science, Gannan Normal University, Ganzhou, Jiangxi, China

ISMRM MERIT AWARD magna cum laude

2504. Accelerating MR Parameter Mapping Using Manifold Recovery
Chao Shi[1], Yihang Zhou[1], Yanhua Wang[1], Dong Liang[2], Xiaojuan Li[3], Leslie Ying[1,4]
[1]Electrical Engineering, University at Buffalo, SUNY, Buffalo, NY, United States; [2]Paul C. Lauterbur Research Center for Biomedical Imaging, Shenzhen Institute of Advanced Technology, Shenzhen, Guangdong, China; [3]Department of Radiology and Biomedical Imaging, University of California at San Francisco, San Francisco, CA, United States; [4]Biomedical Engineering, University at Buffalo, SUNY, Buffalo, NY, United States

Traditional Poster
Imaging Near Metal
Exhibition Hall Wednesday 16:00-18:00

ISMRM MERIT AWARD magna cum laude

2505. Reduced FOV Imaging Near Metal Using 2D Multispectral Imaging and Very Selective Outer Volume Suppression
Valentina Taviani[1], Daniel Litwiller[2], Kevin M. Koch[3], Brian A. Hargreaves[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]GE Healthcare, Rochester, MN, United States; [3]Biophysics and Radiology, Medical College of Wisconsin, Milwaukee, WI, United States

2506. Compressed Sensing Accelerated Broadband 3D Phase Encoded Turbo Spin-Echo Imaging for Geometrically Undistorted Imaging in the Presence of Field Inhomogeneities
Jetse van Gorp[1], Chris Bakker[1,2], Job Bouwman[1], Jouke Smink[3], Frank Zijlstra[1], Peter Seevinck[1]
[1]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands; [2]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [3]Philips, Best, Noord-Brabant, Netherlands

2507. Imaging of the Spine with Metal Implants Using High-Bandwidth RF Pulses from a Local Tx/Rx Coil
Theresa Bachschmidt[1,2], Johanna Schöpfer[3], Stephan Biber[2], Peter Jakob[1], Mathias Nittka[2]
[1]Department of Experimental Physics 5, University of Würzburg, Würzburg, Germany; [2]Magnetic Resonance, Siemens AG, Erlangen, Germany; [3]Corporate Technology, Siemens AG, Erlangen, Germany

2508. Automatic Detection of Metal Implant Location in Hexagonally Sampled MAVRIC-SL
Bragi Sveinsson[1], Valentina Taviani[1], Garry Gold[1], Brian Hargreaves[1]
[1]Radiology, Stanford University, Stanford, CA, United States

2509. Initial Experience with Artefact Reduction Sequences and MR Conditional Cochlear Implants
Jonathan Paul Ashmore[1], Mathias Nittka[2], Lyndall Blakeway[3], Steve Connor[1, 3], Geoff Charles-Edwards[3]
[1]Neuroradiology, King's College Hospital NHS Foundation Trust, London, United Kingdom; [2]Siemens Healthcare, Erlangen, Germany; [3]Guy's & St Thomas' NHS Foundation Trust, London, United Kingdom

2510. Metal Artifact Correction Using Sensitivity Information
Dongchan Kim[1], JaeJin Cho[1], Kinam Kwon[1], HyunWook Park[1]
[1]Electrical engineering, KAIST, Daejeon, Yuseong-Gu, Korea

2511. Metal Implant-Induced Spectral Range Optimization Using Rapid 3D-MSI Calibration Scans
Kevin M. Koch[1]
[1]Biophysics and Radiology, Medical College of Wisconsin, Milwaukee, WI, United States

2512. Evaluation of T2-Weighted WARP Sequences in Patients with Spinal Prosthesis
shun qi[1], Ying Liu, Langlang Gao, Panli Zuo[2], Mathias Nittka[3], Hong Yin
[1] Xijing Hospital, Fourth Military Medical University, xian, shaanxi, China; [2]Siemens Healthcare, MR Collaborations NE Asia, shaanxi, China; [3]Siemens Healthcare, Germany, Germany

2513. An Improved Complex Image Combination Algorithm for SEMAC
Daehyun Yoon[1], Brian A. Hargreaves[1]
[1]Radiology, Stanford University, Palo Alto, CA, United States

2514. Phase Unwrapping Near Metal Implants with Prior Knowledge of the Implant Geometry
Laura J. King[1], Philip J. Bones[1], Rick P. Millane[1]
[1]Department of Electrical and Computer Engineering, University of Canterbury, Christchurch, New Zealand

2515. Numerical RF Pulse Optimization to Reduce Peak B1 for Multi-Spectral Imaging Around Metal Implants
Andrew M. Huettner[1], Andrew S. Nencka[1], L.Tugan Muftuler[2], Kevin M. Koch[3]
[1]Biophysics, The Medical College of Wisconsin, Milwaukee, WI, United States; [2]Neurosurgery, The Medical College of Wisconsin, Milwaukee, WI, United States; [3]Biophysics and Radiology, The Medical College of Wisconsin, Milwaukee, WI, United States

2516. Fluid-Sensitive Metal Artifact Reduction Using a 3D-Composite Fast Steady State Free Precession (COFIsp) Sequence
Xeni Deligianni[1, 2], Thomas Egelhof[2], Thorsten Wischer[2], Reinhard Elke[2], Oliver Bieri[3]
[1]Radiology, Division of Radiological Physics, University of Basel Hospital , Basel, NA, Switzerland; [2]Merian Iselin Klinik, Basel, NA, Switzerland; [3]Radiology, Division of Radiological Physics, University of Basel Hospital, Basel, NA, Switzerland

Traditional Poster
Elastography

Exhibition Hall Wednesday 16:00-18:00

2517. Estimation of Abdominal Aortic Aneurysm Stiffness Using MR Elastography: Is Stiffness Superior to Diameter?
Shantanu Warhadpande[1], William Kenyhercz[2], Priyanka Illapani[2], Brian Raterman[3], Joshua Dowell[3], Michael Go[3], Patrick Vaccaro[3], Jean Starr[3], Richard White[3], Arunark Kolipaka[3]
[1]The Ohio State University College of Medicine, Columbus, OH, United States; [2]The Ohio State University, Columbus, OH, United States; [3]The Ohio State University Wexner Medical Center, OH, United States

2518. Theoretical Performance and Sampling Limits in Steady-State Magnetic Resonance Elastography
Joshua Trzasko[1], Kevin Glaser[1], Arvin Arani[1], Armando Manduca[1], David Lake[1], Phillip Rossman[1], Shivaram Poigai Arunachalam[1], Kiaran McGee[1], Richard Ehman[1], Philip Araoz[1]
[1]Mayo Clinic, Rochester, MN, United States

2519. Consistent SNR Measures for Magnetic Resonance Elastography
Armando Manduca[1], David S. Lake[1], Khang T. Huynh[1], Rehman S. Eon[1], Elizabeth M. Annoni[1], Richard L. Ehman[1]
[1]Physiology and Biomedical Engineering, Mayo Clinic, Rochester, MN, United States

ISMRM MERIT AWARD magna cum laude

2520. Mechanical Properties and Force Output of Quadriceps Muscle Following Eccentric Exercise
P Kennedy[1], L MacGregor[2], E Barnhill[1], A Cooper[1], L Hiscox[1], C Brown[3], J Braun[4], I Sack[4], E van Beek[1], A Hunter[2], CL Johnson[5], N Roberts[1]
[1]Clinical Research Imaging Centre (CRIC), University of Edinburgh, Edinburgh, United Kingdom; [2]School of Sport, University of Stirling, Stirling, United Kingdom; [3]The Mentholatum Company Ltd., Glasgow, United Kingdom; [4]Department of Radiology, Charité - Universitätsmedizin Berlin, Berlin, Germany; [5]Beckman Institute, University of Illinois at Urbana-Champaign, Urbana, IL, United States

2521. *In Vivo* Waveguide Elastography of White Matter Tracts in the Full Human Brain
Anthony Joseph Romano[1], Jing Guo[2], Michael Scheel[2], Sebastian Hirsch[2], Juergen Braun[3], Ingolf Sack[2]
[1]Physcial Acoustics, Naval Research Laboratory, Washington, DC, United States; [2]Radiology, Charite-Universitatsmedizin, Berlin, Germany; [3]Medical Informatics, Charite-Universitatsmedizin, Berlin, Germany

2522. Fast 2D Hepatic MR Elastography for Free-Breathing and Short Breath Hold Applications
Kevin Glaser[1], Jun Chen[1], Richard Ehman[1]
[1]Radiology, Mayo Clinic, Rochester, MN, United States

2523. Combining Conjugate and Non-Conjugate Wave Data for Faster Elastography
Roger Grimm[1], Eric Stinson[1], Richard Ehman[1]
[1]Mayo Clinic, Rochester, MN, United States

2524. Three Dimensional Three Parameter Direct Inversion MR Elastography of Incompressible Transverse Isotropic Media: Application to *In Vivo* Soleus Muscle
Jing Guo[1], Sebastian Hirsch[1], Jürgen Braun[2], Ingolf Sack[1]
[1]Radiology, Charité - Universitätsmedizin Berlin, Berlin, Germany; [2]Department of Medical Informatics, Charité - Universitätsmedizin Berlin, Berlin, Germany

2525. The Accuracy of Multi-Slice Multi-Frequency MR Elastography in a Brain Stiffness Mimicking Phantom
Arvin Arani[1], Ondrej Slezak[1], Nikoo Fattahi[1], Kevin J. Glaser[1], Joel Felmlee[1], Armando Manduca[2], Clifford R. Jack[1], Richard L. Ehman[1], John Huston III[1]
[1]Radiology, Mayo Clinic, Rochester, MN, United States; [2]Physiology and Biomedical Engineering, Mayo Clinic, Rochester, MN, United States

2526. Observation of Functional Magnetic Resonance Elastography (FMRE) in Mouse Brain
Samuel Patz[1, 2], Katharina Schregel[3], Iga Muradyan[1, 2], Angelos Kyriazis[1, 2], Jens Wuerfel[3, 4], Srini Mukundan[1, 2], Ralph Sinkus[5]
[1]Brigham & Women's Hospital, Boston, MA, United States; [2]Harvard Medical School, Boston, MA, United States; [3]Institute of Neuroradiology, University Medicine Goettingen, Goettingen, Germany; [4]NeuroCure, Charité University Medicine, Berlin, Germany; [5]Imaging Sciences & Biomedical Engineering, Kings College, London, United Kingdom

2527. A Small Animal MR Elastography Setup to Study Skeletal Muscle Damage and the Etiology of Pressure Ulcers and Related Deep Tissue Injury.
Jules Nelissen[1, 2], Larry de Graaf[1], Tom Schreurs[1, 2], Willeke Traa[3], Kevin Moerman[4], Cees Oomens[5], Aart Nederveen[4], Klaas Nicolay[1], Gustav Strijkers[1, 2]
[1]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [2]Biomedical Engineering and Physics, Academic Medical Center, Amsterdam, Netherlands; [3]Soft Tissue Biomechanics and Engineering, , Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [4]Department of Radiology, Academic Medical Center, Amsterdam, Netherlands; [5]Soft Tissue Biomechanics and Engineering, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands

2528. A Retrofit Technology for MR Elastography
Tomokazu Numano[1], Yoshihiko Kawabata[2], Kazuyuki Mizuhara[3], Toshikatsu Washio[4], Junichi Hata[5], Kazuhiro Homma[4]
[1]Radiological Sciences, Tokyo Metropolitan University, Arakawa-ku, Tokyo, Japan; [2]Takashima Seisakusho Co., Ltd., Tokyo, Japan; [3]Tokyo Denki University, Tokyo, Japan; [4]National Institute of Advanced Industrial Science and Technology (AIST), Ibaraki, Japan; [5]Graduate School of Medicine Keio University, Tokyo, Japan

2529. Validation of Waveguide Magnetic Resonance Elastography Using Finite Element Model Simulation
Ria Mazumder[1, 2], Renee Miller[3], Haodan Jiang[4], Bradley D. Clymer[1], Richard D. White[2, 5], Alistair Young[3], Anthony Romano[6], Arunark Kolipaka[2, 5]
[1]Department of Electrical and Computer Engineering, The Ohio State University, Columbus, OH, United States; [2]Department of Radiology, The Ohio State University College of Medicine, Columbus, OH, United States; [3]Department of Anatomy with Radiology, The University of Auckland, New Zealand; [4]Department of Research and Development, Ohio Supercomputer Center, OH, United States; [5]Department of Internal Medicine-Division of Cardiology, The Ohio State University College of Medicine, OH, United States; [6]Naval Research Laboratory, DC, United States

2530. Finger Tapping Experiment Observed by Brain Magnetic Resonance Elastography
Ondrej Holub[1], Simon Lambert[2], Katharina Schregel[3], Lynne Bilston[4], Samuel Patz[5, 6], Ralph Sinkus[1]
[1]Imaging Sciences and Biomedical Engineering , King's College London, London, United Kingdom; [2]Imaging Sciences and Biomedical Engineering, King's College London, London, United Kingdom; [3]University Medicine Goettingen, Institute of Neuroradiology, Goettingen, Germany; [4]University of New South Wales, Neuroscience Research Australia, Sydney, New South Wales, Australia; [5]Brigham and Women's Hospital, Radiology, Boston, MA, United States; [6]Harvard Medical School, Radiology, Boston, MA, United States

Traditional Poster
Mapping Magnetism using Magnetoencephalography
Exhibition Hall Wednesday 16:00-18:00

2531. Mapping Magnetisation Using a Magnetoencephalography System
Richard Bowtell[1], Mobeen Ali[1], Jason Medica[1], Ingrid Vella[1], Mattthew Brookes[1]
[1]School of Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom

Traditional Poster
Multi-Scale Motion
Exhibition Hall Wednesday 16:00-18:00

2532. Introducing Prior Knowledge Through the Non-Local Means Filter in Model-Based Reconstructions Improves ASL Perfusion Imaging
Samuel Fielden[1], Li Zhao[1], Max Wintermark[2], Craig Meyer[1, 3]
[1]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [2]Radiology, Stanford University, Palo Alto, CA, United States; [3]Radiology, University of Virginia, Charlottesville, VA, United States

2533. Non-Contrast Enhanced 4D Artery-Selective MR Angiography Using Spatially Selective Saturation
Thomas Lindner[1], Ulf Jensen-Kondering[1], Fritz Wodarg[1], Olav Jansen[1], Michael Helle[2]
[1]Department of Radiology and Neuroradiology, UKSH, Kiel, Germany; [2]Philips Research, Hamburg, Germany

2534. Systematic Evaluation of Region-Wise IVASO Reproducibility at Multiple Blood Water Nulling Times
Swati Rane[1], Pratik Talati[2], Manus Donahue[3, 4], Stephan Heckers[2]
[1]Radiology and Radiological Sciences, Vanderbilt University Institute of Imaging Science, Nashville, TN, United States; [2]Psychiatry, Vanderbilt University, Nashville, TN, United States; [3]Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [4]Neurology, Vanderbilt University, Nashville, TN, United States

2535. Evaluation of GLACIER Sampling for 3D DCE-MRI
Yinghua Zhu[1], Yi Guo[1], Sajan Goud Lingala[1], R. Marc Lebel[2], Meng Law[1], Krishna Nayak[1]
[1]University of Southern California, Los Angeles, CA, United States; [2]GE Healthcare, Calgary, Canada

2536. A Novel Sequence to Improve Signal to Noise in DCE Measurements
Jason Kraig Mendes[1], Scott McNally[2], Dennis L. Parker[1]
[1]Radiology, University of Utah, Salt Lake City, UT, United States; [2]Clinical Radiology, University of Utah, Salt Lake City, UT, United States

2537. *In Vivo* Rapid 3D Microscopic DTI Combining Super Resolution Reconstruction and Reverse Gradient Correction Method
Ulysse Gimenez[1], Antoine Triquet[1], Hana Lahrech[1]
[1]Clinatec, CEA, Grenoble, Rhones-Alpes, France

2538. Image Reconstruction for Accelerated Diffusion Tensor Imaging Using Joint Low-Rank and Sparsity Constraints
Sen Ma[1], Xiaodong Ma[2], Hua Guo[2]
[1]Department of Electronic Engineering, Tsinghua University, Beijing, China; [2]Center for Biomedical Imaging Research, Department of Biomedical Engineering, School of Medicine, Tsinghua University, Beijing, China

2539. Fast, Whole Brain Radial Diffusion Spectrum Imaging (RDSI) Via Simultaneous Multi Slice Excitation
Steven Baete[1, 2], Tiejun Zhao[3], Fernando Emilio Boada[1, 2]
[1]Center for Advanced Imaging Innovation and Research (CAI2R), NYU School of Medicine, New York, NY, United States; [2]Center for Biomedical Imaging, Dept. of Radiology, NYU School of Medicine, New York, NY, United States; [3]Siemens Healthcare, Siemens Medical Solutions USA, Inc., New York, NY, United States

2540. Body DWI Using NCPMG FSE
Eric Kenneth Gibbons[1], Shreyas Vasanawala[2], John Mark Pauly[3], Adam Bruce Kerr[3]
[1]Department of Bioengineering, Stanford University, Stanford, CA, United States; [2]Department of Radiology, CA, United States; [3]Department of Electrical Engineering, Stanford University, CA, United States

2541. TOF-MRA Reconstruction from Undersampled Data: Comparison of Three Different Regularization Methods
Akira Yamamoto[1], Koji Fujimoto[1], Yasutaka Fushimi[1], Tomohisa Okada[1], Kei Sano[2], Toshiyuki Tanaka[2], Kaori Togashi[1]
[1]Department of Diagnostic Imaging and Nuclear Medicine, Graduate School of Medicine, Kyoto University, Kyoto, Japan; [2]Department of Systems Science, Graduate School of Informatics, Kyoto University, Kyoto, Japan

2542. A Simple and Practical Method to Optimize Regularization Parameters in Compressed Sensing Reconstruction of Time-Of-Flight (TOF) MR Angiography
Koji Fujimoto[1], Takayuki Yamamoto[1], Thai Akasaka[1], Tomohisa Okada[1], Yasutaka Fushimi[1], Akira Yamamoto[1], Toshiyuki Tanaka[2], Kei Sano[2], Masayuki Ohzeki[2], Kaori Togashi[1]
[1]Diagnostic Imaging and Nuclear Medicine, Graduate School of Medicine, Kyoto University, Kyoto, Japan; [2]Department of Systems Science, Graduate School of Informatics, Kyoto University, Kyoto, Japan

2543. Comparison of 2D Versus 3D Sparse Priors in Compressed Sensing Reconstruction of Time-Of-Flight (TOF) MR Angiography

Thai Akasaka[1], Koji Fujimoto[1], Takayuki Yamamoto[1], Tomohisa Okada[1], Yasutaka Fushimi[1], Akira Yamamoto[1], Toshiyuki Tanaka[2], Kei Sano[2], Masayuki Ohzeki[2], Kaori Togashi[1]
[1]Diagnostic Imaging and Nuclear Medicine, Kyoto University Graduate School of Medicine, Kyoto, Japan; [2]Kyoto University Graduate School of Informatics, Kyoto, Japan

2544. Optimization of Flow-Compensation Gradients in SWI and TOF Scans for Acoustic Noise Reduction in MRI

David Manuel Grodzki[1], Aurelien F. Stalder[1], Yutaka Natsuaki[2], Julie Roesch[3], Bjoern Heismann[1, 4]
[1]Magnetic Resonance, Siemens Healthcare, Erlangen, Bavaria, Germany; [2]Siemens Healthcare USA, Los Angeles, CA, United States; [3]Neuroradiology, University of Erlangen, Erlangen, Bavaria, Germany; [4]Friedrich-Alexander-University of Erlangen-Nuremberg, Pattern Recognition Lab, Germany

2545. Simultaneous Assessment of Respiration and Heart Beat on CSF and Blood Oscillations in Near Real-Time Imaging

Joel Daouk[1], Roger Bouzerar[1, 2], Olivier Baledent[1, 2]
[1]BioFlow Image, University of Picardie Jules Verne, Amiens, Picardie, France; [2]Medical Image Processing, CHU Amiens, Picardie, France

2546. A Preliminary Study of Self-Gated Rat Cardiac Imaging by Using Wideband MRI Technique

Yi-Hang Tung[1], Yun-An Huang[2], Edzer L. Wu[2], Wan-Ting Zhao[2], Tzi-Dar Chiueh[2], Jyh-Horng Chen[2]
[1]National Taiwan University, Taipei, Taiwan, Taiwan; [2]National Taiwan University, Taiwan, Taiwan

Traditional Poster
Motion Correction Head

Exhibition Hall Wednesday 16:00-18:00

2547. First Experiences with a Time of Flight (ToF) Camera for Marker-Less Motion Tracking Within a 7 Tesla MR Scanner

Thomas Siegert[1], Enrico Reimer[1], Roland Müller[1], Robert Turner[1], Harald Möller[1], Jessica Schulz[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Sachsen, Germany

2548. *In Vivo* 7T MR Imaging Triggered by Phase Information Obtained from Video Signals of the Human Skin

Nicolai Spicher[1], Markus Kukuk[1], Mark E. Ladd[2, 3], Stefan Maderwald[2]
[1]University of Applied Sciences and Arts Dortmund, Dortmund, Germany; [2]Erwin L. Hahn Institute for Magnetic Resonance Imaging, University Duisburg-Essen, Essen, Germany; [3]Division of Medical Physics in Radiology, German Cancer Research Center, Heidelberg, Germany

2549. Assessment of Marker Fixation in Prospective Motion Correction Using a Multiple Marker Approach.

Benjamin Knowles[1], Thomas Lange[1], Aditya Singh[2], Michael Herbst[2], Maxim Zaitsev[1]
[1]Medical Physics, Univeristy Medical Centre Freiburg, Freiburg, Germany; [2]John A Burns School of Medicine, University of Hawaii, Honolulu, HI, United States

2550. The Necessity of Coil Sensitivity and Gradient Non-Linearity Distortion Corrections in Prospective Motion Correction

Uten Yarach[1], Daniel Stucht[1], Frank Godenschweger[1], Oliver Speck[1]
[1]Department of Biomedical Magnetic Resonance, Otto-von-Guericke University, Magdeburg, Sachsen-Anhalt, Germany

2551. Contribution of FOV Updating and Reacquisition to Estimates of Cortical Surface Measures in PROMO MPRAGE
Joelle E. Sarlls[1], Francois Lalonde[2], Dan Rettmann[3], Ajit Shankaranarayanan[4], Vinai Roopchansingh[5], S. Lalith Talagala[1]
[1]NMRF/NINDS, National Institues of Health, Bethesda, MD, United States; [2]NIMH, National Institutes of Health, Bethesda, MD, United States; [3]GE Healthcare, Rochester, NY, United States; [4]GE Healthcare, Menlo Park, CA, United States; [5]FMIRF/NIMH, National Institutes of Health, Bethesda, MD, United States

2552. Real-Time Dynamic Prediction of Motion During Prospective Motion Correction Helps Reduce Errors Caused by Fast Motions and Delayed Motion Measurements
Burak Erem[1, 2], Onur Afacan[1, 2], Ali Gholipour[1, 2], Simon K. Warfield[1, 2]
[1]Department of Radiology, Boston Children's Hospital, Boston, MA, United States; [2]Harvard Medical School, Boston, MA, United States

2553. Comparing 1.5T Vs. 7T Phase Contrast MRI for Measuring Brain Tissue Pulsation
Nils Noorman[1], Fredy Visser[1, 2], Peter R. Luijten[1], Jaco J.M. Zwanenburg[1]
[1]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]Philips Healthcare, Best, Netherlands

2554. Inter-Scan Motion Artefacts in Quantitative R1 Mapping Require Correction of Coil Sensitivity Profiles
Daniel Papp[1], Martina F. Callaghan[1], Craig Buckley[2], Heiko Meyer[3], Nikolaus Weiskopf[1]
[1]Wellcome Trust Centre For Neuroimaging, UCL Institute of Neurology, London, United Kingdom; [2]SIEMENS PLC (Healthcare Division), United Kingdom; [3]SIEMENS Healthcare AG, Germany

2555. Prospective Motion Correction (PROMO) Enabled MP2RAGE for Multi-Contrast High-Resolution Brain Imaging
Alexandru V. Avram[1], Joelle E. Sarlls[2], Cibu P. Thomas[1, 3], Vinai Roopchansingh[4], Dan Rettmann[5], Ajit Shankaranarayanan[6], Peter J. Basser[1]
[1]Section on Tissue Biophysics and Biomimetics, NICHD, National Institutes of Health, Bethesda, MD, United States; [2]NINDS, National Institutes of Health, Bethesda, MD, United States; [3]The Henry Jackson Foundation, Bethes, MD, United States; [4]NIMH/Functional MRI Facility, National Institutes of Health, Bethesda, MD, United States; [5]ASL, GE Healthcare, Rochester, MN, United States; [6]ASL, GE Healthcare, Menlo Park, CA, United States

2556. Retrospective Rigid Motion Correction of Undersampled MRI Data
Alexander Loktyushin[1], Maryna Babayeva[2, 3], Daniel Gallichan[4], Gunnar Krueger[2, 3], Klaus Scheffler[5, 6], Tobias Kober[2, 3]
[1]Empirical Inference, Max Planck Institute for Intelligent Systems, Tübingen, Germany; [2]Siemens ACIT - CHUV Radiology, Siemens Healthcare IM BM PI, & Department of Radiology, University Hospital (CHUV), Lausanne, Switzerland; [3]LTS5, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [4]CIBM, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [5]High-Field Magnetic Resonance Center, Max Planck Institute for Biological Cybernetics, Tübingen, Germany; [6]Department for Biomedical Magnetic Resonance, University of Tübingen, Tübingen, Germany

2557. Parallel Imaging for Motion Correction in Neonatal Brain MR Reconstruction
Lucilio Cordero-Grande[1, 2], Emer Hughes[1, 2], Rui Pedro A. G. Teixeira[1, 2], Joseph V. Hajnal[1, 2]
[1]Centre for the Developing Brain, King's College London, London, United Kingdom; [2]Division of Imaging Sciences and Biomedical Engineering, King's College London, London, United Kingdom

2558. The Correction of Motion-Induced Coil Sensitivity Miscalibration in Parallel Imaging with Prospective Motion Correction
Uten Yarach[1], Daniel Stucht[1], Frank Godenschweger[1], Oliver Speck[1]
[1]Department of Biomedical Magnetic Resonance, Otto-von-Guericke University, Magdeburg, Sachsen-Anhalt, Germany

2559. Using Brain Imaging Data to Detect and Correct Non-Rigid Sensor Motion in Prospective Motion Correction
Paul Wighton[1, 2], Matthew Dylan Tisdall[1, 2], Erez Nevo[3], André Dylan van der Kouwe[1]
[1]Martinos Center for Biomedical Imaging, MGH, Charlestown, MA, United States; [2]Harvard Medical School, Boston, MA, United States; [3]Robin Medical, Baltimore, MD, United States

ISMRM MERIT AWARD magna cum laude

2560. Prospective Motion Correction of DW 3D-MS EPI Using Collapsed FatNav (CFatNav)
Mathias Engström[1, 2], Enrico Avventi[1, 2], Magnus Mårtensson[2, 3], Ola Norbeck[1], Stefan Skare[1, 2]
[1]Dept. of Neuroradiology, Karolinska University Hospital, Stockholm, Sweden; [2]Dept. of Clinical Neuroscience, Karolinska Institutet, Stockholm, Sweden; [3]EMEA Research and Collaboration, GE Applied Science Laboratory, GE Healthcare, Stockholm, Sweden

2561. Effect of Hand Feedback Visualization on Head Motion During fMRI of Neuropsychological Testing
Mahta Karimpoor[1, 2], Zahra Faraji-Dana[1, 2], Simon James Graham[1, 2]
[1]Physical Scienses, Sunnybrook Research Institute, Toronto, Ontario, Canada; [2]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada

2562. An Automatic EEG-Assisted Retrospective Motion Correction for fMRI (AE-REMCOR)
Chung-Ki Wong[1], Vadim Zotev[1], Han Yuan[1], Masaya Misaki[1], Raquel Phillips[1], Qingfei Luo[1], Jerzy Bodurka[1, 2]
[1]Laureate Institute for Brain Research, Tulsa, OK, United States; [2]College of Engineering, University of Oklahoma, Norman, OK, United States

2563. Six-Degree of Freedom Retrospective Motion Correction Using Spherical Navigator Echoes (SNAV)
Patricia Johnson[1, 2], Junmin Liu[3], Trevor Wade[3], Maria Drangova, [23]
[1]Imaging Research Laboratories , Robarts Research Institute, London, Ontario, Canada; [2]Dept. of Medical Biophysics, Schulich School of Medicine & Dentistry, Western University, London, Ontario, Canada; [3]Imaging Research Laboratories, Robarts Research Institute, London, Ontario, Canada

2564. Motion Correction for Variable Density Spiral MRI Using Sampling Overlap as Inherent Navigators
Yilong Liu[1, 2], Xiaodong Ma[2], Hua Guo[2], Ed X. Wu[1, 3]
[1]Laboratory of Biomedical Imaging and Signal Processing, The University of Hong Kong, Hong Kong, China; [2]Center for Biomedical Imaging Research, Department of Biomedical Engineering, School of Medicine, Tsinghua University, Beijing, China; [3]Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, China

Traditional Poster
Motion Correction - Body

Exhibition Hall   Wednesday 16:00-18:00

2565. 2D Diaphragm Navigation with Rapid Gradient Echo Images: Validation at 3T and Application at 7T
Aaron T. Hess[1], Andre JW van der Kouwe[2, 3], Matthew Dylan Tisdall[2], Stefan Neubauer[1], Matthew D. Robson[1]
[1]Oxford Centre for Clinical Magnetic Resonance Research (OCMR), Oxford, Ox, United Kingdom; [2]Radiology, Harvard Medical School, Boston, MA, United States; [3]Martinos Center, Massachusetts General Hospital, Boston, MA, United States

2566. Comparison of Breath-Holding and Respiratory Gating T2* Mapping in the Heart and Liver for Thalassemia Major Patients
Xiaodong Chen[1, 2], Zuoquan Zhang[3], Qihua Yang[1], Zebin Luo[2], Ziliang Cheng[1], Jiaji Mao[1], Queenie Chan[4], Hua Guo[5], Biling Liang[1]
[1]Sun Yat-Sen Memorial Hospital, Guangzhou, Guangdong, China; [2]Affiliated hospital of Guangdong Medical College, Zhanjiang, Guangdong, China; [3]The Fifth Affiliated Hospital of Sun Yat-Sen University, Guangdong, China; [4]Philips Healthcare, Hong Kong, China; [5]Center for Biomedical Imaging Research, Department of Biomedical Engineering, School of Medicine, Tsinghua University, Beijing, China

2567. Continuous Adaptive Sampling of K-Space from Real-Time Physiologic Feedback in MRI
Francisco Contijoch[1], Yuchi Han[1], Michael Hansen[2], Peter Kellman[2], Gene Gualtieri[3], Mark A. Elliott[1], Sebastian Berisha[1], James J. Pilla[1], Robert C. Gorman[1], Walter RT Witschey[1]
[1]University of Pennsylvania, Philadelphia, PA, United States; [2]National Institute of Health, Bethesda, MD, United States; [3]Drexel University, Philadelphia, PA, United States

2568. Using Optical Flow to Estimate Displacement Between 3D Navigators in Coronary Angiography
Nicholas Dwork[1], Daniel O'Connor[2], Nii Okai Addy[1], Reeve Ingle[1], John Pauly[1], Dwight Nishimura[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Mathematics, University of California, Los Angeles, CA, United States

2569. Estimating 3D Deformable Motion from a Series of Fast 2D MRI Images with CLARET
Jason Brown[1], Cihat Eldeniz[1], Wolfgang Rehwald[2], Brian Dale[3], Hongyu An[1], David Lalush[1]
[1]Joint Department of Biomedical Engineering, The University of North Carolina at Chapel Hill and North Carolina State University, Chapel Hill, NC, United States; [2]Siemens Healthcare, Malvern, PA, United States; [3]Siemens Healthcare, Cary, NC, United States

2570. 3D FFE PROPELLER Free-Breathing Abdominal Imaging
Yuchou Chang[1], Dallas C. Turley[1], James G. Pipe[1]
[1]Imaging Research, Barrow Neurological Institute, Phoenix, AZ, United States

2571. 3D T2w-MRI Using a Magnetization-Prepared Golden Angle Radial Sequence with Motion-Corrected ESPIRiT Reconstruction
Isabel Dregely[1], Fei Han[1], Ziwu Zhou[1], Kyung Sung[1], Peng Hu[1], Holden H. Wu[1]
[1]Radiological Sciences, University of California Los Angeles, Los Angeles, CA, United States

2572. 3D Free-Breathing Abdominal MRI Using Robust Navigator Processing with Coil Clustering
Tao Zhang[1, 2], Joseph Y. Cheng[1, 2], Yuxin Chen[2], John M. Pauly[2], Shreyas S. Vasanawala[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Electrical Engineering, Stanford University, Stanford, CA, United States

2573. Interleaved Versus Grouped Viewsharing in 3D DCE-DIXON of the Abdomen: Sensitivity to Motion Artifacts
Christine Nabuurs[1], Gabriele Beck[1], Silke Hey[1], Marko Ivancevic[2]
[1]Clinical Excellence, Philips Healthcare, Best, NB, Netherlands; [2]Clinical Science, Philips Healthcare, Best, NB, Netherlands

2574. Dynamic Reacquisition for Respiratory Gated, Constant TR 2D Multi-Slice MRI
Paul Kinchesh[1], Philip D. Allen[1], John S. Beech[1], Emmanouil Fokas[1], Stuart Gilchrist[1], Veerle Kersemans[1], Ruth Muschel[1], Sean C. Smart[1]
[1]Department of Oncology, University of Oxford, Oxford, United Kingdom

2575. Flow Artifact Suppression in Subtractionless First-Pass Peripheral Angiography Based on Vessel Tree Segmentation
Holger Eggers[1], Rafael Wiemker[1], Peter Börnert[1], Tim Leiner[2]
[1]Philips Research, Hamburg, Germany; [2]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands

2576. Quantification of Fetal Motion Tracked with Volumetric Navigator MRI Acquisitions
Patrick McDaniel[1], Borjan Gagoski[2], M. Dylan Tisdall[3, 4], André J. W. van der Kouwe[3, 4], P. Ellen Grant[2, 4], Lawrence Wald[3, 4], Elfar Adalsteinsson[1, 5]
[1]Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA, United States; [2]Fetal-Neonatal Neuroimaging and Developmental Science Center, Boston Children's Hospital, Harvard Medical School, Boston, MA,

United States; [3]Athinoula A. Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [4]Radiology, Massachusetts General Hopsital, Boston, MA, United States; [5]Health Sciences and Technology, Harvard-MIT, Cambridge, MA, United States

2577. Motion Detection and Correction Using Non-Marker-Attached Optical System During MRI Scanning
Jin Liu[1], Huijun Chen[2], Zechen Zhou[2], Jinnan Wang[3], Chun Yuan[1]
[1]University of Washington, Seattle, WA, United States; [2]Tsinghua University, Beijing, China; [3]Philips Research North America, NY, United States

2578. *In-Vivo* MR-Derived Non-Rigid Motion Correction of Simultaneously Acquired PET
Thomas Küstner[1, 2], Christian Würslin[1], Sergios Gatidis[1], Petros Martirosian[3], Nina Schwenzer[1], Bin Yang[2], Holger Schmidt[1]
[1]Department of Radiology, University Hospital of Tübingen, Tübingen, Baden-Württemberg, Germany; [2]Institute of Signal Processing and System Theory, University of Stuttgart, Stuttgart, Baden-Württemberg, Germany; [3]Diagnostic and Interventional Radiology, University Hospital of Tübingen, Tübingen, Baden-Württemberg, Germany

2579. Motion Compensation (MoCo) for Simultaneous PET/MR Based on Strongly Undersampled Radial MR Data - A Simulation Study
Christopher M. Rank[1], Thorsten Heußer[1], Marcus Brehm[1], Marc Kachelrieß[1]
[1]Division of Medical Physics in Radiology, German Cancer Research Center, Heidelberg, Germany

Traditional Poster
New Insights & Innovations in Cardiovascular MRI

Exhibition Hall Thursday 10:30-12:30

2580. A Novel Framework for Unified Analysis of *In-Vivo* and *Ex-Vivo* Cardiac Data Using an *In-Vivo* MRI-Derived 3D Printed Model: Application to Cardiac MRI
Sébastien Roujol[1], Cory Tschabrunn[1], Tamer A. Basha[1], Kraig V. Kissinger[1], Warren J. Manning[1, 2], Mark E. Josephson[1], Elad Anter[1], Reza Nezafat[1]
[1]Department of Medicine, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, United States; [2]Department of Radiology, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, United States

2581. Biomimetic Phantom for Cardiac Diffusion Magnetic Resonance Imaging
Irvin Teh[1], Penny L. Hubbard Cristinacce[2, 3], Feng-Lei Zhou[2, 4], Geoffrey JM Parker[2, 3], Jürgen E. Schneider[1]
[1]Division of Cardiovascular Medicine, Radcliffe Department of Medicine, University of Oxford, Oxford, United Kingdom; [2]Centre for Imaging Sciences, Manchester Academic Health Sciences Centre, The University of Manchester, Manchester, United Kingdom; [3]Biomedical Imaging Institute, The University of Manchester, Manchester, United Kingdom; [4]The School of Materials, The University of Manchester, Manchester, United Kingdom

2582. Influence of Metformin and Insulin on Myocardial Substrate Selection by 13C MRS
Cyonna Holmes[1], Sarah Brant[1], LaShondra Powell[1], Michael Erik Jessen[1], Matthias Peltz[1]
[1]Cardiovascular and Thoracic Surgery, University of Texas Southwestern Medical Center, Dallas, TX, United States

2583. Cardiac Activity Detection with the Noise Variance of a Receive Coil
Robin Navest[1], Cornelis van den Berg[1], Alexander Raaijmakers[1], Peter Luijten[1], Jan Lagendijk[1], Anna Andreychenko[1]
[1]Imaging Division, UMC Utrecht, Utrecht, Netherlands

2584. Comparison of High Resolution LGE and High Resolution Electro-Anatomical Mapping for Imaging of the Ventricular Arrhythmia Substrate in a Swine Model of Ventricular Tachycardia
Sébastien Roujol[1], Tamer A. Basha[1], Cory Tschabrunn[1], Kraig V. Kissinger[1], Warren J. Manning[1, 2], Mark E. Josephson[1], Elad Anter[1], Reza Nezafat[1]
[1]Department of Medicine, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, United States; [2]Department of Radiology, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, United States

2585. High Resolution *In Vivo* Cardiac MRI of Zebrafish with an Integrated Coil Flow Cell Design

Gavin D. Merrifield[1], Lindsay Gallagher[1], James Mullin[1], Carl S. Tucker[2], Maurits A. Jansen[2, 3], William M. Holmes[1], Martin A. Denvir[2]
[1]Glasgow Experimental MRI Centre, University of Glasgow, Glasgow, United Kingdom; [2]University of Edinburgh/British Heart Foundation Centre for Cardiovascular Science, University of Edinburgh, Edinburgh, Midlothian, United Kingdom; [3]Edinburgh Preclinical Imaging, University of Edinburgh, Edinburgh, Midlothian, United Kingdom

2586. A Pilot Study of Early Cognitive and Brain Imaging Changes Associated with Risk Factors for Cardiovascular Disease

Victoria X. Wang[1], Cheuk Tang[2], Maryann McLaughlin[3], Edmund Wong[1], Johnny C. Ng[1], Lazar Fleysher[1], Fayad A. Zahi[4], Maceda Cynara, Heather N. Beebe, Joseph Friedman
[1]Radiology, Mount Sinai School of Medicine, New York, NY, United States; [2]Radiology & Psychiatry, Mount Sinai School of Medicine, New York, NY, United States; [3]Cardiology & Medicine, Mount Sinai School of Medicine, New York, NY, United States; [4]Radiology & Cardiology, Mount Sinai School of Medicine, New York, NY, United States

2587. Quantitative Myocardial T1 and T2 Mapping in a Swine Model of Ventricular Tachycardia

Sébastien Roujol[1], Tamer A. Basha[1], Cory Tschabrunn[1], Kraig V. Kissinger[1], Warren J. Manning[1, 2], Mark E. Josephson[1], Elad Anter[1], Reza Nezafat[1]
[1]Department of Medicine, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, United States; [2]Department of Radiology, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, United States

2588. fMRI Study of the Hemodynamics of Calf Muscle During Exercise in Peripheral Arterial Disease

Zhijun Li[1], Matthew Muller[2], Jianli Wang[1], Christopher Sica[1], Liang Han[1], Prasanna Karunanayaka[1], Jeffrey Vesek[1], Qing X. Yang[1, 3], Lawrence Sinoway[2]
[1]Center for NMR Research, Department of Radiology, College of Medicine, The Pennsylvania State University, Hershey, PA, United States; [2]Heart and Vascular Institute, College of Medicine, The Pennsylvania State University, PA, United States; [3]3Department of Neurosurgery, College of Medicine, The Pennsylvania State University, PA, United States

2589. Self-Navigated 100µs Echo Time 3D Radial Whole-Heart Coronary Magnetic Resonance Angiography: A Feasibility Study.

Simone Coppo[1], Jean Delacoste[1], Gabriele Bonanno[1], Davide Piccini[1, 2], Matthias Stuber[1]
[1]Department of Radiology, University Hospital (CHUV), University of Lausanne (UNIL), Center for Biomedical Imaging (CIBM), Lausanne, Switzerland; [2]Advanced Clinical Imaging Technology, Siemens Healthcare IM BM PI, Lausanne, Switzerland

2590. *In Vivo* Cardiac DTI on a Widely-Available Clinical Scanner

Christopher Nguyen[1], Zhaoyang Fan[1], Xiaoming Bi[2], Debiao Li[1]
[1]Biomedical Imaging Research Institute, Cedars Sinai Medical Center, Los Angeles, CA, United States; [2]Siemens Healthcare, Los Angeles, CA, United States

2591. *In-Vivo* Free-Breathing DTI & IVIM of the Whole Human Heart Using a Real-Time Slice-Followed SE-EPI Navigator-Based Sequence: A Reproducibility Study in Healthy Volunteers.

Kévin Moulin[1, 2], Pierre Croisille[1, 3], Thorsten Feiweier[4], Benedicte M.A. Delattre[1], Hongjiang Wei[1], Benjamin Robert[2], Olivier Beuf[1], Magalie Viallon[1, 3]
[1]CREATIS; CNRS (UMR 5220); INSERM (U1044); INSA Lyon; Université de Lyon, Lyon, France; [2]Siemens Healthcare France, Saint-Denis, France; [3]Department of Radiology, Centre Hospitalier Universitaire de Saint- Etienne, Université Jean-Monnet, France; [4]Healthcare, Siemens AG, Erlangen, Germany

2592. Diffusion Tensor MRI of Hearts with Chronic Infarct in Multiple Mechanical States

Maelene Lohezic[1], Remi Peyronnet[2], Craig A. Lygate, Debra McAndrew, Irvin Teh[1], Peter Kohl[2, 3], Jurgen E. Schneider[1]

[1]BMRU, Division of Cardiovascular Medicine, Radcliffe Department of Medicine, University of Oxford, Oxford, United Kingdom; [2]National Heart and Lung Institute, Imperial College London, London, United Kingdom; [3]Department of Computer Science, University of Oxford, Oxford, United Kingdom

2593. Investigating the Hemodynamics of Calf Muscle During Exercise Using Independent Component Analysis (ICA)
Zhijun Li[1], Prasanna Karunanayaka[1], Matthew Muller[2], Lawrence Sinoway[2], Qing X. Yang[1, 3]
[1]Center for NMR Research, Department of Radiology, College of Medicine, The Pennsylvania State University, Hershey, PA, United States; [2]Heart and Vascular Institute, College of Medicine, The Pennsylvania State University, PA, United States; [3]Department of Neurosurgery, College of Medicine, The Pennsylvania State University, PA, United States

2594. Optimized Free-Breathing Inner-Volume Black-Blood (FB-IV-BB) Cine FSE of the Descending Aorta
Jyh-Miin Lin[1], Chengcheng Zhu[2], Hsiao-Wen Chung[3], Martin Graves[4], Andrew Patterson[4]
[1]Department of Radiolgoy, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom; [2]Department of Radiology, UCSF School of Medicine, San Francisco, CA, United States; [3]Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan; [4]Department of Radiology, Cambridge University Hospitals NHS Foundation Trust, Cambridge, United Kingdom

2595. Towards a Subject-Specific Calibration of a Systole Model for CMR Undergoing Heart Rate Variations
Pierre-André Vuissoz[1, 2], Christophe Meyer[1, 2], Jacques Felblinger[3, 4], Laurent Bonnemains[1, 2]
[1]Imagerie Adaptative Diagnostique et Interventionnelle, Université de Lorraine, Nancy, France; [2]U947, INSERM, Nancy, France; [3]CIC-IT 1433, INSERM, Nancy, France; [4]University Hospital Nancy, Nancy, France

2596. R Wave Peak Detection Using Wavelet Decomposition and Multi-Level Thresholding for ECGs Acquired in MR Scanner
Manivannan Jayapalan[1], Bhargav Bhatt[2], Vijikumar N[3]
[1]MR PSD & Applications, GE Healthcare, Bangalore, Karnataka, India; [2]MR Systems, GE Healthcare, Bangalore, Karnataka, India; [3]MR Applications, GE Healthcare, Bangalore, Karnataka, India

Traditional Poster
Cardiovascular MR - Tissue Characterization
Exhibition Hall Thursday 10:30-12:30

2597. Distribution and Significance of Myocardial Hyperintensity on T2-Weighted MRI of Hypertrophic Cardiomyopathy
Yasuo Amano[1], Kumiko Mine[1], Fumi Yamada[1], Shinichiro Kumita[1]
[1]Radiology, Nippon Medical School, Tokyo, Japan

2598. Combination of T2-Magnetization Preparation and Slice Interleaved Inversion Recovery for Improved Motion Correction of Myocardial Extra-Cellular Volume Mapping Using Spoiled Gradient Echo Imaging
Sébastien Roujol[1], Tamer A. Basha[1], Jihye Jang[1], Kraig V. Kissinger[1], Beth Goddu[1], Sophie Berg[1], Warren J. Manning[1, 2], Reza Nezafat[1]
[1]Department of Medicine, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, United States; [2]Department of Radiology, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, United States

2599. High Spatial Resolution Myocardial T_2^* Mapping at 7.0 T Reveals Differences Between Healthy Volunteers and Patients with Hypertrophic Cardiomyopathy
Till Huelnhagen[1], Fabian Hezel[1], Andreas Pohlmann[1], Andreas Graessl[1], Jan Rieger[2], Darius Lysiak[2], Christof Thalhammer[1], Peter Kellman[3], Marcel Prothmann[4], Jeanette Schulz-Menger[4, 5], Thoralf Niendorf[1, 5]
[1]Berlin Ultrahigh Field Facility (B.U.F.F.), Max-Delbrueck Center for Molecular Medicine (MDC), Berlin, Germany; [2]MRI.TOOLS GmbH, Berlin, Germany; [3]National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD, United States; [4]Dept. of Cardiology and Nephrology, HELIOS Klinikum Berlin-Buch, Berlin, Germany; [5]Experimental and Clinical Research Center, a joint cooperation between the Charite Medical Faculty and the Max-Delbrueck Center, Berlin, Germany

2600. Improved Accuracy of T1 Mapping Reconstruction Using a Novel Bloch Equation-Based Fitting with Graphic Processing Unit Implementation

Sébastien Roujol[1], Tamer A. Basha[1], Jihye Jang[1], Sophie Berg[1], Warren J. Manning[1, 2], Reza Nezafat[1]
[1]Department of Medicine, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, United States; [2]Department of Radiology, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, United States

2601. Multimodality Cardiac Magnetic Resonance Imaging to Assess Large Intramural Lesions of a New Irrigated Needle Catheter on Sheep Infarct Model

Julie Magat[1], Benjamin Berte[1], Hubert Cochet[1], Jérôme Naulin[1], Daniele Ghidoli[2], Pierre Jais[1], Stephen Henry Gilbert[3], Olivier Bernus[1], Bruno Quesson[1]
[1]IHU-LIRYC U1045, University of Bordeaux, Pessac, France; [2]Biosense Webster ,R&D, Diamond Bar, CA, United States; [3]Mathematical Cell Physiology, Max Delbrück Center for Molecular Medicine, Berlin, Germany

2602. MRI Visible Bioscaffold for Stem Cell-Mediated Repair and Improved Cardiac Function

Laurence H. Jackson[1], Thomas Roberts[1], Valerie Taylor[1], Josef Habib[2], Daniel J. Stuckey[1], Mark F. Lythgoe[1]
[1]Centre for Advanced Biomedical Imaging, University College London, London, United Kingdom; [2]Imaging Sciences and Biomedical Engineering, Perinatal Imaging and Health, Kings College London, London, United Kingdom

2603. *In Vivo* Assessment of Free Radicals in a Mouse Model for Diabetic Cardiomyopathy

Rheal A. Towner[1], Nataliya Smith[1], Jorge Carrizales[1], Debra Sauners[1], Robert Silasi-Mansat[2], Florea Lupu[2], Marilyn Ehrenshaft[3], Ronald P. Mason[3]
[1]Advanced Magnetic Resonance Center, Oklahoma Medical Research Foundation, Oklahoma City, OK, United States; [2]Cardiovascular Biology, Oklahoma Medical Research Foundation, Oklahoma City, OK, United States; [3]NIEHS, NC, United States

2604. Free-Breathing Multi-Slice Myocardial T2 Mapping

Tamer Basha[1], Sébastien Roujol[1], Reza Nezafat[1]
[1]Department of Medicine, Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA, United States

2605. Cardiovascular Magnetic Resonance T2-STIR Imaging Is Unable to Discriminate Between Intramyocardial Haemorrhage and Microvascular Obstruction

Esben Søvsø Szocska Hansen[1, 2], Steen Fjord Pedersen[3], Steen Bønnelykke Pedersen[4], Uffe Kjærgaard[1], Nikolaj Hjort Schmidt[5], Hans Erik Bøtker[6], Won Yong Kim[1, 6]
[1]The MR Research Centre, Aarhus University, Skejby, Aarhus, Denmark; [2]Danish Diabetes Academy, Odense, Denmark; [3]Dept. of Cardiothoracic and Vascular Surgery T, Aarhus University Hospital Skejby, Skejby, Aarhus N, Denmark; [4]Dept. of Department of Endocrinology and Internal Medicine, Aarhus University Hospital THG, Skejby, Aarhus, Denmark; [5]Department of Clinical Medicine - Comparative Medicine Laboratory, Aarhus University, Skejby, Aarhus, Denmark; [6]Dept. of Cardiology, Aarhus University Hospital Skejby, Skejby, Aarhus, Denmark

2606. Measurement of Quantitative Myocardial Blood Volume and Water Exchange Using Ferumoxytol

Neil Chatterjee[1], Octavia Bane[2], Bruce Spottiswoode[3], James Carr[4], Timothy Carroll[4]
[1]Biomedical Engineering, Northwestern University, Chicago, IL, United States; [2]Mount Sinai, NY, United States; [3]Siemens Healthcare, Chicago, IL, United States; [4]Radiology, Northwestern University, IL, United States

2607. *In-Vivo* Right-Ventricular Myocardial T1 Mapping at 3.0 Tesla

Nadja M. Meßner[1], Lothar R. Schad[1], Frank G. Zöllner[1]
[1]Computer Assisted Clinical Medicine, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany

2608. First and Second Order Motion Compensated Spin-Echo Diffusion Tensor Imaging of the Human Heart

Christian Torben Stoeck[1, 2], Constantin von Deuster[1, 2], Martin Genet[1], David Atkinson[3], Sebastian Kozerke[1, 2]
[1]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [2]Imaging Sciences and Biomedical Engineering, King's College London, London, United Kingdom; [3]Centre for Medical Imaging, University College London, London, United Kingdom

2609. Comparison of High Resolution T_2^* Mapping and Quantitative Susceptibility Mapping to Investigate Myocardial Microstructure in the *Ex Vivo* Rodent Heart
Eva Peper[1], Till Huelnhagen[1], Andreas Pohlmann[1], Min-Chi Ku[1], Thoralf Niendorf[1, 2]
[1]Berlin Ultrahigh Field Facility (B.U.F.F.), Max Delbrück Center for Molecular Medicine, Berlin, Germany; [2]Experimental and Clinical Research Center, a joint cooperation between the Charité Medical Faculty and the Max Delbrück Center, Berlin, Germany

2610. Monitoring the Resorption of Myocardial Infarct in the Presence and Absence of Coronary Microemboli Using MRI and Microscopy
Maythem Saeed[1], Loi Do[1], Roland Krug[1], Steven W. Hetts[1], Mark W. Wilson[1]
[1]Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, Ca, United States

2611. High Resolution 2D ECG-Segmented Slice Interleaved T_1 Mapping (STONE) with Reduced Partial Voluming
Jihye Jang[1, 2], Tamer Basha[1], Sophie Berg[1], Cory Tschabrunn[1], Elad Anter[1], Sébastien Roujol[1], Reza Nezafat[1]
[1]Department of Medicine, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, United States; [2]Computer Aided Medical Procedures, Technische Universität München, Munich, Bayern, Germany

2612. Verification of the Intra-Voxel Incoherent Motion (IVIM) Model in the Porcine Heart
Constantin von Deuster[1, 2], Christian T. Stoeck, [12], Lukas Wissmann[2], Georg Spinner[2], Thea Fleischmann[3, 4], Maximilian Y. Emmert[4, 5], Nikola Cesarovic[4], Sebastian Kozerke, [12]
[1]Division of Imaging Sciences and Biomedical Engineering, King's College London, London, United Kingdom; [2]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [3]Institute of Laboratory Animal Science, University of Zurich, Zurich, Switzerland; [4]Department of Surgical Research, University Hospital Zurich, Zurich, Switzerland; [5]Swiss Center of Regenerative Medicine, Zurich, Switzerland

2613. Characterization of Chronic Myocardial Infarctions in Patients with Contrast-Free T1 Maps at 3T
Avinash Kali[1, 2], Eui-Young Choi[3], Behzad Sharif[1], Young Jin Kim[3], Xiaoming Bi[4], Bruce Spottiswoode[5], Ivan Cokic[1], Hsin-Jung Yang[1, 2], Mourad Tighiouart[6], Debiao Li[1], Daniel S. Berman[1, 7], Byoung Wook Choi[3], Hyuk-Jae Chang[3], Rohan Dharmakumar[1, 8]
[1]Biomedical Imaging Research Institute, Cedars-Sinai Medical Center, Los Angeles, CA, United States; [2]Department of Bioengineering, University of California, Los Angeles, CA, United States; [3]Yonsei University College of Medicine, Seoul, Korea; [4]Siemens Healthcare, Los Angeles, CA, United States; [5]Siemens Healthcare, Chicago, IL, United States; [6]Biostatistics and Bioinformatics Research Center, Cedars-Sinai Medical Center, Los Angeles, CA, United States; [7]Cedars-Sinai Heart Institute, Cedars-Sinai Medical Center, Los Angeles, CA, United States; [8]Department of Medicine, University of California, Los Angeles, CA, United States

2614. 3D Dynamic T1 Mapping of the Myocardium Using a Time-Varying Subspace
Anthony G. Christodoulou[1], Zhi-Pei Liang[1]
[1]Beckman Institute and Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States

2615. Highly Accelerated Free-Breathing Whole Heart T1/T2/Proton Density Mapping
Jing Liu[1], David Saloner[1, 2]
[1]Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [2]Radiology Service, VA Medical Center, San Francisco, CA, United States

2616. Noncontrast T1 Mapping Is Independently Associated with Myocardial Fat in Healthy African Americans
Chia-Ying Liu[1], David A. Bluemke[1], Gary Gerstenblith[2], Stefan L. Zimmerman[2], Ji Li[2], Hong Zhu[2], Shenghan Lai[2], Hong Lai[2]
[1]Radiology and Imaging Sciences, NIH, Bethesda, MD, United States; [2]Johns Hopkins School of Medicine, MD, United States

2617. Effect of Blood T1 Value on Extracellular Volume Fraction in Dilated Cardiomyopathy with Septal Scarring
Yasuo Amano[1], Masaki Tachi[1], Keisuke Inui[2], Fumi Yamada[1], Makoto Obara[3], Shogo Imai[1], Shinichiro Kumita[1]
[1]Radiology, Nippon Medical School, Tokyo, Japan; [2]Cardiology, Nippon Medical School, Tokyo, Japan; [3]Philips Asia Pacific, Tokyo, Japan

2618. Effects of Supplemental Oxygen on Cardiovascular Relaxation Parameter Mapping (T1, T2 and T2*)
James W. Goldfarb[1, 2], Kathleen Gliganic[1], Nathaniel Reichek[1, 2]
[1]Research and Education, Saint Francis Hospital, Roslyn, NY, United States; [2]Biomedical Engineering, Stony Brook University, Stony Brook, NY, United States

2619. KWIC-Filtered Cardiac T_2 Mapping for Improved Precision and Faster Acquisition
Emeline Lugand[1, 2], Jérôme Yerly[1, 2], Hélène Feliciano[1, 2], Jérôme Chaptinel[1, 2], Matthias Stuber[1, 2], Ruud B. van Heeswijk[1, 2]
[1]Department of Radiology, University Hospital (CHUV) and University of Lausanne (UNIL), Lausanne, Switzerland; [2]Center for Biomedical Imaging (CIBM), Lausanne, Switzerland

2620. Non-Contrast Characterization of Interstitial Cardiac Remodeling in Chronic Kidney Disease Patients
Tori A. Stromp[1], Steve W. Leung[2, 3], Vincent L. Sorrell[2, 3], Moriel H. Vandsburger, [12]
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2621. Myocardial Tissue Characterization from Cine BSSFP Signal Waveforms and Longitudinal Shortening Identifies Edematous and Fibrotic Myocardium in Agreement with Gadolinium Enhanced Imaging
Richard Dylan Lawless[1], Steve Leung[1, 2], Tori Stromp[1], Katherine Thompson[3], Vincent Sorrell[1, 2], Moriel Vandsburger[1, 4]
[1]Saha Cardiovascular Research Center, University of Kentucky, Lexington, KY, United States; [2]Gill Heart Institute, University of Kentucky, KY, United States; [3]Department of Statics, University of Kentucky, KY, United States; [4]Department of Physiology, University of Kentucky, KY, United States

2622. Myocardial T_1 Mapping Comparing $SMART_1$Map and MOLLI: Clinical Experience at 3T
Erik P. Skulborstad[1], Zachary S. Borden[1], Karl K. Vigen[1], Glenn S. Slavin[2], Kang Wang[3], Mark L. Schiebler[1], Scott K. Nagle[1], Scott B. Reeder[1, 4], Thomas M. Grist[1, 4], Christopher J. Francois[1]
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2623. Myocardium and Blood T_1 Measurement Using $SMART_1$Map in Healthy Volunteers at 1.5T
Pauline Ferry[1, 2], Glenn S. Slavin[3], Anne Menini[4], Anja Brau[5], Damien Mandry[1, 6], Laurent Bonnemains[1, 6], Jacques Felblinger[1, 7], Marine Beaumont[8, 9]
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2624. Bloch Equation Simulation with Slice Profile Correction (BLESSPC) T1 Estimation- Enabling Accurate and Precise Myocardial T1 Mapping at 3.0T Using the FLASH-Readout Based MOLLI Sequence
Jiaxin Shao[1], Stanislas Rapacchi[1], Kim-Lien Nguyen[1, 2], Peng Hu[1, 3]
[1]Department of Radiological Sciences, David Geffen School of Medicine, University of California, Los Angeles, CA, United States; [2]Department of Medicine, Division of Cardiology, David Geffen School of Medicine, University of Calif, Los Angeles, CA, United States; [3]Biomedical Physics Inter-Departmental Graduate Program, University of California, Los Angeles, CA, United States

2625. Free-Breathing Multi-Slice Myocardial T1 Mapping Using Inversion Recovery Slice Interleaved Spoiled Gradient Echo Imaging

Sébastien Roujol[1], Jihye Jang[1, 2], Tamer A. Basha[1], Sebastian Weingärtner[1, 3], Sophie Berg[1], Reza Nezafat[1]
[1]Department of Medicine, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, United States; [2]Computer Aided Medical Procedures, Technische Universität München, Munich, Germany; [3]Computer Assisted Clinical Medicine, University Medical Center Mannheim, Heidelberg University, Mannheim, Germany

2626. Motion Corrected Model-Based Acceleration of Parameter Mapping (MOCO-MAP) for Improved Late Gd Enhancement Imaging in Cardiac MRI

Tobias Wech[1], Felix Rützel[1, 2], Johannes Tran-Gia[1], Andreas Schindele[3], Theresa Reiter[4], Thorsten Klink[1], Michael Braun[1, 2], Alfio Borzi[3], Walter H. Kullmann[2], Thorsten A. Bley[1], Herbert Köstler[1]
[1]Department of Diagnostic and Interventional Radiology, University of Wuerzburg, Würzburg, Germany; [2]Institute of Medical Engineering, University of Applied Sciences Würzburg-Schweinfurt, Schweinfurt, Germany; [3]Institute of Mathematics, University of Wuerzburg, Würzburg, Germany; [4]Department of Internal Medicine I, University of Wuerzburg, Würzburg, Germany

2627. Rapid Automatic Segmentation of Enhanced Tissue in LGE MRI of Long-Standing Persistent Atrial Fibrillation

Archontis Giannakidis[1, 2], Shouvik Haldar[1], Eva Nyktari[1], Jennifer Keegan[1, 2], Irina Suman Horduna[1], Dudley J. Pennell[1, 2], Raad Mohiaddin[1, 2], Tom Wong[1], David N. Firmin[1, 2]
[1]NIHR Cardiovascular Biomedical Research Unit, Royal Brompton Hospital, London, United Kingdom; [2]National Heart Lung Institute, Imperial College London, London, United Kingdom

2628. Evaluation of Late Gadolinium Enhancement in Non-Ischemic Cardiomyopathy at 3T Using Motion Corrected Free Breathing Single Shot SSFP

Ian Gavin Murphy[1], Oisin Flanagan[1], Marcos J. Botelho[1], Jeremy Collins[1], Bruce J. Spottiswoode[2], Maria J. Carr[2], Michael Markl[2], Robert R. Edelman[3], James C. Carr[1]
[1]Cardiovascular Imaging, Feinberg School of Medicine, Northwestern Memorial Hospital, CHICAGO, IL, United States; [2]Cardiovascular Imaging, Northwestern University, CHICAGO, IL, United States; [3]Cardiovascular Imaging, Northshore Hospital, Evanston, IL, United States

2629. A Reference Dataset of *In-Vivo* Human Left-Ventricular Fiber Architecture in Systole and Diastole

Constantin von Deuster[1, 2], Christian T. Stoeck, [12], Martin Genet[2], Nicolas Toussaint[3], David Atkinson[4], Sebastian Kozerke, [12]
[1]Division of Imaging Sciences and Biomedical Engineering, King's College London, London, United Kingdom; [2]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [3]Dept of Med Phys & Biomedical Eng, University College London, London, United Kingdom; [4]Centre for Medical Imaging, University College London, London, United Kingdom

2630. The Left Ventricular Global Function Index by Cardiac Magnetic Resonance Is More Strongly Negatively Affected by Myocardial Iron Overload Than the Global Systolic Function

Antonella Meloni[1], Vincenzo Positano[1], Antonino Vallone[2], Paolo Preziosi[3], Maria Chiara Resta[4], Gennaro Restaino[5], Maria Giovanna Neri[1], Roberta Renni[6], Monica Benni[7], Petra Keilberg[1], Cristina Salvatori[8], Alessia Pepe[1]
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2631. Prospective Changes of Cardiac and Hepatic Iron and Cardiac Function in Low and Intermediate-1 Risk MDS Patients

Antonella Meloni[1], Michele Rizzo[2], Giovanni Carulli[3], Esther Natalie Oliva[4], Francesco Arcioni[5], Sergio Storti[6], Maria Giovanna Neri[1], Stefania Renne[7], Emanuele Grassedonio[8], Gennaro Restaino[9], Vincenzo Positano[1], Alessia Pepe[1]
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2632. Estimation of Error Maps for Evaluating Precision of Myocardial T2* Mapping Techniques

Christopher M. Sandino[1, 2], Peter Kellman[2], Michael S. Hansen[2], Andrew E. Arai[2], Hui Xue[2]
[1]Ming Hsieh Department of Electrical Engineering, University of Southern California, Los Angeles, CA, United States; [2]Lab of Cardiac Energetics, National Heart, Lung, and Blood Institute, Bethesda, MD, United States

2633. Improved 2D Slice-Interleaved Flow-Independent Black Blood Cardiac Imaging Using Ferumoxytol

Junfei Lu[1], J Paul Finn[2, 3], Peng Hu[2, 3]
[1]Department of Bioengineering, UCLA, Los Angeles, CA, United States; [2]Department of Radiological Sciences, UCLA, Los Angeles, CA, United States; [3]Biomedical Physics Inter-Departmental Graduate Program, UCLA, Los Angeles, CA, United States

2634. Preliminary Rat Myocardial Tissue Characterisation at 4.7T

Matthew Firth[1], Marco Mingarelli[1], Hugh Seton[1], Dana Dawson[1]
[1]University of Aberdeen, Aberdeen, United Kingdom

2635. Enhancing Referenceless Phase Sensitive Reconstruction Using Geometry Based B0 Simulation

Jinnan Wang[1], Rene Bastkowski[2], Jeffrey H. Maki[3], Chun Yuan[3], Peter Boernert[4]
[1]Philips Reserach North America, Seattle, WA, United States; [2]Philips Reserach Europe, Hamburg, Germany; [3]University of Washington, Seattle, WA, United States; [4]Philips Research Europe, Hamburg, Germany

2636. Can Quantitative Texture Analysis on Cardiac Magnetic Resonance Differentiate Hypertrophic Cardiomyopathy Patients at High Risk of Sudden Cardiac Death and Candidates for Implantable Cardioverter-Defibrillator Placement from Those at Low Risk?

Rebecca E. Thornhill[1, 2], Julie Robillard[3, 4], Michael Gollob[5], Carole Dennie[1, 6], Alexander Dick[7, 8], Edith Kolozsi[7], Elena Pena[1, 6]
[1]Medical Imaging, The Ottawa Hospital, Ottawa, ON, Canada; [2]Radiology, University of Ottawa, Ottawa , ON, Canada; [3]Radiology, Montreal Heart Institute, Montreal, PQ, Canada; [4]Radiologie, Université de Montréal, Montreal, PQ, Canada; [5]Electrophysiology, Peter Munk Cardiac Centre, Toronto, ON, Canada; [6]Radiology, University of Ottawa, Ottawa, ON, Canada; [7]Cardiology, University of Ottawa Heart Institute, Ottawa, ON, Canada; [8]Medicine, University of Ottawa, Ottawa, ON, Canada

2637. Visualization of Cryoballoon Ablation Lesions with 3D LGE Cardiac MR of the Left Atrium

Joseph S. Soltys[1], Ibrahim M. Saeed[2], Sanjaya Gupta[2], Piero Ghedin[3], Anja C.S. Brau[3], James A. Case[1], Timothy M. Bateman[1, 2]
[1]Cardiovascular Imaging Technologies, Kansas City, MO, United States; [2]Saint Luke's Mid America Heart and Vascular Institute, Kansas City, MO, United States; [3]Global Research Center, GE Healthcare, Munich, Germany

2638. Eliminating the Impact of Myocardial Lipid Content on Myocardial T1 Mapping Using a Spectrally-Selective Inversion Pulse

Maryam Nezafat[1, 2], Sébastien Roujol[2], Jihye Jang[2], Tamer Basha[2], René M. Botnar[1]
[1]King’s College London, London, UK, United Kingdom; [2]Beth Israel Deacons Medical Center and Harvard Medical School, Boston, MA, United States

2639. *In Vivo* Spin Echo EPI Cardiac Diffusion Tensor MRI Using Ultrahigh Gradient Amplitudes

Eric Aliotta[1, 2], Stanislas Rapacchi[1], Peng Hu[1], Daniel Ennis[1, 2]
[1]Radiological Sciences, UCLA, Los Angeles, CA, United States; [2]Biomedical Physics IDP, UCLA, Los Angeles, CA, United States

2640. Whole-Heart Free-Breathing Phase-Sensitive Inversion-Recovery Late Gadolinium Enhancement Imaging with High Isotropic Spatial Resolution Using Respiratory Self-Navigation: A First Patient Study
Davide Piccini[1, 2], Simone Coppo[2], Giulia Ginami[2], Gabriele Bonanno[2], Tobias Rutz[3], Gabriella Vincenti[3], Juerg Schwitter[3], Matthias Stuber[2]
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2641. Diagnostic Performance of Native T1 Maps at 3T for Characterizing Chronic Myocardial Infarctions
Avinash Kali[1, 2], Ivan Cokic[1], Hsin-Jung Yang[1, 2], Richard L Q Tang[1], Behzad Sharif[1], Rohan Dharmakumar[1, 3]
[1]Biomedical Imaging Research Institute, Cedars-Sinai Medical Center, Los Angeles, CA, United States; [2]Department of Bioengineering, University of California, Los Angeles, CA, United States; [3]Department of Medicine, University of California, Los Angeles, CA, United States

2642. Ferroportin Regulates Cardiac Iron Homeostasis
Jack Miller[1, 2], Samira Lakhal-Littleton[1], Magda Wolna[1], Carolyn Carr[1], Ana Santos[3], Rebeca Diaz[3], Daniel Biggs[3], Ben Davies[3], Vicky Ball[1], Peter Robbins[1], Damian Tyler[1]
[1]Department of Physiology, Anatomy & Genetics, University of Oxford, Oxford, United Kingdom; [2]Department of Physics, University of Oxford, Oxford, United Kingdom; [3]Wellcome Trust Centre for Human Genetics, University of Oxford, Oxford, United Kingdom

2643. Comparison of MOLLI and AIR Cardiac T1 Mapping Pulse Sequences in a Clinical Population of Cardiomyopathies
Sean Robison[1], Daniel Kim[2], Kyungpyo Hong[2], Emma Hornsey[1], Piyush Srivastava[3, 4], Gerard Smith[1], Leighton Kearney[3], Ruth P. Lim[1, 4]
[1]Department of Radiology, Austin Health, Melbourne, Victoria, Australia; [2]UCAIR, Department of Radiology , University of Utah, Salt Lake City, UT, United States; [3]Department of Cardiology, Austin Health, Melbourne, Victoria, Australia; [4]The University of Melbourne, Melbourne, Victoria, Australia

2644. Assessing Myocardial Infarct Using $T_{1\rho}$ and Late Gadolinium Enhancement *In Vivo*
Elias Ylä-Herttuala[1], Svetlana Laidinen[1], Maarit Pulkkinen[1], Hanne Hakkarainen[1], Timo Liimatainen[1]
[1]Biomedical Imaging Unit, University of Eastern Finland, A. I. Virtanen instute, Kuopio, Finland

2645. Right Ventricular Myocardial T1 Quantification by Free-Breathing Fat-Water Separated Dark Blood Saturation-Recovery Imaging (SASHA)
Peter David Gatehouse[1], Peter Kellman[2], EeLing Heng[1], Michael Gatzoulis[3], James C. Moon[4], Sonya Babu-Narayan[1], David N. Firmin[3]
[1]Royal Brompton Hospital, London, UK, United Kingdom; [2]National Institutes of Health, Bethesda, DC, United States; [3]Royal Brompton Hospital, UK, United Kingdom; [4]The Heart Hospital, University College Hospitals London, London, UK, United Kingdom

2646. Utility of Multi-Slice T1 Mapping by Using Slice Interleaved T1 (STONE) Sequence for the Detection of Diffuse Myocardial Fibrosis in Patients with Hypertrophic Cardiomyopathy
Shingo Kato[1], Roujol Sébastien[1], Jihye Jang[1], Basha Tamer[1], Berg Sophie[1], Kissinger Kraig[1], Goddu Beth[1], Evan Appelbaum[1], Martin Maron[2], Warren J. Manning[3], Nezafat Reza[3]
[1]Department of Medicine, Beth Israel Deaconess Medical Center, Boston, MA, United States; [2]Division of Cardiology, Tufts Medical Center, Boston, MA, United States; [3]Department of Medicine and Radiology, Beth Israel Deaconess Medical Center, Boston, MA, United States

2647. Evaluation of Myocardial Viability in Recent, Sub-Acute and Chronic Myocardial Infarction Using 3.0T CMR Quantitative T1, T2 Mapping and Multi-B DWI Combined with LGE
Mingxi Liu[1], Wanshi Zhang[2], Ziheng Zhang[3], Limin Meng[2], Jie Liu[1], Wanfeng Gong[2]
[1]The Fourth Military Medical Unviersity, Xi'an, Shannxi, China; [2]Air Force General Hospital, Beijing, China; [3]GE Healthcare China, Beijing, China

2648. High Resolution Multi-Slice Myocardial T_2 Mapping with Improved Scan Time Efficiency
Jihye Jang[1, 2], Cory Tschabrunn[1], Elad Anter[1], Tamer Basha[1], Reza Nezafat[1]
[1]Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, United States; [2]Computer Aided Medical Procedures, Technische Universität München, Munich, Bayern, Germany

2649. Enhanced Glucose Oxidation Has No Effect on Hypertrophic Progression in the Abdominal Aortic Banding Model of Left Ventricular Hypertrophy
Lucia F. Giles[1], Vicky Ball[1], Carolyn A. Carr[2], Anne-Marie L. Seymour[3], Lydia Le Page[1], Lucy Ambrose[1], Damian J. Tyler[1]
[1]Department of Physiology, Anatomy and Genetics, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]Department of Physiology, Anatomy and Genetics, , University of Oxford, Oxford, Oxfordshire, United Kingdom; [3]Department of Biological Sciences, University of Hull, Hull, United Kingdom

2650. Noninvasive Three-Dimensional Mapping of Endothelial Dysfunction in Cardiac Ischemia by Dynamic Contrast Enhanced Magnetic Resonance Imaging Using Albumin-Based Contrast Agent
Katrien Vandoorne[1], Moriel H. Vandsburger[2], Yue Han[1], Igor Jacobs[1], Hagit Dafni[3], Klaas Nicolay[1], Gustav J. Strijkers, [14]
[1]Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [2]Department of Physiology, University of Kentucky, KY, United States; [3]Weizmann Institute of Science, Israel; [4]Academic Medical Center, Amsterdam, Netherlands

Traditional Poster
Vessel Wall
Exhibition Hall Thursday 10:30-12:30

2651. Imaging of Abdominal Aortic Aneurysm Morphology and Inflammation Using 3D Isotropic Black Blood MRI
Chengcheng Zhu[1], Henrik Haraldsson[1], Sinyeob Ahn[2], Jing Liu[1], Michael Hope[1], David Saloner[1]
[1]Radiology, UCSF, San Francisco, Califronia, United States; [2]Siemens Healthcare, CA, United States

2652. Assessment of Calcification Size and Juxtaluminal Status Using Gray-Blood 3D Vessel Wall MRI
Niranjan Balu[1], Jie Sun[1], Jin Liu[2], Shuo Chen[3], Huijun Chen[3], Chun Yuan[1]
[1]Radiology, University of Washington, Seattle, WA, United States; [2]Bioengineering, University of Washington, Seattle, WA, United States; [3]CBIR, Tsinghua University, Beijing, China

2653. Three-Dimensional Multi-Contrast Assessment of the Aortic Wall at 3 Tesla
Iulius Dragonu[1, 2], Thomas Wehrum[2], Christoph Strecker[2], Benjamin R. Knowles[1], Jürgen Hennig[1], Andreas Harloff[2]
[1]Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]Neurology, University Medical Center Freiburg, Freiburg, Germany

2654. 3D Large Coverage Atherosclerotic Plaque Assessment with Single Scan (APASS): Preliminary Application in Carotid Artery and Femoral Artery
Shuo Chen[1], Zechen Zhou[1], Huijun Chen[1], Bida Zhang[2], Rui Li[1], Jinnan Wang[3, 4], Chun Yuan[1, 3], Xihai Zhao[1]
[1]Center for Biomedical Imaging Research, Department of Biomedical Engineering, School of Medicine, Tsinghua University, Beijing, China; [2]Healthcare Department, Philips Research China, Shanghai, China; [3]Department of radiology, University of Washington, Seattle, United States; [4]Philips Research North America, Briarcliff Manor, NY, United States

2655. Optimizing T1w-SPACE for Intracranial Arterial Imaging
Lei Zhang[1], Jaeseok Park[2], Jun Wu[3], Xin Liu[1], Yiu-Cho Chung[1]
[1]Paul C. Lauterbur Center for Biomedical Imaging, Shenzhen Institutes of Advanced Technology, Chinese Academic of Sciences, Shenzhen, Guangdong, China; [2]department of brain and cognitive engineering, Korea university, Seoul, Korea; [3]Neurology, Peking University Shenzhen Hospital, Shenzhen, Guangdong, China

2656. Large Coverage 3D Combined Angiography and Plaque Risk Identification (3D-CAPRI)
Haining Liu[1], Niranjan Balu[2], Jinnan Wang[3], Chun Yuan[1, 4]
[1]Bioengineering Department, University of Washington, Seattle, WA, United States; [2]Radiology Department, University of Washington, Seattle, WA, United States; [3]Philips Research North America, NY, United States; [4]Bioengineering Department, Tsinghua University, Beijing, China

2657. Carotid Pulse Wave Velocity Measurements Using Accelerated High Temporal Resolution MRI
Abdallah G. Motaal[1, 2], Wouter WV Potters[1], Huiming Dong[2], Luc M. J. Florack[3], Klaas Nicolay[2], Aart J. Nederveen[1], Gustav J. Strijkers[2, 4], Bram F. Coolen[1]
[1]Department of Radiology, Academic Medical Center, Amsterdam, Netherlands; [2]Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [3]Mathematics and Computer Science, Eindhoven University of Technology, Eindhoven, North Brabant, Netherlands; [4]Department of Biomedical Engineering and Physics, Academic Medical Center, Amsterdam, Netherlands

2658. *In Vivo* Quantification and Correlation of Intracranial Aneurysm Wall Thickness and Wall Shear Stress
Roos Blankena[1, 2], Rachel Kleinloog[1], Pim van Ooij[3], Bon Verweij[1], Bennie ten Haken[2], Jaco Zwanenburg[4]
[1]Neurology and Neurosurgery, Brain Center Rudolf Magnus, University Medical Center Utrecht, Utrecht, Netherlands; [2]Technical Medicine, University of Twente, Enschede, Overijssel, Netherlands; [3]Biomedical Engineering & Physics, Academic Medical Center, Amsterdam, Noord-Holland, Netherlands; [4]Radiology, University Medical Center Utrecht, Utrecht, Netherlands

2659. Ultra-High Field MRI of Aortic Plaques in a Rabbit Model: Initial Experience and Comparison Between 1.5T, 3T and 7T
Claudia Calcagno[1], Martin J. Willemink[2], Bei Zhang[1], Hadrien Dyvorne[1], Philip M. Robson[1], Olivier Lairez[1], Bram F. Coolen[3], Gustav J. Strijkers[4], Tim Leiner[2], Venkatesh Mani[1], Willem JM Mulder[1, 3], Zahi A. Fayad[1]
[1]Department of Radiology, Icahn School of Medicine at Mount Sinai, New York, NY, United States; [2]Department of Radiology, University Medical Center Utrecht, Utrecht, The Netherlands, Netherlands; [3]Department of Radiology, Academic Medical Center, Amsterdam, The Netherlands, Netherlands; [4]Department of Biomedical Engineering and Physics, Academic Medical Center, Amsterdam, The Netherlands, Netherlands

2660. Feasibility and Signal Analysis of DANTE-TSE with Variable Flip Angles for Intracranial Vessel Wall Imaging at 7 Tesla
Olivia Viessmann[1], Linqing Li[1], Peter Jezzard[1]
[1]Nuffield Department of Clinical Neurosciences, Oxford Centre for Functional Magnetic Resonance Imaging of the Brain, Oxford, United Kingdom

2661. Quantitative MR Imaging of *Ex Vivo* Intracranial Atherosclerotic Plaques at 7.0 Tesla
A.A. Harteveld[1], N.P. Denswil[2], J.C.W. Siero[1], J.J.M. Zwanenburg[1, 3], A. Vink[4], W.G.M. Spliet[4], P.R. Luijten[1], M.J. Daemen[2], J. Hendrikse[1], A.G. van der Kolk[1]
[1]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]Department of Pathology, Academic Medical Center, Amsterdam, Netherlands; [3]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands; [4]Department of Pathology, University Medical Center Utrecht, Utrecht, Netherlands

Traditional Poster
CE & Non-CE MRA
Exhibition Hall Thursday 10:30-12:30

2662. Comparison of DANTE- And IMSDE-Based Methods for Subtractive NCE-MRA of the Central Thoracic Vein
Andrew N. Priest[1], Kristian H. Mortensen[1], David J. Lomas[1]
[1]Department of Radiology, Addenbrooke's Hospital and Cambridge University, Cambridge, United Kingdom

2663. ZTE for Whole Heart Imaging - Initial Results, Limitations and Challenges at 1.5T
Peter Börnert[1, 2], Jan Groen[3], Christian Stehning[1], Jouke Smink[3], Kay Nehrke[1]

[1]Philips Research, Hamburg, Germany; [2]Radiology, LUMC, Leiden, Netherlands; [3]Philips Healthcare, Best, Netherlands

2664. Atlas-Based 3D-Affine Self-Navigated Whole-Heart Coronary MRA: Initial Experience in Patients

Gabriele Bonanno[1], Davide Piccini, [12], Bénédicte Marechal[2, 3], Cristophe Sierro[4], Juerg Schwitter[5], Matthias Stuber[1]
[1]Radiology, University Hospital (CHUV) and University of Lausanne (UNIL) / Center for Biomedical Imaging, Lausanne, Switzerland; [2]Advanced Clinical Imaging Technology, Siemens Healthcare IM BM PI, Lausanne, Switzerland; [3]Radiology, CHUV - LTS5 - Ecole polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [4]Division of Cardiology and Cardiac MR Center, University Hospital (CHUV) and University of Lausanne (UNIL), Lausanne, Switzerland; [5]Division of Cardiology and Cardiac MR Center, University Hospital (CHUV) and University of Lausanne (UNIL), Switzerland

2665. Diagnostic Value of 3.0T Non-Contrast Enhanced Magnetic Resonance Angiography for Lower Extremity Arterial Stenosis

Yunlong Song[1], Dongmei Wang[2], Guangnan Quan[3], Lizhi Xie[3]
[1]Department of CT & MRI, Air Force General Hospital, Beijing, China; [2]Department of CT & MRI, Air Force General Hospital, Beijing, China; [3]GE Healthcare China, Beijing, China

2666. High-Resolution Coronary MR Angiography with Outer Volume Suppression/T_2 Preparation

Nii Okai Addy[1], Jieying Luo[1], Bob S. Hu[2], Dwight G. Nishimura[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Cardiovascular Disease, Palo Alto Medical Foundation, Palo Alto, CA, United States

2667. Non-Contrast-Enhanced Magnetic Resonance Venography Using DANTE and MSDE Preparations

Guoxi Xie[1], Xiaoyong Zhang[1, 2], Caiyun Shi[1], Xin Liu[1], Debiao Li[3], Zhaoyang Fan[3]
[1]Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, Guangdong, China; [2]University of Science and Technology of China, Hefei, Anhui, China; [3]Biomedical Imaging Research Institute, Cedars Sinai Medical Center, Los Angeles, CA, United States

2668. A Comparative Study of Contrast-Enhanced and Unenhanced MR Pulmonary Angiography in the Diagnosis of Pulmonary Embolism

Sishu Yuan[1], Liming Xia[1]
[1]Radiology, Tongji Hospital, Tongji Medical College, Huazhong University of Science and Technology., Wuhan, Hubei, China

2669. Acceleration-Selective Magnetic Resonance Angiography

Kalina V. Jordanova[1], Taehoon Shin[2], Adam B. Kerr[1], Dwight G. Nishimura[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Diagnostic Radiology and Nuclear Medicine, University of Maryland, Baltimore, MD, United States

2670. Optimized and Accelerated Non-Contrast-Enhanced MRA of the Lower Extremities Using IMSDE Prepared BSSFP Acquisition

Li Jiang[1], Andy Jiang[1], Zhigang Wu[1], Allan Jin[1], Stephon Xu[1], Feng Huang[1]
[1]Philips Healthcare (Suzhou), Suzhou, Jiangsu, China

2671. Accuracy of Lumen Measurement Using Non-Contrast SNAP MRA

Haining Liu[1], Niranjan Balu[2], Jinnan Wang[3], Jie Sun[2], Chun Yuan[4, 5]
[1]University of Washington, Seattle, WA, United States; [2]Radiology Department, University of Washington, Seattle, WA, United States; [3]Philips Research North America, NY, United States; [4]Bioengineering Department, University of Washington, Seattle, WA, United States; [5]Bioengineering Department, Tsinghua University, Beijing, China

2672. Cerebral Angiography and Vessel Wall in Progressive Hypertension

Yunxia Li[1, 2], Qiang Shen[1], Shiliang Huang[1], Wei Li[1], Eric R. Muir[1], Justin Alexander Long[1], Timothy Q. Duong[1]

[1]Research Imaging Institute, The University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Department of Neurology, Tongji Hospital, Tongji University, Shanghai, China

2673. Thin-Slice Acquisition Using Saturation Spin Labeling (TASSL) MRA

Robert R. Edelman[1, 2], Shivraman Giri[3], Ian Murphy[2], Ioannis Koktzoglou[1, 4]
[1]Radiology, NorthShore University HealthSystem, Evanston, IL, United States; [2]Radiology, Feinberg School of Medicine, Northwestern University, Chicago, IL, United States; [3]Siemens Healthcare, Chicago, IL, United States; [4]Radiology, Pritzker School of Medicine, University of Chicago, Chicago, IL, United States

2674. QISS UTE: Quiescent-Inflow Single-Shot MRA of the Peripheral Arteries Using an Ultra-Short Echo Time Readout

Robert R. Edelman[1, 2], Shivraman Giri[3], Ian Murphy[2], Kieran O'Brien[4], Matthew D. Robson[5], Ioannis Koktzoglou[1, 6]
[1]Radiology, NorthShore University HealthSystem, Evanston, IL, United States; [2]Radiology, Feinberg School of Medicine, Northwestern University, Chicago, IL, United States; [3]Siemens Healthcare, Chicago, IL, United States; [4]Siemens Healthcare, Switzerland; [5]Department of Cardiovascular Medicine, Oxford University, Oxford, United Kingdom; [6]Radiology, Pritzker School of Medicine, University of Chicago, Chicago, IL, United States

2675. Target Volume Coronary MRA Revisited: Usefulness of Non-Rigid Reregistration of Multi-Frame 3D MRA Acquisitions at 3T

Masaki Ishida[1], Ryohei Nakayama[1], Shinichi Takase[1], Katsuhiro Inoue[1], Yoshitaka Goto[1], Yasutaka Ichikawa[1], Motonori Nagata[1], Kakuya Kitagawa[1], Hajime Sakuma[1]
[1]Radiology, Mie University Hospital, Tsu, Mie, Japan

2676. Peripheral MR Angiography Using Fourier Velocity Encoding and Dynamic Reconstruction

Dongchan Kim[1], Changheun Oh[1], Hyunseok Seo[1], HyunWook Park[1]
[1]Electrical engineering, KAIST, Daejeon, Yuseong-Gu, Korea

2677. Respiratory Self-Navigated Inversion Recovery GRE Whole-Heart Coronary MR Imaging Using an Intravascular Contrast Agent in a Pediatric Population

Davide Piccini[1, 2], Gary R. McNeal[3], W. James Parks[4, 5], Michael O. Zenge[6], Tim C. Slesnick[4, 5]
[1]Advanced Clinical Imaging Technology, Siemens Healthcare, Lausanne, Switzerland; [2]Department of Radiology, University Hospital (CHUV) and University of Lausanne (UNIL) / Center for Biomedical Imaging (CIBM), Lausanne, Switzerland; [3]Customer Solutions Group, Siemens Medical Solutions USA, Inc, Malvern, PA, United States; [4]Department of Pediatrics, Emory University, Atlanta, GA, United States; [5]Children's Healthcare of Atlanta, Atlanta, GA, United States; [6]MR Product Innovation and Definition, Siemens AG, Healthcare Sector, Erlangen, Germany

2678. Clinical Performance of a Spatiotemporally Accelerated Motion-Corrected Pediatric 3D Free-Breathing Time-Resolved Contrast-Enhanced MR Angiography

Tao Zhang[1, 2], Ufra Yousaf[1], Albert Hsiao[3], Joseph Y. Cheng[1, 2], Marcus Alley[1], Michael Lustig, [24], John M. Pauly[2], Shreyas S. Vasanawala[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Electrical Engineering, Stanford University, Stanford, CA, United States; [3]Radiology, UC San Diego, San Diego, CA, United States; [4]Electrical Engineering and Computer Sciences, UC Berkeley, Berkeley, CA, United States

2679. R_1- ΔR_2- ΔR_2^* Combined MR Angiogram with Dual Contrast SPION

Hoesu Jung[1], Sohyun Han[1], Seokha Jin[1], Dongkyu Lee[1], Hyungjoon Cho[1]
[1]Department of Biomedical Engineering, UNIST (Ulsan National Institute of Science & Technology), Ulsan, Gyeongsangnam-do, Korea

2680. Contrast Enhanced Self-Gated Coronary Angiography at 7 Tesla Using Ultra-Short Echo Time Imaging

Naoharu Kobayashi[1], Jianing Pang[2], Steen Moeller[1], Pierre-Francois van de Moortele[1], Sebastian Schmitter[1], Kamil Ugurbil[1], Debiao Li[2], Michael Garwood[1], Gregory J. Metzger[1]

[1]Center for Magnetic Resonance Research, Department of Radiology, University of Minnesota, Minneapolis, MN, United States; [2]Biomedical Imaging Research Institute, Cedars-Sinai Medical Center, Los Angeles, CA, United States

2681. Intraindividual Comparison of Different Contrast Agent Application Schemes and Their Influence on Concentration, Signal and Bolus Geometry

Harald Kramer[1, 2], Gregor Jost[3], Hubertus Pietsch[3], Maximilian F. Reiser[1]
[1]Department of Clinical Radiology, University of Munich, Munich, Bavaria, Germany; [2]Department of Radiology, University of Wisconsin - Madison, Madison, WI, United States; [3]MR and CT Contrast Media Research, Bayer Healthcare, Berlin, Germany

2682. Combined Acquisition of Low-Dose Time-Resolved and Single-Phase High-Resolution Contrast-Enhanced MRA in the Evaluation of Spinal Vascular Diseases

Bum-soo Kim[1], Jieun Back[1], Song Lee[1], Jinhee Jang[1], Hyun Seok Choi[1], So-Lyung Jung[1], Kook-Jin Ahn[1]
[1]Department of Radiology, Seoul St.Mary's Hospital, The Catholic University of Korea, Seoul, Korea

Traditional Poster
Cardiac Perfusion & Function

Exhibition Hall Thursday 10:30-12:30

2683. Improved Visualization of Myocardial Perfusion Defects Using Ungated Continuously-Sampled Radial First-Pass MRI with Comparison to ECG-Gated Imaging

Behzad Sharif[1], Reza Arsanjani[1], Rohan Dharmakumar[1], Noel Bairey Merz[1], Daniel S. Berman[1], Debiao Li[1]
[1]Biomedical Imaging Research Institute, Dept. of Biomedical Sciences, Cedars-Sinai Medical Center, Los Angeles, CA, United States

2684. Motion Compensated Free Breathing Myocardial Perfusion MRI Using Iterative Non Local Shrinkage

Yasir Q. Mohsin[1], Sajan Goud Lingala[2], Edward DiBella[3], Mathews Jacob[1]
[1]Electrical Engineering, University of Iowa, Iowa city, IA, United States; [2]Electrical Engineering, University of Southern California, Los Angeles, CA, United States; [3]Department of Radiology, University of Utah, S.L.City,UT, United States

2685. Rapid Ungated Myocardial Perfusion MRI with an Undersampled Radial CAIPI Acquisition and a Compressed Sensing Reconstruction

Ganesh Adluru[1], Liyong Chen[2], Eugene Kholmovski[1], John Roberts[1], Edward V.R. DiBella[1]
[1]Radiology, University of Utah, Salt Lake City, UT, United States; [2]Advanced MRI Technologies, CA, United States

2686. Restating MS-CAIPIRINHA as an In-Plane Acceleration Problem: an Efficient Method for Integrating High Coverage Cardiac Perfusion MRI Into Clinical Workflow

Daniel Stäb[1, 2], Peter Speier[3], Theresa Reiter[4], Thorsten Klink[2], Henning Neubauer[2], Thorsten A. Bley[2], Tobias Wech[2], Andreas Max Weng[2], Herbert Köstler[2]
[1]The Centre for Advanced Imaging, The University of Queensland, Brisbane, Queensland, Australia; [2]Institute of Radiology, University of Würzburg, Würzburg, Bavaria, Germany; [3]Siemens AG Healthcare Sector, Erlangen, Bavaria, Germany; [4]Department of Internal Medicine I, University of Würzburg, Würzburg, Bavaria, Germany

2687. Quantitative First-Pass Perfusion with Whole-Ventricle Coverage Using 3D Through-Time Spiral GRAPPA

Johannes Tran-Gia[1, 2], Jesse Hamilton[2], David Lohr[1], Kestutis Barkauskas[2], Andreas M. Weng[1], Herbert Köstler[1], Nicole Seiberlich[2]
[1]Department of Diagnostic and Interventional Radiology, University of Würzburg, Würzburg, Germany; [2]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States

2688. Estimation of Coil Sensitivities in Myocardial First-Pass Perfusion Imaging Using a Model-Based T1 Mapping Technique

Johannes Tran-Gia[1], David Lohr[1], Andreas M. Weng[1], Christian O. Ritter, [12], Thorsten A. Bley[1], Herbert Köstler[1]
[1]Department of Diagnostic and Interventional Radiology, University of Würzburg, Würzburg, Germany; [2]Department of Diagnostic and Interventional Radiology, University Medical Center Göttingen, Göttingen, Germany

2689. Fast Multicoil Total Variation Reconstruction of Cardiac Perfusion Images
Srikant Kamesh Iyer[1, 2], Tolga Tasdizen[2], Ganesh Adluru[3], Edward DiBella[3]
[1]Electrical and Computer Engineering, University of Utah, Salt Lake City, UT, United States; [2]Scientific Computational Institute, University of Utah, Salt Lake City, UT, United States; [3]UCAIR/Radiology, University of Utah, Salt Lake City, UT, United States

2690. A Look-Locker Acquisition Scheme for Quantitative Myocardial Perfusion Imaging by Arterial Spin Labelling in Humans at 3 T
Graeme A. Keith[1], Christopher T. Rodgers[1], Michael A. Chappell[2], Matthew D. Robson[1]
[1]Oxford Centre for Clinical Magnetic Resonance Research, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]Institute of Biomedical Engineering, University of Oxford, Oxford, Oxfordshire, United Kingdom

2691. Reducing Saturation Effects in the AIF Determination of Quantitative First-Pass Perfusion Imaging Using a Model-Based Reconstruction
Johannes Tran-Gia[1], David Lohr[1], Andreas M. Weng[1], Christian O. Ritter[1, 2], Thorsten A. Bley[1], Herbert Köstler[1]
[1]Department of Diagnostic and Interventional Radiology, University of Würzburg, Würzburg, Germany; [2]Department of Diagnostic and Interventional Radiology, University Medical Center Göttingen, Göttingen, Germany

2692. Atherosclerotic Plaques Affect Resting Myocardial Blood Flow Quantification Using Contrast-Enhanced Magnetic Resonance Perfusion Imaging
Karsten Sommer[1, 2], Dominik Bernat[1], Regine Schmidt[1], Laura M. Schreiber[1]
[1]Department of Radiology, Johannes Gutenberg University Medical Center, Mainz, Rhineland-Palatinate, Germany; [2]Max Planck Graduate Center with the Johannes Gutenberg University Mainz, Mainz, Rhineland-Palatinate, Germany

2693. MRI Perfusion Discriminates Stunned Myocardium Adjacent to Focal Infarct from Microemblized Infarcted Myocardium
Maythem Saeed[1], Loi Do[1], Steven W. Hetts[1], Mark W. Wilson[1]
[1]Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, Ca, United States

2694. The Influence of Contrast Agent Bolus Dispersion in Contrast-Enhanced Myocardial Perfusion MRI: A Computational Fluid Dynamics Simulation Study on Influencing Factors and Different Methods of Quantitative Analysis
Regine Schmidt[1], Dirk Graafen[1], Karsten Sommer[1], Hanns-Christian Breit[1], Laura Maria Schreiber[1, 2]
[1]Section of Medical Physics, Department of Radiology, Johannes Gutenberg University Medical Center, Mainz, Germany; [2]Department of Cellular and Molecular Imaging, Comprehensive Heart Failure Center (CHFC), Wuerzburg, Germany

2695. Evaluation of Cardiac Stress Perfusion and Functional MRI Biomarkers in Healthy Nonhuman Primates: Reproducibility and Repeatability Study
Sarayu Parimal[1, 2], Smita Sampath[1, 2], Michael Klimas[2], Dai Feng[3], Richard Baumgartner[3], Elaine Manigbas[4], Willy GSell[4], Jeffrey L. Evelhoch[2], Chin Chih-Liang[1, 2]
[1]Imaging, MSD, Singapore; [2]Imaging, Merck & Co. Inc., WestPoint, Philadelphia, United States; [3]Biometric Research, Biostatistics and Research Decision Sciences, Merck & Co. Inc., Rahway, NJ, United States; [4]MRI department, Maccine Pte Ltd, Singapore

2696. New Method to Validate *In Vivo* 2D Displacements from Spiral Cine DENSE at 3T
Gregory J. Wehner[1], Jonathan D. Suever[2], Christopher M. Haggerty[2], Linyuan Jing[2], David K. Powell[1], Sean M. Hamlet[3], Jonathan D. Grabau[2], Dimitri Mojsejenko[2], Xiaodong Zhong[4], Frederick H. Epstein[5], Brandon K. Fornwalt[1, 6]
[1]Biomedical Engineering, University of Kentucky, Lexington, KY, United States; [2]Pediatrics, University of Kentucky, Lexington, KY, United States; [3]Electrical Engineering, University of Kentucky, Lexington, KY, United States; [4]MR R&D Collaborations, Siemens Healthcare, Atlanta, GA, United States; [5]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [6]Physiology and Medicine, University of Kentucky, Lexington, KY, United States

2697. Real-Time Imaging of the Heart and Aorta at 7.0 T Using a 16 Channel Bow Tie Antenna Transceiver Array

ISMRM MERIT AWARD magna cum laude

Celal Oezerdem[1], Lukas Winter[1], Andreas Graessl[1], Katharina Paul[1], Antje Els[1], Dirk Voit[2], Jens Frahm[2, 3], Thoralf Niendorf[1, 4]
[1]Berlin Ultra-High Field Facility (B.U.F.F.), MDC, Berlin, Germany; [2]Biomedizinische NMR Forschungs GmbH am Max-Planck-Institut für biophysikalische Chemie, Göttingen, Germany; [3]DZHK (German Center for Cardiovascular Research), partner site Göttingen, Germany; [4]Experimental and Clinical Research Center, a joint cooperation between Charité Medical Faculty and the Max Delbrueck Center, Berlin, Germany

2698. Sub-Millimeter In-Plane Spatial Resolution CINE Imaging of the Heart at 7.0 T Using a 16 Channel Bow Tie Antenna Transceiver Coil Array

Celal Oezerdem[1], Lukas Winter[1], Andreas Graessl[1], Katharina Paul[1], Antje Els[1], Thoralf Niendorf[1, 2]
[1]Berlin Ultra-High Field Facility (B.U.F.F.), MDC, Berlin, Germany; [2]Experimental and Clinical Research Center, a joint cooperation between Charité Medical Faculty and the Max Delbrueck Center , Berlin, Germany

2699. Free-Breathing Cardiac Cine MRI Using the Diminishing Variance Algorithm

R Reeve Ingle[1], Kenneth O. Johnson[1], Galen D. Reed[1], Juan M. Santos[1], William R. Overall[1], Bob S. Hu[1, 2]
[1]HeartVista, Inc., Menlo Park, CA, United States; [2]Cardiology, Palo Alto Medical Foundation, Palo Alto, CA, United States

2700. Evaluate Radial and Longitudinal Myocardial Motion Velocity in Left and Right Ventricles for Repaired Tetralogy of Fallot Patients by Phase-Contrast MRI

Meng-Chu Chang[1], Ming-Ting Wu[2], Marius Menza[3], Mao-Yuan Su[4], Hung-Chieh Huang[2], Hsu-Hsia Peng[5]
[1]Interdisciplinary Program of Nuclear Science, National Tsing Hua University, Hsinchu, Taiwan; [2]Department of Radiology, Kaohsiung Veterans General Hospital, Kaohsiung, Taiwan; [3]Medical Physics, Department of Radiology, University Hospital Freiburg, Freiburg, Germany; [4]Department of Medical Imaging, National Taiwan University Hospital, Taipei, Taiwan; [5]Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan

2701. Evaluate Myocardial Dyssynchrony Index in Left Ventricle for Marfan Syndrome Patients by Using Phase-Contrast Magnetic Resonance Imaging

Tzu-Yu chou[1, 2], Hsin-Hui Chiu[3], Wen-Yih Isaac Tseng[4], Marius Menza[5], Hsu-Hsia Peng[2]
[1]Institute of Biomedical Engineering, National Taiwan University, taipei, taiwan, Taiwan; [2]Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan; [3]Department of Pediatrics, Taipei Medical University Hospital, Taipei, Taiwan, Taiwan; [4]Center for Optoelectronic Biomedicine, College of Medicine, National Taiwan University, Taiwan; [5]Medical Physics, Department of Radiology, University Hospital Freiburg, Freiburg, Germany

2702. A New Self-Gating Method for Cardiac-MRI Using Phase Information

Hyunseok Seo[1], Dongchan Kim[1], HyunWook Park[1]
[1]Electrical Engineering, KAIST, Daejeon, Korea

2703. Assessment of Left Ventricular Abnormal Twist in Repaired Tetralogy of Fallot Patients Using Phase-Contrast MRI

Meng-Chu Chang[1], Ming-Ting Wu[2], Marius Menza[3], Mao-Yuan Su[4], Hung-Chieh Huang[2], Hsu-Hsia Peng[5]
[1]Interdisciplinary Program of Nuclear Science, National Tsing Hua University, Hsinchu, Taiwan; [2]Department of Radiology, Kaohsiung Veterans General Hospital, Kaohsiung, Taiwan; [3]Medical Physics, Department of Radiology, University Hospital Freiburg, Freiburg, Germany; [4]Department of Medical Imaging, National Taiwan University Hospital, Taipei, Taiwan; [5]Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan

2704. Clinical Impact of Left Ventricular Eccentricity Index Using Cardiac Cine MRI for Assessment of Right Ventricular Hemodynamics in Adult Congenital Heart Disease

Yuzo Yamasaki[1], Michinobu Nagao[2], Masato Yonezawa[1], Satoshi Kawanami[2], Takeshi Kamitani[1], Torahiko Yamanouchi[1], Kenichiro Yamamura[3], Ichiro Sakamoto[4], Hidetake Yabuuchi[5], Hiroshi Honda[1]
[1]Clinical Radiology, Kyushu University, Fukuoka, Japan; [2]Molecular Imaging & Diagnosis, Kyushu University, Fukuoka, Japan; [3]Pediatrics, Kyushu University, Fukuoka, Japan; [4]Cardiovascular Medicine, Kyushu University, Fukuoka, Japan; [5]Health Sciences, Kyushu University, Fukuoka, Japan

2705. Comparison of Right Ventricular Volume Measurements Obtained Using Transaxial and Short-Axis Slices Acquired by Cardiac MRI in Patients with Chronic Thromboembolic Pulmonary Hypertension

Rieko Ishimura[1], Kenich Yokoyama[1], Toshiya Kariyasu[1], Shigehide Kuhara[2], Toshiaki Nitatori[1]
[1]department of radiology, Kyorin University, Mitaka, Tokyo, Japan; [2]Toshiba medical systems, Otawara, Tochigi, Japan

2706. Quantitative Assessment of Left Ventricular Tissue Relaxometry and Dynamics in Human Heart Transplant Recipients in a Gold Standard Comparison: A Preliminary Study

Helene Feliciano[1, 2], Ruud B. van Heeswijk[1, 2], Davide Piccini[3, 4], Pierre Monney[5, 6], Juerg Schwitter[5, 6], Roger Hullin[5], Matthias Stuber[1, 2]
[1]Department of Radiology, University Hospital (CHUV) and University of Lausanne (UNIL), Lausanne, Switzerland; [2]Center for Biomedical Imaging (CIBM), Lausanne, Switzerland; [3]Department of Radiology, University Hospital (CHUV) and University of Lausanne (UNIL) / Center for Biomedical Imaging (CIBM), Lausanne, Switzerland; [4]Advanced Clinical Imaging Technology, Siemens Healthcare IM BM PI, Lausanne, Switzerland; [5]Division of Cardiology, Department of Internal Medicine, University Hospital (CHUV) and University of Lausanne (UNIL), Lausanne, Switzerland; [6]Cardiac MR Center (CRMC), University Hospital of Lausanne (CHUV), Lausanne, Switzerland

2707. Intravoxel Incoherent Motion and Arterial Spin Labeling MRI of Isolated Perfused Hearts

Osama Abdullah[1], Arnold David Gomez[1], Samer Merchant[1], Michael Heidinger[2], Steven Poelzing[2], Edward W. Hsu[1]
[1]Bioengineering, University of Utah, Salt Lake City, UT, United States; [2]Cardiac Research and Training Institute, University of Utah, UT, United States

2708. Comparison of First-Pass MRI and Arterial Spin Labeling for Quantification of Myocardial Perfusion in Mice

Nivedita K. Naresh[1], Xiao Chen[1], Yikui Tian[2], Eric M. Moran[1], Brent A. French[1], Frederick H. Epstein[1, 3]
[1]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [2]Surgery, University of Virginia Health System, Charlottesville, VA, United States; [3]Radiology, University of Virginia, VA, United States

2709. Alterations of Left Atrial Function and Substrate After Myocardial Infarction in Relation to Vulnerability for Atrial Fibrillation: A Chronic Porcine Model

Dana C. Peters[1], Stephanie L. Thorn[2], Alda Bregasi[2], Edgar J. Diaz[1], Mitchel R. Stacy[2], Christi Hawley[2], Albert J. Sinuas[2]
[1]Radiology, Yale School of Medicine, New Haven, CT, United States; [2]Cardiology, Yale School of Medicine, New Haven, CT, United States

2710. Noninvasive Detection of Congestive Heart Failure in Postinfarction Rats

ISMRM MERIT AWARD magna cum laude

Emil Knut Stenersen Espe[1, 2], Jan Magnus Aronsen[1, 3], Kristine Skårdal[1, 2], Lili Zhang[1, 2], Ivar Sjaastad[1, 2]
[1]Institute for Experimental Medical Research, Oslo University Hospital and University of Oslo, Oslo, Norway; [2]KG Jebsen Cardiac Research Center and Center for Heart Failure Research, University of Oslo, Oslo, Norway; [3]Bjørknes College, Oslo, Norway

2711. Transplantation of Integrin-Linked Kinase-Overexpressing Mesenchymal Stem Cells Via Coronary Improves the Myocardial Repairing in Swine Model of Acute Myocardial Infarction

Dan Mu[1], Wei Bo Chen[2], Bin Zhu[3], Biao Xu[4]
[1]Drum Tower Hospital, Nanjing, Jiangsu, China; [2]Philips Healthcare, Shanghai, China; [3]Radiology, Drum Tower Hospital, Nanjing, Jiangsu , China; [4]Cardiology, Drum Tower Hospital, Nanjing, Jiangsu, China

2712. Development of Real-Time Magnetic Resonance Imaging of Mouse Hearts at 9.4 Tesla – Simulations and First Applications

Tobias Wech[1], Nicole Seiberlich[2], Andreas Schindele[3], Michael L. Gyngell[4], Valentina Davidoiu[5], Alfio Borzi[3], Herbert Köstler[1], Jürgen E. Schneider[6]
[1]Department of Diagnostic and Interventional Radiology, University of Wuerzburg, Würzburg, Germany; [2]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [3]Institute of Mathematics, University of Wuerzburg, Würzburg, Germany; [4]Perspectum Diagnostics Ltd, Oxford, United Kingdom; [5]Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom; [6]Division of Cardiovascular Medicine, University of Oxford, Oxford, United Kingdom

2713. Assessing Diastolic Function in Mouse Hearts: High-Temporal Resolution CINE MRI Vs. Ultrasound
Thomas A. Roberts[1], Anthony N. Price[2], Anna L. David[3], Valerie Taylor[1], Daniel J. Stuckey[1], Mark F. Lythgoe*[1]*
[1]Centre for Advanced Biomedical Imaging, Division of Medicine, University College London, London, United Kingdom; [2]Division of Imaging Sciences and Biomedical Engineering, London, United Kingdom; [3]Institute for Women's Health, University College London, London, United Kingdom

Traditional Poster
Let It Flow

Exhibition Hall Thursday 10:30-12:30

2714. Quantification of Flow Rates in Short Vessel Segments from Arterial Spin Labeling Dynamic Angiography
Flora A. Kennedy McConnell[1], Thomas W. Okell[2], Michael A. Chappell[1], Stephen J. Payne[1]
[1]Institute of Biomedical Engineering, Department of Engineering Science, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]FMRIB Centre, Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, Oxfordshire, United Kingdom

ISMRM MERIT AWARD magna cum laude

2715. Assessment of Blood Flow Velocity and Pulsatility in Cerebral Perforating Arteries with 7T Phase Contrast MRI
Lennart J. Geurts[1], Willem H. Bouvy[2], Hugo J. Kuijf[3], Peter R. Luijten[1], L. Jaap Kappelle[2], Geert Jan Biessels[2], Jaco J.M. Zwanenburg[1]
[1]Radiology, UMC Utrecht, Utrecht, Netherlands; [2]Neurology, UMC Utrecht, Utrecht, Netherlands; [3]Imaging Sciences Institute, UMC Utrecht, Utrecht, Netherlands

ISMRM MERIT AWARD magna cum laude

2716. Volumetric Quantification of Localized Normalized Helicity in Patients with Bicuspid Valve and Aortic Dilation
Julio Garcia[1], Michael Markl[1], Jeremy Collins[1], James Carr[1], Alex J Barker[1]
[1]Radiology, Northwestern University, Chicago, IL, United States

ISMRM MERIT AWARD magna cum laude

2717. Contribution of Early and Late Filling Vortex Rings to Normal Left Ventricular Flow: Quantitative 4D Flow MRI Analysis Using 3D Vortex Cores Combined with Particle Tracing
Mohammed S.M. Elbaz[1], Patrick J.H. de Koning[1], Jos J.M. Westenberg[1], Emmeline E. Calkoen[2], Boudewijn P.F. Lelieveldt[1, 3], Arno A.W. Roest[2], Rob R.J. van der Geest[1]
[1]Division of Image Processing, Radiology, Leiden University Medical Center, Leiden, Netherlands; [2]Paediatric Cardiology, Leiden University Medical Center, Leiden, Netherlands; [3]Intelligent Systems, Delft University of Technology, Delft, Netherlands

2718. Scan-Rescan Reproducibility of Flow and Pressure Difference Using 4D Flow MRI in Pulmonary Artery
Ke Ma[1], Zechen Zhou[1], Aiqi Sun[1], Shuo Chen[1], Rui Li[1]
[1]Center for Biomedical Imaging Research, Department of Biomedical Engineering, School of Medicine, TsingHua university, Beijing, China

2719. One Step Toward Automating Vessel Detection and Labeling in the Neck for Flow Quantification
Ying Wang[1, 2], Jing Jiang[1, 3], Paul Kokeny[1], Yi Zhong[4], E. Mark Haacke[1, 4]
[1]Department of Biomedical Engineering, Wayne State University, Detroit, MI, United States; [2]College of Information Science and Engineering, Northeastern University, Shenyang, Liaoning, China; [3]Department of Radiology, Wayne State University, Detroit, MI, United States; [4]MR Innovations, Inc., Detroit, MI, United States

2720. Computational Fluid Dynamics Simulations Guided by Fourier Velocity Encoded MRI
Vinicius Rispoli[1], Jon-Fredrik Nielsen[2], Krishna Nayak[3], Joao Luiz Carvalho[1]
[1]University of Brasilia, Brasilia, DF, Brazil; [2]University of Michigan, Ann Arbor, MI, United States; [3]University of Southern California, Los Angeles, CA, United States

2721. Use of 4D Flow MRI to Investigate If Aortic Tissue Resection Without an Open Distal and Hemi-Arch Procedure Addresses All Regions Suspected for Progression of Bicuspid Aortopathy

Alex J. Barker[1], Pim van Ooij[1], David Guzzardi[2], S. Chris Malaisrie[3], Patrick M. McCarthy[3], James Carr[1], Jeremy Collins[1], Michael Markl[1, 4], Paul W. M. Fedak[2, 3]
[1]Radiology, Northwestern University, Chicago, IL, United States; [2]Department of Cardiac Sciences, University of Calgary, Calgary, AB, Canada; [3]Division of Surgery-Cardiac Surgery, Northwestern University, Chicago, IL, United States; [4]Biomedical Engineering, Northwestern University, Chicago, IL, United States

2722. Analyzing Myocardial Torsion Based on Tissue Phase Mapping MRI

Teodora Chitiboi[1, 2], Susanne Schnell[2], Jeremy Collins[2], James Carr[2], Horst Hahn[1], Michael Markl[2]
[1]Fraunhofer MEVIS, Bremen, Germany; [2]Radiology, Northwestern University, Chicago, IL, United States

2723. PRESSURE GRADIENT PREDICTION in AORTIC COARCTATION USING a COMPUTATIONAL-FLUID-DYNAMICS MODEL: Validation Against Invasive Pressure Catheterization at Rest and Pharmacological Stress

Julio Sotelo[1, 2], Israel Valverde[3, 4], Philipp Beerbaum[5], Heynric B. Grotenhuis[6], Gerald Greil[7], Tobias Schaeffter[7], Reza Razavi[7], Daniel E. Hurtado[2], Sergio Uribe[1, 8], C. Alberto Figueroa[7, 9]
[1]Biomedical Imaging Center, Electrical Engineering Department, Pontificia Universidad Catolica de Chile, Santiago, RM, Chile; [2]Structural and Geotechnical Engineering Depertement, Pontificia Universidad Catolica de Chile, Santiago, RM, Chile; [3]Pediatric Cardiology Unit, Hospital Virgen del Rocio, Seville, Spain; [4]Cardiovascular Pathology Unit, Institute of Biomedicine of Seville (IBIS), Seville, Spain; [5]Hannover Medical University, Hannover, Niedersachsen, Germany; [6]Child Cardiology Department, Leiden University, Leiden, Netherlands; [7]Division of Imaging Sciences and Biomedical Engineering, King's College London, London, United Kingdom; [8]Radiology Department, School of Medicine, Pontificia Universidad Catolica de Chile, Santiago, Chile; [9]Department of Surgery and Biomedical Engineering, University of Michigan, MI, United States

2724. Intra-Scan and Inter-Scan Reproducibility and Variability of Left Ventricular 4D Flow Kinetic Energy Values in Healthy Volunteers.

Victoria Stoll[1], Aaron Hess[1], Malenka Bissell, Jonatan Eriksson[2], Petter Dyverfeldt[2], Andrew Lewis, Tino Ebbers[2], Saul Myerson, Carl-Johan Carlhäll[2], Stefen Neubauer
[1]Division of Cardiovascular Medicine, OCMR, Oxford, United Kingdom; [2]Division of Cardiovascular Medicine and Center for Medical Imaging Science and Visualization (CMIV), Linköping University, Linköping, Sweden

2725. 4D Flow MRI: Analysis of Aortic Hemodynamics After Valve-Sparing Aortic Root Replacement with an Anatomically Shaped Sinus Prosthesis

Thekla Oechtering[1], Julian Haegele[1], Peter Hunold[1], Michael Scharfschwerdt[2], Markus Huellebrand[3], Hans-Hinrich Sievers[2], Jörg Barkhausen[1], Alex Frydrychowicz[1]
[1]Clinic for Radiology and Nuclear Medicine, University Hospital Schleswig-Holstein, Lübeck, Germany; [2]Department of Cardiac and Cardiothoracic Vascular Surgery, University Hospital Schleswig-Holstein, Lübeck, Germany; [3]Fraunhofer MEVIS, Bremen, Germany

2726. Application of Full Turbulent Tensor in Estimation of MR-Based Relative Pressure

Sarah Kefayati[1], Henrik Haraldsson[2], Belén Casas Garcia[3], Jonas Lantz[3], Tino Ebbers[3], David Saloner[2]
[1]University of California, San Francisco, San Francisco, CA, United States; [2]University of California, San Francisco, CA, United States; [3]Linköping University, Sweden

2727. Radial Tissue Phase Mapping Is More Robust Against In-Flow Effects Than Cartesian Tissue Phase Mapping

Jan Paul[1], Peter Bernhardt[1], Heiko Neumann[2], Volker Rasche[1]
[1]Internal Medicine II, University Hospital Ulm, Ulm, Germany; [2]Institute of Neural Information Processing, University of Ulm, Ulm, Germany

2728. Inter-Study Reproducibility of Interleaved Spiral Phase Velocity Mapping of Renal Artery Blood Flow Velocity

Jennifer Keegan[1], Hitesh Patel[1], Robin Simpson[2], Raad Mohiaddin[1, 3], David Firmin[1, 3]
[1]Royal Brompton Hospital, London, United Kingdom; [2]University of Freiburg, Freiburg, Germany; [3]Imperial College, London, United Kingdom

2729. Investigation of Spatial Flow Profile Pattern in Branch Pulmonary Arteries After Repaired Tetralogy of Fallot
Pei-Hsin Wu[1], Hsiao-Wen Chung[1], Cheng-Chieh Cheng[1], Ming-Ting Wu[2], Cheng-Wen Ko[3]
[1]Institute of Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan; [2]Department of Radiology, Kaohsiung Veterans General Hospital, Kaohsiung, Taiwan; [3]Department of Computer Science and Engineering, National Sun Yat-Sen University, Kaohsiung, Taiwan

2730. Patients with Corrected Atrioventricular Septal Defect Demonstrate Regionally Disturbed Left Ventricular Inflow Patterns with Decreased LV Ejection Efficiency : A Quantitative Evaluation by 4DFlow MRI and Particle Tracing
Emmeline Calkoen[1], Patrick de Koning[2], Rob van der Geest[2], Albert de Roos[2], Arno Roest[1], Jos Westenberg[2]
[1]Pediatric Cardiology, LUMC, Leiden, Netherlands; [2]Radiology, LUMC, Leiden, Netherlands

2731. Beat-To-Beat Stroke Volume Estimation Using Magnetohydrodynamic Voltages Induced in Intra-MRI Electrocardiograms
T. Stan Gregory[1], John Oshinski[2], Ehud J. Schmidt[3], Mikayel Dabaghyan[3], Raymond Y. Kwong[4], William G. Stevenson[4], Zion Tsz Ho Tse[1]
[1]College of Engineering, The University of Georgia, Athens, GA, United States; [2]Department of Radiology, Emory University Hospital, Atlanta, GA, United States; [3]Department of Radiology, Brigham and Women's Hospital, Boston, MA, United States; [4]Department of Cardiology, Brigham and Women's Hospital, Boston, MA, United States

2732. Sub-Millimeter Motion-Corrected Tissue Phase Mapping for Transmural Analysis of LV Motion
Jan Paul[1], Stefan Wundrak[1], Heiko Neumann[2], Volker Rasche[1]
[1]Internal Medicine II, University Hospital Ulm, Ulm, Germany; [2]Institute of Neural Information Processing, University of Ulm, Ulm, Germany

2733. Fast Quantification of Global Cerebral Metabolic Rate of Oxygen ($CMRO_2$)
Suliman Barhoum[1], Michael C. Langham[1], Jeremy F. Magland[1], Chamith S. Rajapakse[1], Cheng Li[1], Felix W. Wehrli[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States

2734. Ventilator Gated 4D Flow MRI in Pediatric Patients with CHD: Initial Feasibility and Internal Validation
Patrick Magrath[1, 2], Stanislas Rapacchi[2], Fei Han[1, 2], Peng Hu[2], J. Paul Finn[2], Daniel B. Ennis, [12]
[1]Bioengineering, University of California, Los Angeles, CA, United States; [2]Radiology, University of California, Los Angeles, CA, United States

2735. 4D Flow Imaging Incorporating a Fluid Dynamics Model
Anthony G. Christodoulou[1], Rebecca Ramb[2], Marius Menza[2], Jürgen Hennig[2], Zhi-Pei Liang[1]
[1]Beckman Institute and Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]Department of Radiology, Medical Physics, University Medical Center, Freiburg, Baden-Württemburg, Germany

2736. Quantitative MRI Reveals Impaired Endothelial Function and Vascular Reactivity in Cigarette Smokers
Michael Langham[1], Yongxia Zhou[1], Erica N. Chirico[1], Erin K. Englund[1], Emile R. Mohler[2], Jeremy F. Magland[1], Wensheng Guo[3], Felix W. Wehrli[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Medicine, University of Pennsylvania, Philadelphia, PA, United States; [3]Biostatistics and Epidemiology, University of Pennsylvania, Philadelphia, PA, United States

2737. 2D PC-MRI with 3D Flow Encoding Acquisitions Only (FEsO) for Accurate Slice Orientation-Independent Blood Flow Measurement
Da Wang[1, 2], Peng Hu[1, 2]
[1]Department of Radiological Sciences, David Geffen School of Medicine, University of California Los Angeles, Los Angeles, CA, United States; [2]Biomedical Physics Interdepartmental Graduate Program, University of California Los Angeles, Los Angeles, CA, United States

2738. Hemodynamic Assessment Ofpulmonary Arteryon Smokerswith 3.0T Phase-Contrast MR Imaging: Initial Experience

Ruyi Bao[1], Qingwei Song[2], Ailian Liu[2], Zhiyong Li[2]
[1]Radiology department, The First Affiliated Hospital of Dalian Medical University , DaLian, LiaoNing, China; [2]Radiology department, The First Affiliated Hospital of Dalian Medical University, DaLian, LiaoNing, China

2739. Cerebrospinal Fluid (CSF) Flow in Pediatric Patients with Type I Chiari Malformation Compared to Control Subjects

Samir Sarda[1], Joshua J. Chern[1], Nilesh K. Desai[2], John Oshinski[2, 3]
[1]Pediatric Neurosurgery Associates, Children's Healthcare of Atlanta, Atlanta, GA, United States; [2]Department of Radiology and Imaging Sciences, Emory University School of Medicine, Atlanta, GA, United States; [3]Department of Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA, United States

2740. Robust Phase Contrast Correction with Parallel Imaging

Ana Beatriz Solana Sánchez[1], Piero Ghedin[2], Ek Tsoon Tan[3], Christopher J. Hardy[3], Anja Brau[2]
[1]GE Global Research, Garching bei Muenchen, Bayern, Germany; [2]GE Healthcare, Garching bei Muenchen, Bayern, Germany; [3]GE Global Research, Niskayuna, NY, United States

2741. The More the Merrier? Finding the “Right” Temporal Resolution for Blood Velocity Measurements: A Multimodal Study

Francesco Santini[1], Oliver Bieri[1], Tilman Schubert[2]
[1]Radiological Physics, University of Basel Hospital, Basel, Switzerland; [2]Department of Radiology, University of Basel Hospital, Basel, Switzerland

2742. Free-Breathing Motion Corrected Phase Contrast Flow Quantification

Hui Xue[1], Peter Kellman[2], Kendall O'Brien[3], Michael Schacht Hansen[1]
[1]Magnetic Resonance Technology Program, National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD, United States; [2]Medical Image and Signal Processing Program, National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD, United States; [3]Children's National Medical Center, Washington, DC, United States

2743. Correlation Mapping Technique for Characterizing Pulsatile Cerebrospinal Fluid (CSF) Motion Obtained by Four Dimensional Velocity Mapping

Satoshi Yatsushiro[1], Akihiro Hirayama[2], Naokazu Hayashi[2], Mitsunori Matsumae[2], Nao Kajihara[3], Afnizanfizal Abdullah[4], Kagayaki Kuroda[1]
[1]Course of Information Science and Engineering, Tokai University, Hiratsuka, Kanagawa, Japan; [2]Department of Neurosurgery, Tokai University School of Medicine, Isehara, Kanagawa, Japan; [3]Department of Radiology, Tokai University Hospital, Isehara, Knagawa, Japan; [4]Faculty of Computer Science and Information Systems, Universiti Teknologi Malaysia, Johor, Malaysia

2744. Effects of Temporal Resolution and Velocity Encoding Strategies on Aortic Flow Measurement with Two-Dimensional Phase-Contrast MRI

Can Wu[1, 2], Susanne Schnell[2], Michael Markl[1, 2]
[1]Biomedical Engineering, Northwestern University, Chicago, IL, United States; [2]Radiology, Northwestern University, Chicago, IL, United States

2745. Hemodynamic Abnormalities Reflected by High OSI as a Potential Trigger to Atherosclerosis in Non-Dilated Lower Abdominal Aorta.

Masataka Sugiyama[1], Yasuo Takehara[2], Naoki Oishi[2], Marcus Alley[3], Tetsuya Wakayama[4], Atsushi Nozaki[4], Hiroyuki Kabasawa[4], Shuhei Yamashita[1], Harumi Sakahara[1]
[1]Radiology, Hamamatsu University School of Medicine, Hamamatsu, Shizuoka, Japan; [2]Radiology, Hamamatsu University Hospital, Shizuoka, Japan; [3]Radiology, Stanford University School of Medicine, CA, United States; [4]Applied Science Laboratory Asia Pacific, GE Healthcare Japan, Tokyo, Japan

2746. Accelerated 4D Phase Contrast UTE MRI
Abdallah G. Motaal[1], Verena Hoerr[2], Huiming Dong[1], Luc M. J. Florack[3], Klaas Nicolay[1], Gustav J. Strijkers[1]
[1]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, North Brabant, Netherlands; [2]Department of Clinical Radiology, University Hospital of Muenster, Muenster, Germany; [3]Mathematics and Computer Science, Eindhoven University of Technology, Eindhoven, North Brabant, Netherlands

2747. Comparison of the Accuracy in 2D and 4D PCMRI to Evaluate Oscillating Flow in Small Diameters
Gwenael Page[1], Roger Bouzerar[1], Dominique Haye[2], Dong-Joo Kim[3], Hack-Jin Lee[3], Anne-Virginie Salsac[4], Olivier Baledent[1]
[1]BioFlow Image, CHU Amiens, Amiens, France; [2]PFT Innovaltech, France; [3]Department of Brain and Cognitive Engineering, Korea; [4]Laboratoire de Biomecanique et Bioengenierie, CNRS, France

2748. Validation of Intravascular Pressure Gradients Derived from Four-Dimensional Flow-Sensitive Magnetic Resonance: *In Vitro* Intraluminal Catheter Comparison Using an Elastic Phantom
Amir Awwad[1], Daniel Rodrieguez[1], Marcus Alley[2], Shane MacSweeney[3], Sebastian Kozerke[4], Dorothee P. Auer[1]
[1]Sir Peter Mansfield Imaging Centre (SPMIC), University of Nottingham, Nottingham, United Kingdom; [2]Radiological Sciences Laboratories, Lucas Centre for Imaging, Stanford University, Palo Alto, CA, United States; [3]Vascular & Endovascular Surgery Dept., Nottingham University Hospitals NHS Trust, Nottingham, United Kingdom; [4]Institute of Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland

2749. Evaluation of Cardiac Function in Chronic Kidney and Liver Disease
Charlotte E. Buchanan[1, 2], Claire Grant[2], Eleanor F. Cox[1], Nick M. Selby[2, 3], Chris W. McIntyre[4, 5], Maarten W. Taal[2], Susan T. Francis[1]
[1]SPMIC, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]Division of Medical Sciences and Graduate Entry Medicine, Royal Derby Hospital, Nottingham, United Kingdom; [3]Department of Renal Medicine, Royal Derby Hospital, Derby, United Kingdom; [4]Schulich School of Medicine and Dentistry, University of Western Ontario, London, Ontario , Canada; [5]Division of Medical Sciences and Graduate Entry Medicine, Royal Derby Hospital, Nottingham , United Kingdom

2750. The Effect of Resolution on Viscous Dissipation Measured with 4D-Flow MRI in Patients with Fontan Circulation: Evaluation Using Computational Fluid Dynamics
Merih Cibis[1], Kelly Jarvis[2, 3], Michael Markl[2, 3], Michael Rose[2, 4], Cynthia Rigsby[2, 4], Alex J. Barker[2], Jolanda J. Wentzel[1]
[1]Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands; [2]Radiology, Northwestern University, Chicago, IL, United States; [3]Biomedical Engineering, Northwestern University, Chicago, IL, United States; [4]Medical Imaging, Ann& Robert H Lurie Children's Hospital of Chicago, Chicago, IL, United States

2751. Multi-Venc Measurement of Phase Contrast MRI for Improving Accuracy of Velocity Field
Hojin Ha[1], Guk Bae Kim[2], Jihoon Kweon[2], Young-Hak Kim[3], Namkug Kim[4, 5], Dong Hyun Yang[4], Sang Joon Lee[1]
[1]Department of Mechanical Engineering, Pohang University of Science and Technology, Pohang, Gyeongbuk, Korea; [2]Asan Institute of Life Science, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea; [3]Department of Cardiology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea; [4]Department of Radiology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea; [5]Department of Convergence Medicine, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

2752. Improved Full Turbulence Tensor Quantification Using ICOSA6 Flow Encoding for Phase-Contrast MRI
Henrik Haraldsson[1], Sarah Kefayati[1], Belén Casas Garcia[2], Jonas Lantz[2], Tino Ebbers[2], David Saloner[1]
[1]University of California, San Francisco, San Francisco, CA, United States; [2]University of Linkoping, Sweden

2753. Noninvasive Measurement of Intravascular Pressure Gradients Based on 3D Anatomy and 4D Flow Image Fusion
Hanieh Mirzaee[1], Anja Hennemuth[1]
[1]Fraunhofer MEVIS, Bremen, Germany

2754. Steady-State 4D Flow Using Double Gating: A Healthy Volunteer Study
Stanislas Rapacchi[1, 2], Yutaka Natsuaki[3], Paul J. Finn[2], Gerhard Laub[4], Daniel Ennis[2], Peng Hu[2]
[1]CRMBM, Aix-Marseille University, Marseille, France; [2]Radiology, UCLA, los angeles, CA, United States; [3]Siemens, Los Angeles, CA, United States; [4]Siemens, CA, United States

2755. Thoracic Aorta Flow Sensitive 4D MR Imaging in Hypertension
Lizhen Cao[1], Zhiyuan Dong[1], Aur¨¦lien F. Stalder[2], Xiangying Du[1], Tianjing Zhang[3], Andreas Greiser[2], Kuncheng Li[1]
[1]The Department of Radiology, Xuanwu Hospital of Capital Medical University, Beijing, China, China; [2]Siemens AG Healthcare Sector, Erlangen, Germany; [3]Siemens MR Northeastern Collaboration, Beijing, China, China

Traditional Poster
Diffusion - Simulation & Validation
Exhibition Hall Thursday 13:30-15:30

2756. Monte Carlo Diffusion Simulations Disambiguate the Biophysical Mechanisms of Diffusion Hinderance Along Tracts
Michiel Kleinnijenhuis[1], Jeroen Mollink[1], Paul Kinchesh[2], Wilfred W. Lam[1], Vitaly L. Galinsky[3], Lawrence R. Frank[3], Sean C. Smart[2], Saad Jbabdi[1], Karla L. Miller[1]
[1]FMRIB Centre, University of Oxford, Oxford, United Kingdom; [2]Department of Oncology, University of Oxford, Oxford, United Kingdom; [3]Center for Scientific Computation in Imaging, University of California San Diego, La Jolla, United States

2757. Theoretical Study of the Free Water Elimination Model
Quinten Collier[1], Jelle Veraart[1, 2], Ben Jeurissen[1], Arnold J. den dekker[1, 3], Jan Sijbers[1]
[1]iMinds-Vision Lab, University of Antwerp, Antwerp, Belgium; [2]Center for Biomedical Imaging, New York University Langone Medical Center, New York, United States; [3]Delft Center for System and Control, Delft University of Technology, Delft, Netherlands

2758. Quantitative Evaluation of Eddy Current Distortion as Part of Quality Assurance Protocol for Multicenter DTI Trial at 3T
Xiaopeng Zhou[1], Ken Sakaie[1], Robert Fox[1], Mark Lowe[1]
[1]The Cleveland Clinic, Cleveland, OH, United States

2759. Calibrating High Q-Value Diffusion MRI Methods with a Novel Anisotropic Phantom
Michal Komlosh[1, 2], Dan Benjamini[3, 4], Alan S. Barnett[3], Ferenc Horkay[3], Peter J. Basser[3]
[1]NICHD/NIH, Bethesda, MD, United States; [2]CNRM/USUHS, Bethesda, MD, United States; [3]NICHD/NIH, MD, United States; [4]The Iby and Aladar Fleischman Faculty of Engineering, Tel-Aviv University, Israel

2760. A Highly Standardized, Easy to Produce and Cost-Effective Isotropic PVP Diffusion Phantom for Quality Assessment and Multi-Center Studies
Pim Pullens[1], Piet Bladt[1], Paul M. Parizel[1]
[1]Radiology, University Hospital Antwerp & University of Antwerp, Antwerp, Belgium

2761. Diffusion Tensor Imaging of Thirty-Five Anisotropic DTI Phantoms for CENTER-TBI
Pim Pullens[1], Michael Bach[2], Bram Stieltjes[3], Dirk Smeets[4], Paul M. Parizel[1]
[1]Radiology, University Hospital Antwerp & University of Antwerp, Antwerp, Belgium; [2]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany; [3]Radiology, Universitätsspital Basel, Basel, Switzerland; [4]icoMetrix, Leuven, Belgium

2762. Quantitative Quality Assurance Metrics in a High Angular Resolution Diffusion Imaging (HARDI) Multicenter Study
Xiaopeng Zhou[1], Ken Sakaie[1], Josef Debbins[2], Robert Fox[1], Mark Lowe[1]

[1]The Cleveland Clinic, Cleveland, OH, United States; [2]Barrow Neurological Institute, Phoenix, AZ, United States

2763. Efficient Gradient Calibration Based on Diffusion MRI

Irvin Teh[1], Mahon L. Maguire[1], Jürgen E. Schneider[1]
[1]Division of Cardiovascular Medicine, Radcliffe Department of Medicine, University of Oxford, Oxford, United Kingdom

2764. Gradient Nonlinearity Correction on ADC Measurement: A Multi-Platform Study on Diffusion Weighted Imaging

Chien-Lin Yeh[1, 2], Ruoyun Ma[1, 2], Brain Dale[3], Thomas L. Chenevert[4], Michael A. Boss[5], Chen Lin[2]
[1]School of Health Sciences, Purdue University, West lafayette, IN, United States; [2]Radiology and Imaging Sciences, Indiana University School of Medicine, Indianapolis, IN, United States; [3]Siemens Medical Solutions, NC, United States; [4]Department of Radiology, University of Michigan Health System, MI, United States; [5]Electromagnetics Division, National Institute of Standards and Technology, CO, United States

2765. Evaluation of MR Contrast in Cleared Tissue

Christoph Leuze[1], Raju Tomer[2], Qiyuan Tian[1], Emily Ferenczi[2], Dan Spielman[1], Michael Zeineh[1], Karl Deisseroth[2, 3], Jennifer A. McNab[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Bioengineering, Stanford University, Stanford, CA, United States; [3]Psychiatry and Behavioural Research, Stanford University, Stanford, CA, United States

2766. Quantification of 3D Microscopic Tissue Features in CLARITY Data for Comparison with Diffusion MRI

Qiyuan Tian[1], Christoph W.U. Leuze[2], Raju Tomer[3], Emily Ferenczi[4], Michael Zeineh[2], Karl Deisseroth[4, 5], Jennifer McNab[2]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Radiology, Stanford University, Stanford, CA, United States; [3]Bioengineering, Stanford University, Stanford , CA, United States; [4]Bioengineering, Stanford University, Stanford, CA, United States; [5]Psychiatry and Behavioral Sciences, Stanford University, Stanford, CA, United States

Traditional Poster
Modeling & Microstructure

Exhibition Hall Thursday 13:30-15:30

2767. *In Vivo* Mouse Brain NODDI Acquired at 9.4T Using Cryogenic Probe

Van Thu Nguyen[1], Farshid Sepehrband[1], Othman Alomair[1], Suyinn Chong[2], Karine Mardon[1], Quang Tieng[1], Graham Galloway[1], Nyoman Kurniawan[1]
[1]Centre for Advanced Imaging, The University of Queensland, Brisbane, QLD, Australia; [2]Mater Research Institute, The University of Queensland, Brisbane, QLD, Australia

2768. ABTIN: ABsolute TIssue Density from NODDI, Focusing on Myelin Density

Farshid Sepehrband[1, 2], Kristi A. Clark[3], Jeremy F. P Ullmann[1], Nyoman D. Kurniawan[1], Gayeshika Leanage[1], David C. Reutens[1], Zhengyi Yang[1, 4]
[1]Centre for Advanced Imaging, University of Queensland, Brisbane, Queensland, Australia; [2]Queensland Brain Institute, University of Queensland, Brisbane, Queensland, Australia; [3]Institute for Neuroimaging and Informatics, University of Southern California, Los Angeles, CA, United States; [4]School of Information Technology and Electrical Engineering, University of Queensland, Brisbane, Queensland, Australia

2769. MRI Measurement of Three-Dimensional Morphological Features of Axons

Dan Benjamini[1, 2], Peter J. Basser[1]
[1]National Institute of Health, Bethesda, MD, United States; [2]Tel Aviv University, Tel Aviv, Israel

2770. *In-Vivo* Measurements of Axon Radius and Density in the Corpus Callosum Using Anomalous Diffusion from Diffusion MRI

Qiang YU[1], Viktor Vegh[1], Kieran O'Brien[1, 2], Thorsten Feiweier[3], David Reutens[1]

[1]Centre for Advanced Imaging, University of Queensland, Brisbane, Queensland, Australia; [2]Healthcare Sector, Siemens Ltd, Brisbane, Queensland, Australia; [3]Siemens Healthcare, Erlangen, Germany

2771. Reconstruction of Size Distribution of Cellular-Sized Pores Using DWI with Clinically Applicable Gradients
Yaniv Katz[1], Dan Benjamini[1, 2], Peter J. Basser[3], Uri Nevo[1]
[1]Biomedical Engineering, Tel Aviv University, Ramat Aviv, Tel Aviv, Israel; [2]Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), National Institutes of Health, Bethesda, MD, United States; [3]Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), National Institutes of Health, Bethesda, MD, United States

2772. Neurite Density Imaging (NDI): Rapid Acquisition and Estimation of the Intracellular Volume Fraction.
Björn Lampinen[1], Danielle van Westen[2, 3], Freddy Ståhlberg[1, 2], Jimmy Lätt[3], Oskar Hansson[4], Markus Nilsson[5]
[1]Dpt. of Medical Radiation Physics, Lund University, Lund, Sweden; [2]Dpt. of Diagnostic Radiology, Lund University, Lund, Sweden; [3]Imaging and function, Skane University Health Care, Lund, Sweden; [4]Clinical Memory Research Unit, Clinical Sciences, Malmö, Lund University, Lund, Sweden; [5]Lund University Bioimaging Center, Lund University, Lund, Sweden

2773. Cell Size, Intracellular Volume Fraction and Membrane Permeability Weighted Imaging: A Monte Carlo Study
Damien J. McHugh[1, 2], Penny L. Hubbard Cristinacce[1, 2], Josephine H. Naish[1, 2], Geoff J M Parker[1, 2]
[1]Centre for Imaging Sciences, The University of Manchester, Manchester, United Kingdom; [2]Biomedical Imaging Institute, The University of Manchester, Manchester, United Kingdom

2774. ActiveAx Using Dictionary Learning with Electron Microscopy Validation
Farshid Sepehrband[1, 2], Daniel C. Alexander[3], Nyoman D. Kurniawan[1], David C. Reutens[1], Zhengyi Yang[1, 4]
[1]Centre for Advanced Imaging, University of Queensland, Brisbane, Queensland, Australia; [2]Queensland Brain Institute, University of Queensland, Brisbane, Queensland, Australia; [3]Department of Computer Science & Centre for Medical Image Computing, University College London, London, United Kingdom; [4]School of Information Technology and Electrical Engineering, University of Queensland, Brisbane, Queensland, Australia

2775. Validation of Extra-Axonal Diffusion Spectrum Model with Frequency-Dependent Restriction
Wilfred W. Lam[1], Bernard Siow[2, 3], Lauren Burcaw[4], Daniel C. Alexander[2, 3], Mark F. Lythgoe[2], Karla L. Miller[1], Saad Jbabdi[1]
[1]FMRIB Centre, University of Oxford, Oxford, United Kingdom; [2]Centre for Advanced Biomedical Imaging, University College London, London, United Kingdom; [3]Centre for Medical Image Computing, University College London, London, United Kingdom; [4]Department of Radiology, New York University School of Medicine, New York, NY, United States

2776. Longitudinally Hindered Diffusion of *In Vivo* Human White Matter at Long Diffusion Time
Wilfred W. Lam[1], Karla L. Miller[1], Michiel Kleinnijenhuis[1], Saad Jbabdi[1]
[1]FMRIB Centre, University of Oxford, Oxford, United Kingdom

2777. Low-Pass Filter Effect of Finite Gradient Duration on Time-Dependent Diffusion in the Human Brain
Hong-Hsi Lee[1], Lauren M. Burcaw[1], Jelle Veraart[1], Els Fieremans[1], Dmitry S. Novikov[1]
[1]Center for Biomedical Imaging, NYU Langone Medical Center, New York, United States

2778. Can We Make QSI Clinically Feasible? : A Study of Short Step QSI
Koji Sakai[1], Jun Tazoe[2], Hajime Yokota[2], Thorsten Feiweier[3], Kentaro Akazawa[4], Hiroyasu Ikeno[2], Kei Yamada[2]
[1]Kyoto University, Kyoto, Japan; [2]Kyoto Prefectural University of Medicine, Kyoto, Japan; [3]Siemens AG, Erlangen, Germany; [4]Johns Hopkins University, MD, United States

2779. Cellular-Level Investigation of a Diffusion Time Dependent Contrast Enhancement Technique for Oncological Imaging
Jeremy J. Flint[1, 2], Brian Hansen[3], Stephen J. Blackband[1, 4]

[1]Neuroscience, University of Florida, Gainesville, FL, United States; [2]UF McKnight Brain Institute, Gainesville, FL, United States; [3]Center for Functionally Integrative Neuroscience, Aarhus University, Aarhus, Denmark; [4]National High Magnetic Field Lab, Tallahassee, FL, United States

2780. Oscillating Gradient Diffusion MRI as a Biomarker for Early Detection of Radiation Therapy Response
Andre Bongers[1], Han Shen[2], Erika Davies[1], Eric Hau, [23]
[1]Mark Wainwright Analytical Centre, University of New South Wales, Sydney, NSW, Australia; [2]Adult Cancer Program, University of New South Wales, Sydney, NSW, Australia; [3]Cancer Care Centre, St George Hospital, NSW, Australia

2781. NODDI Analyses Can Demonstrate Differences of Tissue Microstructure Between Brain Metastasis and Meningioma
Yuichi Suzuki[1], Kouhei Kamiya[1], Masaki Katsura[1], Harushi Mori[1], Akira Kunimatsu[1], Akitake Mukasa[2], Katsuya Maruyama[3], Yasushi Watanabe[1], Takeo Sarashina[1], Keniji Ino[1], Masami Goto[1], Jiro Sato[1], Keiichi Yano[1], Nobuhito Saito[2], Kuni Ohtomo[1]
[1]Department of Radiology, The University of Tokyo Hospital, Bunkyo-ku, Tokyo, Japan; [2]Department of Neurosurgery, The University of Tokyo Hospital, Bunkyo-ku, Tokyo, Japan; [3]Siemens Japan K.K., Tokyo, Japan

2782. Neurite Orientation Dispersion and Density Imaging Could Show the Microstractual Changes of Cortico-Spinal Tract in Patients with Idiopathic Normal Pressure Hydrocephalus
Kohei Tsuruta[1, 2], Ryusuke Irie[2], Masaaki Hori[2], Issei Fukunaga[1, 2], Yoshitaka Masutani[3], Kuohei Kamiya[4], Akira Nishikori[1, 2], Mariko Yoshida[2], Michimasa Suzuki[2], Masakazu Miyajima[2], Madoka Nakajima[2], Koji Kamagata[2], Hajime Arai[2], Atsushi Nakanishi[2], Shigeki Aoki[2], Atsushi Senoo[1]
[1]Tokyo Metropolitan University, Arakawa-ku, Tokyo, Japan; [2]Juntendo University School of Medicine, Bunkyo-ku, Tokyo, Japan; [3]Faculty of Information Sciences and Graduate School of Information Sciences, Hiroshima City University, Hiroshima, Japan; [4]Radiology, The University of Tokyo Hospital, Tokyo, Japan

2783. Diffusion Restriction Along Fibres: How Coherent Is the Corpus Callosum?
ISMRM MERIT AWARD magna cum laude
Jeroen Mollink[1], Michiel Kleinnijenhuis[1], Stamatios N. Sotiropoulos[1], Olaf Ansorge[2], Saad Jbabdi[1], Karla L. Miller[1]
[1]Nuffield Department of Clinical Neurosciences, FMRIB centre, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]Nuffield Department of Clinical Neurosciences, Neuropathology, University of Oxford, Oxford, Oxfordshire, United Kingdom

2784. Can Diffusion Weighted Spectroscopy (DWS) in Brain White Matter Become a Viable Clinical Tool? a Re-Producibility/robustness Study at 3T and 7T
Ece Ercan[1], Emily T. Wood[2, 3], Andrew Webb[1], Daniel S. Reich[2], Itamar Ronen[1]
[1]C. J. Gorter Center for High Field MRI, Department of Radiology, Leiden University Medical Center, Leiden, Netherlands; [2]Translational Neuroradiology Unit (NINDS), National Institutes of Health, Bethesda, MD, United States; [3]Department of Neuroscience, Johns Hopkins University School of Medicine, Baltimore, MD, United States

2785. Estimation of Microstructural Properties of Fixed Corpus Callosum from OGSE Measurements
Wilfred W. Lam[1], Bernard Siow[2, 3], Sean Foxley[1], Steven A. Chance[4], Rogier B. Mars[1, 5], Daniel C. Alexander[2, 3], Mark F. Lythgoe[2], Karla L. Miller[1], Saad Jbabdi[1]
[1]FMRIB Centre, University of Oxford, Oxford, United Kingdom; [2]Centre for Advanced Biomedical Imaging, University College London, London, United Kingdom; [3]Centre for Medical Image Computing, University College London, London, United Kingdom; [4]Division of Clinical Neurology, University of Oxford, Oxford, United Kingdom; [5]Department of Experimental Psychology, University of Oxford, Oxford, United Kingdom

2786. Investigating the Extracellular Contribution to the Double-Wave-Vector Diffusion-Weighted Signal
Patricia Ulloa[1], Viktor Wottschel[2], Martin A. Koch[1]
[1]Institute of Medical Engineering, University of Lübeck, Lübeck, Germany; [2]Queen Square MS Centre, UCL Institute of Neurology, University College London, London, United Kingdom

2787. Simultaneous Determination of Pore Sizes and Direction in Tilted Microcapillaries by Angular-Double-Pulsed-Field-Gradient (D-PFG) NMR.
Darya Morozov[1], Leah Bar[1], Nir Sochen[1], Yoram Cohen[1]
[1]The Raymond and Beverly Sackler Faculty of Exact Science, Tel-Aviv University, Tel-Aviv Yaffo, Israel

2788. Isotropic Diffusion Weighting Provides Insight on Diffusion Compartments in Human Brain White Matter *In Vivo*
Bibek Dhital[1, 2], Elias Kellner, Marco Reisert, Valerij G. Kiselev
[1]German Cancer Consortium (DKTK), Heidelberg, Baden, Germany; [2]Department of Diagnostic Radiology, University Medical Center, Freiburg, Baden, Germany

2789. Multi-Exponential Characteristics of Acetate Diffusion-Weighted MRS Signal in the *In Vivo* Rat Brain at 14.1T
Masoumeh Dehghani M. [1], Nicolas Kunz[2], Bernard Lanz[3], Rolf Gruetter, [23]
[1]Laboratory for Functional and Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne , Lausanne, Vaud, Switzerland; [2]Centre d'Imagerie Biomédicale, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Vaud, Switzerland; [3]Laboratory for Functional and Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Vaud, Switzerland

2790. Investigation of NODDI Estimates at Two Different Magnetic Fields Along the Rat Corpus Callosum
Nicolas Kunz[1], Stéphane Sizonenko[2], Petra Susan Hüppi[2], Rolf Gruetter[1, 3], Yohan van de Looij[4]
[1]CIBM-AIT, EPFL, Lausanne, Vaud, Switzerland; [2]Division of Child Growth and Development, University of Geneva, Geneva, Switzerland; [3]Department of Radiology, University of Geneva and Lausanne, Lausanne, Switzerland; [4]University of Geneva, Division of Child Growth and Development, Geneva, Switzerland

Traditional Poster
Diffusion Acquisition

Exhibition Hall Thursday 13:30-15:30

2791. Minimizing Diffusion Encoding of Slice Selection in Stimulated Echo Imaging
Paul Kinchesh[1], Michiel Kleinnijenhuis[2], Karla L. Miller[2], Sean C. Smart[1]
[1]Department of Oncology, University of Oxford, Oxford, United Kingdom; [2]FMRIB Centre, , Nuffield Department of Clinical Neurosciences, University of Oxford, United Kingdom

2792. Confounding Effects of Imaging Gradients in Stimulated Echo: Case of Diffusion Exchange Imaging
Samo Lasic[1], Henrik Lundell[2], Casper Kaae Sønderby[2], Daniel Topgaard[3], Tim B. Dyrby[2]
[1]CR Development, Lund, Skåne, Sweden; [2]Danish Research Centre for Magnetic Resonance, Copenhagen University Hospital, Hvidovre, Denmark; [3]Physical Chemistry, Lund University, Lund, Skåne, Sweden

2793. A Crusher Gradient Scheme for Stimulated Echo Double Wave Vector Diffusion Imaging for 7T Human MRI
Grant Kaijuin Yang[1, 2], Christoph W.U. Leuze[2], Jennifer McNab[2]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Radiology, Stanford University, Stanford, CA, United States

2794. Differential Diffusion Imaging (DDI): A Novel Scheme for Resolving Small Axon Diameters by a Set of Single PGSE Experiments.
Yogesh Rathi[1], Samo Lasic[2], Tim Dyrby[3], Carl-Fredrik Westin[4]
[1]Harvard Medical School, Boston, MA, United States; [2]Colloidal Resource, Sweden; [3]Danish Research Centre for Magnetic Resonance, Denmark; [4]Harvard Medical School, MA, United States

2795. Characterizing Diffusion Anisotropy for Molecules Under the Influence of a Parabolic Potential: A Plausible Alternative to DTI
Maryam Afzali[1], Cem Yolcu[2, 3], Evren Ozarslan[3]

[1]Department of Electrical Engineering, Sharif University of Technology, Tehran, Iran; [2]Department of Physics and Astronomy, Università di Padova, Padova, Italy; [3]Department of Physics, Bogazici University, Istanbul, Turkey

2796. Real Diffusion Weighted MRI Enabling True Signal Averaging and Increased Diffusion Contrast
Cornelius Eichner[1, 2], Stephen F. Cauley[1], Julien Cohen-Adad[3], Harald E. Möller[2], Robert Turner[2], Kawin Setsompop[1], Lawrence L. Wald[1]
[1]Martinos Center for Biomedical Imaging, Boston, MA, United States; [2]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, SX, Germany; [3]École Polytechnique, University of Montreal, Montreal, QC, Canada

2797. Reduced Blurring in Diffusion-Weighted EPI Using a Dual-Shot, Reverse-Gradient Sequence with Asymmetric K-Space Splicing and Inherent Distortion Correction
Wei Liu[1], Kun Zhou[1], David A. Porter[2]
[1]Siemens Shenzhen Magnetic Resonance Ltd., Shenzhen, Select, China; [2]Fraunhofer MEVIS, Institute for Medical Image Computing, Bremen, Germany

2798. Slice Acceleration Without Parallel Imaging for Diffusion-Weighted Echo-Planar Imaging of the Cervical Spinal Cord
Jürgen Finsterbusch[1, 2]
[1]Department of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Neuroimage Nord, University Medical Centers Hamburg-Kiel-Lübeck, Hamburg-Kiel-Lübeck, Germany

2799. High Resolution Spine Diffusion Imaging Using 2D-Navigated Interleaved EPI with Shot Encoded Parallel-Imaging Technique (SEPARATE)
Xiaodong Ma[1], Zhe Zhang[1], Yishi Wang[1], Erpeng Dai[1], Hua Guo[1]
[1]Center for Biomedical Imaging Research, Department of Biomedical Engineering, School of Medicine, Tsinghua University, Beijing, China

2800. Motion-Compensated Iterative Self-Consistent Parallel Imaging (SPIRiT) and Analytical Q-Ball Imaging Reconstruction for High Spatial and Angular Resolution Diffusion Imaging with Multi-Shot Multi-Channel Non-Cartesian Data
Congyu Liao[1], Hongjian He[1], Song Chen[1], Merry Mani[2], Mathews Jacob[2], Vincent Magnotta[2], Jianhui Zhong[1]
[1]Center for Brain Imaging Science and Technology, Zhejiang University, Hangzhou, Zhejiang, China; [2]University of Iowa, IA, United States

2801. Regularized SENSE+CG with a Fast and Stable Convergence for Reconstruction in Multi-Shot Navigator-Free Diffusion Weighted Spiral Imaging
Xiaodong Ma[1], Bida Zhang[2], Zhangxuan Hu[1], Trong-Kha Truong[3], Allen W. Song[3], Hua Guo[1]
[1]Department of Biomedical Engineering, Tsinghua University, Beijing, China; [2]Healthcare Department, Philips Research China, Shanghai, China; [3]Brain Imaging and Analysis Center, Duke University, Durham, NC, United States

2802. Enhancing Diffusion Weighted Image (DWI) Quality with Navigator-MUSE
ISMRM MERIT AWARD magna cum laude
Mark H. Sundman[1], Hing-Chiu Chang[1], Dan Xu[2], Arnaud Guidon[3], Nan-kuei Chen[1]
[1]Brain Imaging and Analysis Center, Duke University Medical Center, Durham, NC, United States; [2]Global MR Applications and Workflow, GE Healthcare, Waukesha, WI, United States; [3]Global MR Applications and Workflow, GE Healthcare, Boston, MA, United States

2803. Evidence of Rotational Dependency on Standard DTI Measurements
Arturo Cardenas-Blanco[1], Julio Acosta-Cabronero[1], Martin Kanowski[2], Joern Kaufmann[2], Claus Tempelman[2], Stefan Teipel[3], Peter J. Nestor[1]
[1]Brain plasticity and neurodegeneration, German Center for Neurodegenerative Diseases (DZNE), Magdeburg, Germany; [2]Department of Neurology, Otto-von-Guericke University, Magdeburg, Germany; [3]German Center for Neurodegenerative Diseases (DZNE), Rostock, Germany

2804. Reproducibility and Variation in Diffusion Measures of the *In Vivo* and *Ex Vivo* Squirrel Monkey Brain
Kurt Schilling[1], Yurui Gao[1], Iwona Stepniewska[2], Ann S. Choe[1], Bennett A. Landman[3], Adam W. Anderson[1]
[1]VUIIS, Vanderbilt University, Nashville, TN, United States; [2]Psychology, Vanderbilt University, Nasvhille, United States; [3]Electrical Engineering, Vanderbilt University, Nashville, TN, United States

Traditional Poster
Diffusion Processing & Analysis
Exhibition Hall Thursday 13:30-15:30

2805. Why Should Standard Eddy-Current Distortion Correction Techniques Be Avoided Even for Moderately High B-Value Data?
Mark S. Graham[1], Ivana Drobnjak[1], Hui Zhang[1]
[1]Department of Computer Science and Centre for Medical Image Computing, UCL, London, United Kingdom

2806. DTI Geometric Distortion Correction by Non-Linear Registration and Field Map Correction: Quantitative Analysis of DTI Tractography and Fractional Anisotropy
David Rotenberg[1], Peter Savadjiev[2], Yogesh Rathi[2], Aristotle Voineskos[3, 4], M. Mallar Chakravarty[5, 6]
[1]Research Imaging Centre, Centre for Addiction and Mental Health, Toronto, Ontario, Canada; [2]Laboratory of Mathematics and Imaging, Harvard Medical School, MA, United States; [3]Centre for Addiction and Mental Health, Ontario, Canada; [4]Department of Psychiatry, University of Toronto, Ontario, Canada; [5]Cerebral Imaging Centre, Douglas Mental Health University Institute, Quebec, Canada; [6]Department of Psychiatry, McGill University, Quebec, Canada

2807. Investigations on Motion Corruption for Diffusion Weighted Imaging from Population Analysis
Yishi Wang[1], Zhe Zhang[1], Xue Zhang[1], Xuesong Li[1], Sheng Xie[2], Chun Yuan[1, 3], Hua Guo[1]
[1]Center for Biomedical Imaging Research, Department of Biomedical Engineering, School of Medicine, Tsinghua University, Beijing, China; [2]Department of Radiology, China-Japan Friendship Hospital, Beijing, China; [3]Department of Radiology, University of Washington, Seattle, , WA, United States

2808. Ghost Artifact Removal Using Texture Analysis in Spinal Cord Diffusion Tensor Images
Mahdi Alizadeh[1, 2], Pallav Shah[2], Devon M. Middleton[1, 2], Chris J. Conklin, [23], Sona Saksena[2], Scott H. Faro, [12], MJ Mulcahey[4], Jürgen Finsterbusch[5], Feroze B. Mohamed, [12]
[1]Bioengineering, Temple university, Philadelphia, PA, United States; [2]Radiology, Temple university, PA, United States; [3]Electrical Engineering, Temple university, PA, United States; [4]Occupational Therapy, Thomas Jefferson University, PA, United States; [5]Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany

2809. Gibbs Ringing Removal in Diffusion MRI Using Second Order Total Variation Minimization
Jelle Veraart[1], Florian Knoll[1], Jan Sijbers[2], Els Fieremans[1], Dmitry S. Novikov[1]
[1]Center for Biomedical Imaging, NYU Langone Medical Center, New York, NY, United States; [2]iMinds - Vision Lab, University of Antwerp, Antwerp, Belgium

2810. Connectome-Like Quality Diffusion MRI in 13 Minutes - Improving Diffusion MRI Spatial Resolution with Denoising
Samuel St-Jean[1], Guillaume Gilbert[2], Maxime Descoteaux[1]
[1]Sherbrooke Connectivity Imaging Lab (SCIL), Université de Sherbrooke, Sherbrooke, Québec, Canada; [2]MR Clinical Science, Philips Healthcare, Markham, Ontario, Canada

2811. Model-Based Diffusion Tensor Denoising with Tensor and FA Smoothness Constraints
Xi Peng[1], Shanshan Wang[1], Yuanyuan Liu[1], Dong Liang[1]
[1]Paul C. Lauterbur Research Centre for Biomedical Imaging, Shenzhen Institutes of Advanced Technology, Shenzhen, Guangdong, China

2812. High Resolution IVIM Parameter Maps in the Presence of Rician Noise
Alexander M. Cerjanic[1, 2], Joseph L. Holtrop[1, 2], Bradley P. Sutton[1, 2]
[1]Bioengineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]Beckman Institute of Advanced Science and Technology, University of Illinois at Urbana-Champaign, Urbana, IL, United States

2813. Denoising Diffusion-Weighted Images by Using Higher-Order Singular Value Decomposition
Xinyuan Zhang[1], Man Xu[1], Zhe Zhang[2], Hua Guo[2], Fan Lam[3], Zhipei Liang[3], Qianjin Feng[1], Wufan Chen[1], Yanqiu Feng[1]
[1]Biomedical Engineering, Guangdong Provincial Key Laborary of Medical Image Processing, Southern Medical University, Guangzhou, Guangdong, China; [2]Biomedical Engineering, Center for Biomedical Imaging Research,Tsinghua University, Beijing, China; [3]Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States

2814. Accelerated Microstructure Imaging Via Convex Optimization (AMICO) in Crossing Fibers
Anna Auria[1], Eric Canales-Rodriguez[2, 3], Yves Wiaux[4], Tim Dirby[5], Daniel Alexander[6], Jean-Philippe Thiran[7, 8], Alessandro Daducci[1, 8]
[1]Signal Processing Lab (LTS5), EPFL, Lausanne, Switzerland; [2]FIDMAG Germanes Hospitalàries, Barcelona, Spain; [3]Centro de Investigacion Biomédica en Red de Salud Mental, CIBERSAM, Spain; [4]Institute of Sensors, Signals and Systems, Heriot-Watt University, Edinburgh, United Kingdom; [5]Danish Research Centre for Magnetic Resonance, Copenhagen University Hospital Hvidovre, Denmark; [6]Department of Computer Science and Centre for Medical Image Computing, University College London, United Kingdom; [7]Signal Processing Lab (LTS5), EPFL, Switzerland; [8]University Hospital Center (CHUV) and University of Lausanne (UNIL), Switzerland

2815. Diffusion in Realistic Biophysical Systems May Lead to Aliasing Effects in Diffusion Spectrum Imaging
Luis Miguel Lacerda[1], Jonathan I. Sperl[2], Marion I. Menzel[2], Gareth Barker[1], Flavio Dell'Acqua[1]
[1]Department of Neuroimaging, The Institute of Psychiatry, Psychology & Neuroscience, King's College London, London, Denmark Hill, United Kingdom; [2]GE Global Research, Munich, BY, Germany

2816. A New Linear Transform Approach for Estimating ODFs from Multi-Shell Diffusion Data
Divya Varadarajan[1], Justin P. Haldar[1]
[1]Electrical Engineering, University of Southern California, Los Angeles, CA, United States

2817. Diffusion Spectrum Imaging from Undersampled Data Using Tensor Fitting
Gabriel Varela-Mattatall[1], Alexandra Tobisch[2, 3], Tony Stoecker[2, 4], Pablo Irarrazaval[5, 6]
[1]Biomedical Imaging Center, Pontificia Universidad Catolica de Chile, Santiago, Metropolitan District, Chile; [2]German Center for Neurodegenerative Diseases, North Rhine-Westphalia, Germany; [3]Department of Computer Science, University of Bonn, North Rhine-Westphalia, Germany; [4]Department of Physics and Astronomy, University of Bonn, North Rhine-Westphalia, Germany; [5]Biomedical Imaging Center, Pontificia Universidad Catolica de Chile, Metropolitan District, Chile; [6]Department of Electrical Engineering, Pontificia Universidad Catolica de Chile, Metropolitan District, Chile

2818. Diffusion Textures: A Novel Way to Represent Brain Tissue Microstructure
Marco Reisert[1], Katharina Göbel[1], Bibek Dhital[1]
[1]Medical Physics, University Medical Center Freiburg, Freiburg, Germany

2819. *In Vivo* Measurement of Intra-Voxel Crossing Fibers in the Cerebral Cortex Using Diffusion MRI
Qiyuan Tian[1], Christoph W.U. Leuze[2], Ariel Rokem[3], Jennifer A. McNab[2]
[1]Department of Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Department of Radiology, Stanford University, CA, United States; [3]Psychology, Stanford University, Stanford, CA, United States

2820. Diffusion Reconstruction by Combining Spherical Harmonics and Generalized Q-Sampling Imaging
Sudhir K. Pathak[1], Catherine Fissell[2], Deepa Krishnaswamy[1], Sowmya Aggarwal[1], Rebecca Hachey[2], Walter Schneider[2]

[1]Bioengineering, University Of Pittsburgh, Pittsburgh, PA, United States; [2]Psychology, University Of Pittsburgh, Pittsburgh, PA, United States

2821. Reconstruction of Convex Polynomial Diffusion MRI Models Using Semi-Definite Programming
Tom Dela Haije[1], Andrea Fuster[1], Luc Florack[1]
[1]Mathematics and Computer Science, Eindhoven University of Technology, Eindhoven, Noord-Brabant, Netherlands

2822. The Diffusion-ODF as a Band-Pass Filter - Selecting the Right Diffusion and Improving Angular Resolution
Luis Miguel Lacerda[1], Jonathan I. Sperl[2], Marion I. Menzel[2], Gareth Barker[1], Flavio Dell'Acqua[1]
[1]Department of Neuroimaging, The Institute of Psychiatry, Psychology & Neuroscience, King's College London, London, Denmark Hill, United Kingdom; [2]GE Global Research, Munich, BY, Germany

2823. Analysis of Neuronal Fiber Orientation Distribution in Gray Matter and at Gray-White Matter Borders Using Spherical Deconvolution of High-Resolution (1.4 Mm)^3 7T DWI Data
Ralf Luetzkendorf[1], Robin M. Heidemann[2], Thorsten Feiweier[2], Joerg Stadler[3], Sebastian Baecke[1], Michael Luchtmann[4], Johannes Bernarding[1]
[1]Department for Biometry and Medical Informatics, University of Magdeburg, Magdeburg, Germany; [2]Siemens Healthcare, Erlangen, Germany; [3]Leibniz Institute for Neurobiology, Magdeburg, Germany; [4]Department of Neurosurgery, University of Magdeburg, Magdeburg, Germany

2824. Tissue Separation of Multi-Shell DW-MRI with a Physiologically Constrained Multi Compartment Model and Spherical Deconvolution
Alberto De Luca[1, 2], Marco Castellaro[1], Stefania Montemezzi[3], Massimiliano Calabrese[4], Alessandra Bertoldo[1]
[1]Department of Information Engineering, University of Padova, Padova, PD, Italy; [2]Department of Neuroimaging, Scientific Institute, IRCCS "Eugenio Medea", Bosisio Parini, LC, Italy; [3]Radiology Unit, Azienda Ospedaliera di Verona, Verona, Italy; [4]Neurology Section, Department Of Neurological and Movement Sciences, University Hospital of Verona, Verona, Italy

2825. Novel Robust Segmentation of the Thalamic Nuclei – Validation on Healthy Subjects and Patients
Elena Najdenovska[1, 2], Giovanni Battistella[3, 4], Constantin Tuleasca[1, 5], Philippe Maeder[4], Alessandro Daducci[2, 5], Jean-Philippe Thiran, [45], Marc Levivier[1], Eleonora Fornari, [24], Meritxell Bach Cuadra[2, 4]
[1]Department of Clinical Neuroscience, Neurosurgery Service and Gamma Knife Center, Centre Hospitalier Universitaire Vaudois (CHUV), Lausanne, Switzerland; [2]Centre d'Imagerie BioMédicale (CIBM), Lausanne, Switzerland; [3]Department of Neurology, Mount Sinai School of Medicine, NY, United States; [4]Department of Radiology, Centre Hospitalier Universitaire Vaudois (CHUV), Lausanne, Switzerland; [5]Signal Processing Laboratory (LTS5), Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland

2826. LASADD: Linear Acceleration Method for Adapting Diffusion Dictionaries
Ana Karen Loya-Olivas[1], Mariano Rivera[1], Ramon Aranda[1]
[1]Computer Science Department, Centro de Investigación en Matemáticas, Guanajuato, Mexico

2827. Multi-Kernel Estimation of Fiber Orientation Distribution Functions with L0-Norm Induced Group Sparsity
Pew-Thian Yap[1], Yong Zhang[2], Dinggang Shen[1]
[1]Department of Radiology, University of North Carolina, Chapel Hill, NC, United States; [2]Department of Psychiatry & Behavioral Sciences, Stanford University, CA, United States

2828. Construction of a High Angular Resolution Diffusion MRI Atlas Using the Human Connectome Project Data
Fang-Cheng Yeh[1], Timothy Verstynen[1]
[1]Deparment of Psychology, Carnegie Mellon University, Pittsburgh, PA, United States

2829. Recovering Detailed Intra-Voxel White Matter Structure by Using an Adaptive Diffusion Dictionary
Ramon Aranda[1], Mariano Rivera[1], Alonso Ramirez-Manzanares[1]

[1]Computer Science Department, Centro de Investigación en Matemáticas, Guanajuato, Mexico

2830. Diffusivity Anomaly at Midline of Transcallosal Motor Pathway
Ken Sakaie[1], Lael Stone[1], Lowe Mark[1]
[1]The Cleveland Clinic, Cleveland, OH, United States

Traditional Poster
Diffusion Kurtosis
Exhibition Hall Thursday 13:30-15:30

2831. Improving Visibility of Tissue Heterogeneity in Diffusion Kurtosis Imaging Using Vector-Based Non-Local Means Filter
Minxiong Zhou[1, 2], Xu Yan[3], Guang Yang[2]
[1]Shanghai Medical Instrumentation College, University of Shanghai for Science and Technology, Shanghai, China; [2]Key Laboratory of Magnetic Resonance, East China Normal University, Shanghai, China; [3]MR Collaboration NE Asia, Siemens Healthcare, Shanghai, China

ISMRM MERIT AWARD magna cum laude

2832. Detection of Microstructural Changes of Nigra-Striatum Dopaminergic Neurons in Parkinson's Disease Using High Resolution DWI
Akira Nishikori[1, 2], Kohei Tsuruta[1, 2], Koji Kamagata[2], Taku Hatano[2], Fumi Okuzumi[2], Masaaki Hori[2], Michimasa Suzuki[2], Shigeki Aoki[2], Atsushi Seno[1]
[1]Tokyo Metropolitan University, Arakawa-ku, Tokyo, Japan; [2]Juntendo University School of Medicine, Bunkyo-ku, Tokyo, Japan

2833. The Mean Kurtosis Evaluation Measurements Show a Considerable Disparity from the Analytically Evaluated Ones for a Clinically Used Range of B-Values
Andrey Chuhutin[1], Ahmad Raza Khan[1], Brian Hansen[1], Sune Nørhøj Jespersen[1, 2]
[1]Center of Functionally Integrative Neuroscience, Aarhus University, Aarhus, Denmark; [2]Dept. of Physics and Astronomy, Aarhus University, Denmark

2834. Assessing Inter-Subject Variability of White Matter Response Functions Used for Constrained Spherical Deconvolution
Ben Jeurissen[1], Jan Sijbers[1], Jacques-Donald Tournier[2, 3]
[1]iMinds-Vision Lab, Dept. of Physics, University of Antwerp, Antwerp, Belgium; [2]Centre for the Developing Brain, King's College London, London, United Kingdom; [3]Dept. of Biomedical Engineering, King's College London, London, United Kingdom

2835. Simultaneous Measurement of Cerebral Blood Volume and Diffusion Heterogeneity Using Two-Compartment-Model-Based Diffusion Kurtosis Imaging
Wen-Chau Wu[1, 2], Han-Min Tseng[3], Ya-Fang Chen[4]
[1]Graduate Institute of Oncology, National Taiwan University, Taipei, Taiwan; [2]Graduate Institute of Clinical Medicine, National Taiwan University, Taipei, Taiwan; [3]Department of Neurology, National Taiwan University Hospital, Taipei, Taiwan; [4]Department of Medical Imaging, National Taiwan University Hospital, Taipei, Taiwan

2836. Non-Gaussian Diffusion in the Rat Spinal Cord *In Vivo* with Phase and Susceptibility Corrected Segmented EPI
Elizabeth Zakszewski[1], Nathan Skinner[2], Shekar Kurpad[1], Brian Schmit[3], Matthew Budde[1]
[1]Neurosurgery, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Biomedical Engineering, Marquette University, Milwaukee, WI, United States

2837. Cortical Profile of Mean Kurtosis and Fractional Anisotropy with High Resolution DKI and DTI of Macaque Brains
Austin Ouyang[1], Mihovil Pletikos[2], Nenad Sestan[2], Hao Huang[1]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Department of Neurobiology, Yale University, CT, United States

Traditional Poster
Diffusion - Tractography

Exhibition Hall Thursday 13:30-15:30

2838. Probabilistic Fiber Tractography Using Neighborhood Information

Helen Schomburg[1], Thorsten Hohage[1], Christoph Rügge[1], Sabine Hofer[2, 3], Jens Frahm[2]
[1]Institute for Numerical and Applied Mathematics, Georg-August-Universität Göttingen, Göttingen, Germany; [2]Biomedizinische NMR Forschungs GmbH, Max-Planck-Institut für biophysikalische Chemie, Göttingen, Germany; [3]Bernstein Center for Computational Neuroscience, Göttingen, Germany

2839. Parallel Global Tractography

Haiyong Wu[1], Dinggang Shen[1], Pew-Thian Yap[1]
[1]Department of Radiology, University of North Carolina, Chapel Hill, NC, United States

2840. Surface Tracking from the Cortical Mesh Complements Diffusion MRI Fiber Tracking Near the Cortex

Etienne St-Onge[1], Gabriel Girard[1], Kevin Whittingstall[2], Maxime Descoteaux[1]
[1]Sherbrooke Connectivity Imaging Lab, Université de Sherbrooke, Sherbrooke, Québec, Canada; [2]Department of Diagnostic Radiology, Faculty of Medicine and Health Science, Université de Sherbrooke, Sherbrooke, Québec, Canada

2841. Tract Specifics Without the Tears: Fully Automated Tract Segmentation and Quantification

Greg Parker[1], Mark Postans[1], Derek Jones[1]
[1]CUBRIC, School of Psychology, Cardiff University, Cardiff, South Glamorgan, United Kingdom

2842. Line Graphs and Vector Weights: A Novel Paradigm for Brain Network Analysis

Peter Savadjiev[1], Carl-Fredrik Westin[2], Yogesh Rathi[1]
[1]Psychiatry Neuroimaging Laboratory, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, United States; [2]Laboratory for Mathematics in Imaging, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, United States

2843. Megatrack: A Fast and Effective Strategy for Group Comparison and Supervised Analysis of Large-Scale Tractography Datasets

Flavio Dell'Acqua[1], Luis Lacerda[1], Rachel Barrett[1], Lucio D'Anna[2], Stella Tsermentseli[3], Laura Goldstein[4], Marco Catani[2]
[1]Dept of Neuroimaging, King's College London, London, United Kingdom; [2]Dept of Forensic and Neurodevelopmental Sciences, King's College London, London, United Kingdom; [3]Dept of Psychology, University of Greenwich, London, United Kingdom; [4]Dept of Psychology, King's College London, United Kingdom

2844. Cleaning Up the Mess: Tractography Outlier Removal Using Hierarchical QuickBundles Clustering

Marc-Alexandre Côté[1], Eleftherios Garyfallidis[1], Hugo Larochelle[1], Maxime Descoteaux[1]
[1]Université de Sherbrooke, Sherbrooke, Québec, Canada

2845. Joint Brain Connectivity Estimation from Diffusion and Functional MRI Using a Network Flow Model

Shu-Hsien Chu[1], Keshab K. Parhi[1], Christophe Lenglet[1]
[1]University of Minnesota, Minneapolis, MN, United States

2846. A Novel Threshold-Free Network-Based Statistical Method: Demonstration and Parameter Optimisation Using *In Vivo* Simulated Pathology

Lea Vinokur[1, 2], Andrew Zalesky[3, 4], David Raffelt[1], Robert Smith[1], Alan Connelly[1, 2]
[1]The Florey Institute of Neuroscience and Mental Health, Heidelberg, Victoria, Australia; [2]Department of Florey Neurosciences, University of Melbourne, Melbourne, Victoria, Australia; [3]Melbourne School of Engineering, University of Melbourne, Melbourne, Victoria, Australia; [4]Melbourne Neuropsychiatry Centre, University of Melbourne, Melbourne, Victoria, Australia

2847. Pushing the Limits of *Ex-Vivo* Diffusion MRI and Tractography of the Human Brain
Christian Wieseotte[1, 2], Thomas Witzel[3], Jon Polimeni[3], Aapo Nummenmaa[3], Bernhard Gruber[4], Laura Schreiber[1, 5], Lawrence Wald[6]
[1]Department of Radiology, Section of Medical Physics, Johannes Gutenberg University Medical Center, Mainz, Germany; [2]Max Planck Graduate Center, Mainz, Germany; [3]Department of Radiology, Massachusetts General Hospital, Athinoula A. Martinos Center for Biomedical Imaging, Boston, MA, United States; [4]Department for Medical Engineering, University of Applied Sciences Upper Austria, Linz, Austria; [5]Department of Cellular and Molecular Imaging, Comprehensive Heart Failure Center, Würzburg, Germany; [6]Department of Radiology, Massachusetts General Hospital, Athinoula A. Martinos Center for Biomedical Imaging, Boston, MA, United States

2848. Real Time Interaction with Millions of Streamlines
Francois Rheault[1], Jean-Christophe Houde[1], Maxime Descoteaux[1]
[1]Université de Sherbrooke, Sherbrooke, Quebec, Canada

2849. Comparison of Diffusional Kurtosis Imaging (DKI) and Diffusion Spectrum Imaging (DSI) for White Matter Fiber Tractography
G. Russell Glenn[1], Jens H. Jensen[2], Yi-Ping Chao[3], Chu-Yu Lee[2], Joseph A. Helpern[4], Li-Wei Kuo[5]
[1]Neurosciences & Center for Biomedical Imaging, Medical Univesity of South Carolina, Charleston, SC, United States; [2]Radiology & Center for Biomedical Imaging, Medical Univesity of South Carolina, SC, United States; [3]Computer Science and Information Engineering, Chang Gung University, Taoyuan, Taiwan; [4]Radiology, Neurosciences, & Center for Biomedical Imaging, Medical Univesity of South Carolina, SC, United States; [5]Institute of Biomedical Engineering and Nanomedicine, National Health Research Institutes, Miaoli County, Taiwan

2850. Investigating the Consequences for Connectomic Metrics of Methods to Correct Fibre Tracking Biases
Chun-Hung Yeh[1], Robert Smith[1], Xiaoyun Liang[1], Fernando Calamante[1, 2], Alan Connelly[1, 2]
[1]The Florey Institute of Neuroscience and Mental Health, Heidelberg, Victoria, Australia; [2]Department of Medicine, Austin Health and Northern Health, University of Melbourne, Melbourne, Victoria, Australia

2851. Automatic Classification of Brain Tractography Data
Esha Datta[1], Kesshi Jordan[1], Eduardo Caverzasi[1], Roland Henry[1]
[1]University of California, San Francisco, San Francisco, CA, United States

2852. A Non-Rigid Fiber Registration Method for Tractography Level DTI Analysis
YISHAN LUO[1], LIN SHI[2, 3], WINNIE CW CHU[1], VINCENT CT MOK[2], Defeng Wang[1, 4]
[1]Dept of Imaging and Interventional Radiology, The Chinese University of Hong Kong, Hong Kong, Hong Kong; [2]Dept of Medicine and Therapeutics, The Chinese University of Hong Kong, Hong Kong, Hong Kong; [3]Chow Yuk Ho Technology Centre for Innovative Medicine, The Chinese University of Hong Kong, Hong Kong, Hong Kong; [4]Department of Biomedical Engineering and Shun Hing Institute of Advanced Engineering, The Chinese University of Hong Kong, Hong Kong, Hong Kong

2853. Recognition of Bundles in Healthy and Severely Diseased Brains
Eleftherios Garyfallidis[1], Marc-Alex Côté[1], Janice Hau[2], Guy Perchey[2], Laurent Petit[2], Stephen C. Cunnanne[3], Maxime Descoteaux[1]
[1]Département d'informatique, Faculté des Sciences, Université de Sherbrooke, Sherbrooke, Quebec, Canada; [2]GIN UMR5296 CNRS CEA, Université de Bordeaux, France; [3]Research Center on Aging and Department of Medicine, Université de Sherbrooke, Quebec, Canada

2854. Studying White Matter Tractography Reproducibility Through Connectivity Matrices
Gabriel Girard[1, 2], Kevin Whittingstall[3], Rachid Deriche[4], Maxime Descoteaux[1]
[1]Sherbrooke Connectivity Imaging Lab (SCIL), Université de Sherbrooke, Sherbrooke, Quebec, Canada; [2]Project Team Athena - INRIA , Sophia Antipolis, France; [3]Department of Diagnostic Radiology, Faculty of Medicine and Health Science, Université de Sherbrooke, Sherbrooke, Quebec, Canada; [4]Project Team Athena - INRIA, Sophia Antipolis, France

2855. A New Fiber Bundle Pathway Identified with Diffusion MRI Fiber Tractography: Fact or Fantasy?
Anneriet M. Heemskerk[1], Michel Thiebaut de Schotten[2], Marco Catani[2], Silvio Sarubbo[3], Laurent Petit[4], Max Viergever[1], Derek K. Jones[5], John Evans[5], Tomáš Paus[6, 7], Alexander Leemans[1]
[1]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands; [2]King's College London, United Kingdom; [3]Santa Chiara Hospital, Italy; [4]GIN-UMR5296, CNRS, CEA,, University of Bordeaux, Bordeaux, France; [5]Cardiff University, United Kingdom; [6]Rotman Research institute, Baycrest, Toronto, Canada; [7]Departments of Psychology and Psychiatry, University of Toronto, Toronto, Canada

2856. Creating a Child Brain Connectivity Atlas for Reliable Bundle Identification in Developmental Studies
Sofya Kulikova[1], Jessica Dubois[2], Pamela Guevara[3], Jean-François Mangin[4], Catherine Chiron[5], Nicole Chemaly[5], Silvia Napuri[6], Cyril Poupon[7], Lucie Hertz-Pannier[1]
[1]INSERM UMR1129, CEA/Neurospin/UNIACT, Université Paris Descartes, Sorbonne Paris Cité, Paris, France; [2]INSERM UMR992, CEA/Neurospin/UNICOG, Université Paris Sud, Paris, France; [3]University of Concepción/Departamento de Ingeniería Eléctrica, Chile; [4]CEA/Neurospin/UNATI, Gif-sur-Yvette, France; [5]INSERM UMR1129, Université Paris Descartes, Sorbonne Paris Cité, Paris, France; [6]Pediatric Department, CHU Hôpital Sud, Rennes, France; [7]CEA/Neurospin/UNIRS, Gif-sur-Yvette, France

2857. Optimising Connectivity-Based Fixel Enhancement: A Method for Whole-Brain Statistical Analysis of Diffusion MRI
David Raffelt[1], Robert E. Smith[1], J-Donald Tournier[2, 3], Gerard R. Ridgway[4, 5], David Vaughan[1, 6], Alan Connelly[1, 7]
[1]Florey Institute of Neuroscience and Mental Health, Melbourne, VIC, Australia; [2]Centre for the Developing Brain, King's College London, London, United Kingdom; [3]Department of Biomedical Engineering, King's College London, London, United Kingdom; [4]FMRIB Centre, University of Oxford, Oxford, United Kingdom; [5]UCL Institute of Neurology, University College London, London, United Kingdom; [6]Department of Medicine, University of Melbourne, Melbourne, Australia; [7]The Department of Florey Neuroscience and Mental Health, University of Melbourne, Melbourne, VIC, Australia

2858. The Structural Connectivity Basis for Supporting Functional Connectivity in Mice
Joanes Grandjean[1], Zsófia Pröhle[2], Markus Rudin[1, 3]
[1]Institute for Biomedical Engineering, ETH and University Zurich, Zurich, Switzerland; [2]Department of Physics, ETH Zurich, Zurich, Switzerland; [3]Institute of Pharmacology and Toxicology, University Zurich, Zurich, Switzerland

2859. Longitudinal Change of Cortically Transcallosal Connectivity in Macaque Monkeys Revealed by Diffusion Spectrum Imaging Tractography
Yuguang Meng[1], Xiaodong Zhang[1, 2]
[1]Yerkes Imaging Center, Yerkes National Primate Research Center, Emory University, Atlanta, GA, United States; [2]Division of Neuropharmacology and Neurologic Diseases, Yerkes National Primate Research Center, Emory University, Atlanta, GA, United States

2860. Improved *In-Vivo* Reconstruction of the Auditory Pathway Using High Spatial Resolution Diffusion MRI
Tyler Rehbein[1], Michelle Moerel[2], Frederico De Martino[3], An Vu[2], Essa Yacoub[2], Christophe Lenglet[2]
[1]University of Minnesota Medical School, Minneapolis, MN, United States; [2]Center for Magnetic Resonance Research, Department of Radiology, University of Minnesota, Minneapolis, MN, United States; [3]Department of Psychology and Neuroscience, Maastricht University, Maastricht, Netherlands

2861. Combination of Super-Resolution Reconstruction Diffusion Tensor Imaging and Track Density Imaging Reveals Song Control System Connectivity in Zebra Finches
Gwendolyn Van Steenkiste[1], Julie Hamaide[2], Ben Jeurissen[1], Dirk H.J. Poot[3, 4], Johan Van Audekerke[2], Jan Sijbers[1], Marleen Verhoye[2]
[1]iMinds-Vision Lab, University of Antwerp, Antwerp (Wilrijk), Antwerp, Belgium; [2]Bio-Imaging Lab, University of Antwerp, Antwerp, Belgium; [3]BIGR (Medical informatics and Radiology), Erasmus Medical Center Rotterdam, Rotterdam, Netherlands; [4]Imaging Science and Technology, Delft University of Technology, Delft, Netherlands

Traditional Poster
Diffusion Outside the Brain

Exhibition Hall Thursday 13:30-15:30

2862. Perfusion Fraction Tensor Imaging of the Kidney
Fabian Hilbert[1], Simon Veldhoen[1], Tobias Wech[1], Henning Neubauer[1], Thorsten Bley[1], Herbert Köstler[1]
[1]Departement of Radiology, University of Würzburg, Würzburg, Germany

2863. Diffusion Weighting Bias Correction for Quantitative IVIM Metrics in Kidney
Dariya Malyarenko[1], Yuxi Pang[1], Julien Senegas[2], Marko Ivancevic[3], Brian D. Ross[1], Thomas L. Chenevert[1]
[1]Radiology, University of Michigan, Ann Arbor, MI, United States; [2]Philips Research Laboratories, Hamburg, Germany; [3]Philips Healthcare, Best, Netherlands

2864. Use of a Multi-Exponential Attenuation Model for Sequential Registration of Diffusion Weighted Imaging in the Abdomen and Pelvis
Matthew R. Orton[1], Neil Peter Jerome[1], Evangelia Kaza[1], David J. Collins[1], Dow-Mu Koh[2], Bernd Kuehn[3], Martin O. Leach[1]
[1]Radiotherapy and Imaging Department, Institute of Cancer Research, Sutton, Surrey, United Kingdom; [2]Department of Radiology, Royal Marsden Hospital, Sutton, Surrey, United Kingdom; [3]Siemens Medical Solutions, Erlangen, Germany

2865. Intravoxel Incoherent Motion Imaging of Renal Fibrosis: A Murine Model Study of Unilateral Ureteral Obstruction
Tong San Koh[1], Septian Hartono[1], Tiffany P. Hennedige[1], Yet Yen Yan[1], In Chin Song[2], Lin Zheng[2], Wing Sum Lee[2], Helmut Rumpel[3], Laurent Martarello[4], James B.K. Khoo[1], Dow-Mu Koh[5], Choon Hua Thng[1]
[1]National Cancer Centre Singapore, Singapore, Singapore; [2]SingHealth Experimental Medicine Centre, Singapore, Singapore; [3]Singapore General Hospital, Singapore, Singapore; [4]Roche-Singapore Translational Medicine Hub, Singapore, Singapore; [5]Royal Marsden Hospital, Surrey, United Kingdom

2866. Double-Pulsed Gradient Spin-Echo from DTI in the Fibromuscular Stroma of the Prostate
Scott A. Willis[1], Timothy Stait-Gardner[1], William S. Price[1], Roger Bourne[2]
[1]Nanoscale Organisation and Dynamics Group, School of Science and Health, University of Western Sydney, Sydney, NSW, Australia; [2]Discipline of Medical Radiation Sciences, Faculty of Health Sciences, University of Sydney, Sydney, NSW, Australia

2867. Comparison of Seven Compartment Models of Diffusion in Prostate Tissue
Sisi Liang[1], Eleftheria Panagiotaki[2], Peng Shi[3], Roger Bourne[4]
[1]College of Engineering and Science, Victoria University, Melbourne , Vic, Australia; [2]Centre for Medical Image Computing, University College London, London, England, United Kingdom; [3]College of Engineering and Science, Victoria University, Melbourne, Vic, Australia; [4]Discipline of Medical Radiation Sciences, Faculty of Health Sciences, University of Sydney, Sydney, NSW, Australia

2868. Intra-Voxel Incoherent Motion Modelling of Diffusion Weighted MRI Data Is Feasible in 5 Minutes Scan Time
Oliver Gurney-Champion[1, 2], Martijn Froeling[3], Remy Klaassen[4, 5], Hanneke W.M. van Laarhoven[4], Jaap Stoker[1], Arjan Bel[2], Aart J. Nederveen[1]
[1]Radiology, Academic Medical Center, Amsterdam, Netherlands; [2]Radiation Oncology, Academic Medical Center, Amsterdam, Netherlands; [3]Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [4]Department of Medical Oncology, Academic Medical Center, Amsterdam, Netherlands; [5]Laboratory for Experimental Oncology and Radiobiology, Academic Medical Center, Amsterdam, Netherlands

2869. Multi-Site Liver Tumour ADC Reproducibility at 1.5 T
Ryan Pathak[1], Hossein Ragheb[2], Neil A. Thacker[2], David Morris[2], Alan Jackson[1]
[1]The Wolfson Molecular Imaging Centre, University of Manchester, Manchester, United Kingdom; [2]Centre for Imaging Sciences, University of Manchester, Manchester, United Kingdom

2870. Longitudinal Reproducibility of Quantitative Diffusion Weighted MRI Improved by Spatially Constrained Probability Distribution Model of Incoherent Motion (SPIM)
Sila Kurugol[1], Moti Freiman[1], Onur Afacan[1], Sean Clancy[1], Simon K. Warfield[1]
[1]Radiology, Boston Children's Hospital and Harvard Medical School, Boston, MA, United States

2871. Changes in Tissue Components with Distinct Diffusivities Rather Than 'cellularity' Is the Major Contributor to Clinically Observed Variations of ADC in Prostate Tissue
Aritrick Chatterjee[1], Geoff Watson[2], Esther Myint[3], Paul Sved[2], Mark McEntee[1], Roger Bourne[1]
[1]Faculty of Health Sciences, University of Sydney, Sydney, New South Wales, Australia; [2]Royal Prince Alfred Hospital, Sydney, New South Wales, Australia; [3]Douglass Hanly Moir Pathology, Sydney, New South Wales, Australia

2872. Optimised VERDICT MRI Protocol for Prostate Cancer Characterisation
Eleftheria Panagiotaki[1], Andrada Ianus[1], Edward Johnston[2], Rachel W. Chan[2], Nicola Stevens[2], David Atkinson[2], Shonit Punwani[2], David J. Hawkes[1], Daniel C. Alexander[1]
[1]Centre for Medical Image Computing, University College London, London, United Kingdom; [2]Centre for Medical Imaging, University College London, London, United Kingdom

2873. Title: Importance of T2 Correction in Intravoxel Incoherent Motion (IVIM) Based Quantitation of the Necrosed Region Post Thermal Ablation of Uterine Fibroid
Feifei Qu[1], Ramkumar Krishnamurthy[2], Pei-Herng Hor[1, 3], John Fisher[4], Claudio Arena[4], Debra Dees[4], Raja Muthupillar[4]
[1]Physics Department, University of Houston, Houston, TX, United States; [2]Radiology Department, Texas Children's Hospital, Houston, TX, United States; [3]Texas Center for Superconductivity, Houston, TX, United States; [4]Diagnostic and Interventional Radiology, St. Luke's Medical Center, Houston, TX, United States

ISMRM MERIT AWARD magna cum laude

2874. Histogram Analysis of Apparent Diffusion Coefficient Maps Reveals Differences Among the Different Types of Uterine Fibroids Based on T2WIs
Hao Fu[1], Chenxia Li[1], Rong Wang[1], Jianxin Guo[1], Jian Yang[1]
[1]Department of Radiology, the First Affiliated Hospital of Xi'an Jiaotong University, Xi'an, Shaanxi, China

ISMRM MERIT AWARD magna cum laude

2875. Characterization of High Performance Human Gradient System for Spin Echo Cardiac DTI
Konrad Schieban[1], Timothy G. Reese[2], Christian T. Stoeck[1], David E. Sosnovik[2], Sebastian Kozerke[1, 3], Choukri Mekkaoui[2]
[1]Institute for Biomedical Engineering, ETH Zurich, Zurich, Switzerland; [2]Radiology, Harvard Medical School, Massachusetts General Hospital, Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [3]Division of Imaging Sciences, King's College London, London, United Kingdom

2876. Evaluation of Diffusion-Weighted Imaging Apparent Diffusion Coefficient Histogram for the Differential Diagnosis Between Lipoma and Liposarcoma
Haiyan Sun[1], Shaowu Wang[2], Ziheng Zhang[3], Weisheng Zhang[1], Lina Zhang[1], Minting Zheng[1], Meiyu Sun[1], Qingwei Song[1], Dianxiu Ning[1]
[1]Radiology department, The first hospital affiliated to Dalian Medical University, Dalian, Liaoning, China; [2]Radiology department, The second hospital affiliated to Dalian Medical University, Dalian, Liaoning, China; [3]GE Healthcare China,Beijing, Beijing, China

2877. Investigation of the Presence and Repeatability of Intravoxel Incoherent Motion (IVIM) in Breast Parenchyma of Healthy Volunteers Using an Optimised B-Value Scheme
Nina L. Purvis[1], Peter Gibbs[2], Martin D. Pickles[2], Lindsay W. Turnbull[2]
[1]Centre for MR Investigations, Hull York Medical School, Hull, East Yorkshire, United Kingdom; [2]Centre for MR Investigations, University of Hull at HYMS, Hull, East Yorkshire, United Kingdom

2878. The Use of Quantitative T2 to Enhance Computed Diffusion Weighted Imaging

Lin Cheng[1], Matthew D. Blackledge[1], David J. Collins[1], Nina Tunariu[1], Martin O. Leach[1], Dow-Mu Koh[1]
[1]Institute of Cancer Research, Sutton, London, United Kingdom

Electronic Poster
Diffusion Sequences & Sampling

Exhibition Hall Monday 10:45-11:45

Computer 1 **2879. *In Vivo* Diffusion Tensor Imaging and Tractography of Human Brain at Submillimeter Isotropic Resolution on a Clinical MRI Scanner**
Mark Sundman[1], Hing-Chiu Chang[1], Laurent Petit[2], Shayan Guhaniyogi[1], Christopher Petty[1], Allen Song[1], Nan-kuei Chen[1]
[1]Brain Imaging and Analysis Center, Duke University Medical Center, Durham, NC, United States; [2]Groupe d'Imagerie Neurofonctionnelle (GIN) - UMR5296, CNRS, CEA, Université de Bordeaux, Bordeaux, France

Computer 2 **2880. Diffusion MRI of Crossing Fibers Combining Double Pulsed Field Gradient (DPFG) Eccentricity and Q-Ball Imaging**
Thomas Witzel[1], Aapo Nummenmaa[1], Qiuyun Fan[1], Susie Yi Huang[1], Lawrence Leroy Wald[1, 2]
[1]Department of Radiology, Harvard Medical School, A.A.Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States; [2]Harvard-MIT Division of Health Sciences and Technology, Cambridge, MA, United States

Computer 3 **2881. Eddy Current Compensation for Double Wave Vector Diffusion MRI**
Lars Müller[1], Andreas Wetscherek[1], Frederik Bernd Laun[1]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

Computer 4 **2882. Accelerated Motion-Robust Non-Cartesian Multi-Shot Diffusion-Weighted Imaging with Reconstruction in the Image Space**
Benoit Scherrer[1], Ali Gholipour[1], Onur Afacan[1], Sanjay P. Prabhu[1], Simon K. Warfield[1]
[1]Harvard Medical School, Boston Children's Hospital, Boston, MA, United States

Computer 5 **2883. Variable Sample Density at High B-Values for Radial Diffusion Spectrum Imaging Improves Angular Resolution**
Steven Baete[1, 2], Fernando Emilio Boada[1, 2]
[1]Center for Advanced Imaging Innovation and Research (CAI2R), NYU School of Medicine, New York, NY, United States; [2]Center for Biomedical Imaging, Dept. of Radiology, NYU School of Medicine, New York, NY, United States

Computer 6 **2884. Comparison of NOGSE and PGSE Sequences for Axon Diameter Estimation**
William Perrault[1], Tanguy Duval[1], Julien Cohen-Adad[1, 2]
[1]Polytechnique de Montreal, Montreal, Quebec, Canada; [2]Functional Neuroimaging Unit, CRIUGM, University of Montreal, Montreal, Quebec, Canada

Computer 7 **2885. Ghost and Distortion Correction in DW-EPI Using Phase Labeling Approach**
Victor B. Xie[1, 2], Ed X. Wu[1]
[1]The University of Hong Kong, Laboratory of Biomedical Imaging and Signal Processing, Hong Kong SAR, China; [2] The University of Hong Kong, Department of Electrical and Electronic Engineering, Hong Kong SAR, China

Computer 8 **2886. Diffusion-Weighted Matched-Phase Adiabatic Spin Echo (DW-MASE) Sequence for Ultrahigh Field Brain Diffusion-Weighted Imaging**
Hadrien Dyvorne[1], Rafael O'Halloran[1], Priti Balchandani[1]
[1]Radiology, Icahn School of Medicine at Mount Sinai, New York, NY, United States

Computer 9 **2887. Generalized Blipped CAIPI for Interleaved EPI Diffusion Weighted Imaging**
Erpeng Dai[1], Zhe Zhang[1], Xiaodong Ma[1], Bida Zhang[2], Bin Xie[2], Chun Yuan[1, 3], Hua Guo[1]
[1]Center for Biomedical Imaging Research, Department of Biomedical Engineering, School of Medicine, Tsinghua University, Beijing, China; [2]Healthcare Department, Philips Research China, Shanghai, China; [3]Department of Radiology, University of Washington, Seattle, WA, United States

Computer 10 **2888. The High Resolution 3D Rat Spine Diffusion Study by Utilizing Wideband MRI Technique**
Po Wei Cheng[1, 2], Yung Hao Chuang[1, 2], Yun An Huang[2], Edzer L. Wu[2], Tzi Dar Chiueh, Jyh Horng Chen[1, 2]

[1]Graduate Institute of Biomedical Engineering and Bioinformatics,National Taiwan University, Taipei, Taiwan, Taiwan; [2]Interdisciplinary MRI/MRS Lab, Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan

Computer 11 2889. Feasibility of *In Vivo* Dynamic Diffusion Tensor Imaging on a 3T Clinical Scanner with a Multi Echo Sequence and Compressed Sensing Reconstruction

Steven Baete[1, 2], Jose Raya[2], Florian Knoll[1, 2], Gene Young Cho[2, 3], Prodromos Parasoglou[1, 2], Ryan Brown[1, 2], Tobias Block[1, 2], Ricardo Otazo[1, 2], Jenny Bencardino, Eric Sigmund[1, 2]
[1]Center for Advanced Imaging Innovation and Research (CAI2R), NYU School of Medicine, New York, NY, United States; [2]Center for Biomedical Imaging, Dept. of Radiology, NYU School of Medicine, New York, NY, United States; [3]Sackler Institute of Graduate Biomedical Sciences, NYU School of Medicine, New York, United States

Computer 12 2890. Undersampled Simultaneous Multi-Slice Readout-Segmented EPI Diffusion Acquisition with a Patch-Based Low Rank Constraint

Ganesh Adluru[1], Bradley D. Bolster Jr[2], Robert Frost[3], Lorie Richards[4], Edward V.R. DiBella[1]
[1]Radiology, University of Utah, Salt Lake City, UT, United States; [2]Siemens Healthcare, Salt Lake City, UT, United States; [3]FMRIB Centre, Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, United Kingdom; [4]Occupational Therapy, University of Utah, Salt Lake City, UT, United States

Computer 13 2891. Investigation of the Golden-Angle Radial DESS Sequence for Diffusion-Weighted MRI

Xia Zhao[1], Michael Langham[1], Cheng Li[1], Hee Kwon Song[1]
[1]Laboratory for Structural NMR Imaging, University of Pennsylvania, Philadelphia, PA, United States

Computer 14 2892. Novel Single and Multiple Shell Gradient Sampling Schemes for Diffusion MRI Using Spherical Codes

Jian Cheng[1, 2], Dinggang Shen[3], Pew-Thian Yap[3], Peter Basser[1]
[1]Section on Tissue Biophysics and Biomimetics (STBB), PPITS, NICHD, NIH, Bethesda, MD, United States; [2]The Intramural Research Program (IRP), NIBIB , Bethesda, MD, United States; [3]Department of Radiology and BRIC, The University of North Carolina at Chapel Hill, NC, United States

Computer 15 2893. Diffusion Weighted Imaging Using Multi-Shot Spiral with a Simultaneous Multi-Slice Excitation

Joseph L. Holtrop[1, 2], Bradley P. Sutton[1, 2]
[1]Bioengineering, Univerity of Illinois Champaign-Urbana, Urbana, IL, United States; [2]Beckman Institute, University of Illinois at Urbana-Champaign, Urbana, IL, United States

Computer 16 2894. Effects of Maximal B Value and Sampling Interval on Water Displacement Profile in Q-Space Imaging

Ping-Huei Tsai[1, 2], Hua-Shan Liu, [23], Hsiao-Wen Chung[4], Chia-Feng Lu[2], Fei-Ting Hsu[2], Li-Chun Hsieh[2], Cheng-Yu Chen[1, 2]
[1]Department of Radiology, School of Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan; [2]Imaging Research Center and Department of Medical Imaging, Taipei Medical University Hospital, Taipei Medical University, Taipei, Taiwan; [3]Graduate Institute of Clinical Medicine, Taipei Medical University, Taipei, Taiwan; [4]Graduate Institute of Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan

Computer 17 2895. Optimisation of Single-Shell HARDI for Neonatal Imaging

Jacques-Donald Tournier[1], Emer Hughes[1], Nora Tusor[1], A. David Edwards[1], Joseph V. Hajnal[1]
[1]Centre for the Developing Brain, Kings College London, London, United Kingdom

Computer 18 2896. Joint Reconstruction of Quantitative T_2 and ADC Maps in the Brain Using Spin Echo Diffusion Weighted Imaging

Eric Aliotta[1, 2], Daniel B. Ennis[1, 2]
[1]Radiological Sciences, UCLA, Los Angeles, CA, United States; [2]Biomedical Physics IDP, UCLA, Los Angeles, CA, United States

Computer 19 2897. Data-Driven Optimisation of Multi-Shell HARDI

Jacques-Donald Tournier[1, 2], Emer Hughes[1, 3], Nora Tusor[1, 3], Stamatios N. Sotiropoulos[4], Saad Jbabdi[4], Jesper Andersson[4], Daniel Rueckert[5], A. David Edwards[1, 3], Joseph V. Hajnal[1, 2]
[1]Centre for the Developing Brain, Kings College London, London, United Kingdom; [2]Department of Biomedical Engineering, Kings College London, London, United Kingdom; [3]Department of Perinatal Imaging & Health, Kings College London, London, United

Kingdom; [4]FMRIB Centre, University of Oxford, Oxford, United Kingdom; [5]Department of Computing, Imperial College London, London, United Kingdom

Computer 20 **2898. Acquisition Strategies for Highly Accelerated Diffusion Weighted Imaging**

Pavan Poojar[1], Bikkemane Jayadev Nutandev[1], Arush Honnedevasthana Arun[1], Antharikshanagar Bellappa Sachin Anchan[1], Ramesh Venkatesan[2], Sairam Geethanath[1]
[1]Dayananda Sagar Institutions, Bangalore, karnataka, India; [2]Wipro-GE Healthcare, karnataka, India

Computer 21 **2899. Quantitative Evaluation of Rotating Short-Axis (RSA) EPI for High Spatial Resolution Diffusion MRI**

Yu-Chien Wu[1]
[1]Radiology and Imaging Sciences , Indiana University School of Medicine, Indianapolis, IN, United States

Computer 22 **2900. Retrospective Motion Correction in Diffusion-Weighted Imaging by Using Optimum Order for Measuring Diffusion Directions**

Suguru Yokosawa[1], Hisaaki Ochi[1], Yoshitaka Bito[2]
[1]Central Research Laboratory, Hitachi, Ltd., Kokubunji-shi, Tokyo, Japan; [2]Hitachi Medical Corporation, Kashiwa, Chiba, Japan

Computer 23 **2901. Comparison of Three Different Diffusion Weighted Imaging Acquisitions of the Upper Abdomen Between 1.5 T and 3 T**

Zhuo Shi[1], Xinming Zhao[1], Han Ouyang[1], Lizhi Xie[2]
[1]Department Of Imaging Diagnosis ,Cancer Hospital, Chinese Academy of Medical Sciences & Peking Union, Beijing, China; [2]GE Healthcare China, Beijing, China

Computer 24 **2902. A Framework to Calculate the IVIM Signal for Different Diffusion Gradient Profiles**

Andreas Wetscherek[1], Frederik Bernd Laun[1]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

Electronic Poster
Diffusion: Non Gaussian

Exhibition Hall Monday 10:45-11:45

Computer 25 **2903. Influence of Blood Flow on Intracranial Water Fluctuation: A Phantom Study**

Shota Ishida[1], Tosiaki Miyati[1], Naoki Ohno[1], Tomohiro Chigusa[2], Hikari Usui[3], Masaaki Hattori[4], Yuki Hiramatsu[4], Satoshi Kobayashi[5], Toshifumi Gabata[5]
[1]Division of Health sciences, Graduate School of Medical Sciences, Kanazawa University, Kanazawa, Ishikawa, Japan; [2]Okazaki City Hospital, Okazaki, Aichi, Japan; [3]Yokohama City University Hospital, Yokohama, Kanagawa, Japan; [4]School of Health sciences, College of Medical, Pharmaceutical and Health sciences, Kanazawa University, Kanazawa, Ishikawa, Japan; [5]Department of Radiology, Kanazawa University School of Medicine, Kanazawa, Ishikawa, Japan

Computer 26 **2904. Identification of the Vascular and Avascular Zones of Human Meniscus with Intravoxel Incoherent Motion Reduced FOV Diffusion Weighted MR Imaging**

Tan Guo[1], Dandan Zheng[2], Min Chen[1], Juan Chen[1]
[1]Department of Radiology, Beijing Hospital, Beijing, China; [2]GE Healthcare, China, Beijing, China

Computer 27 **2905. A Time Efficient IVIM Analysis Method Using Fuzzy Clustering Algorithm**

Kaining Shi[1], He Wang[2], Guang Cao[3], Ying Qi[4], Xiaoming Wang[4]
[1]Imaging Systems Clinical Science, Philips Healthcare (China), Beijing, China; [2]Philips Research (China), Shanghai, China; [3]Imaging Systems Clinical Science, Philips Healthcare (China), Hongkong, China; [4]Radiology Department, Shengjing Hospital of China Medical University, Shenyang, Liaoning, China

Computer 28 **2906. Biexponential Modeling of the Diffusion Weighted MRI Signal in a U87 Brain Tumor Model: A Comparison of Least Squares and Bayesian Modeling**

Alexander D. Cohen[1], Kimberly R. Pechman[1], Mona Al-Gizawiy[1], Kathleen M. Schmainda[1, 2]
[1]Radiology, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States

Computer 29 **2907. Anomalous Diffusion Stretched Exponential γ-Imaging Model Provides New Information on Spinal Cord Microstructure**

Alessandra Caporale[1, 2], Marco Palombo, [23], Silvia Capuani[2, 4]
[1]Physics Department, University 'Sapienza', Rome, ITALY, Italy; [2]Physics Department, CNR-IPCF Roma Sapienza University of Rome, Rome, ITALY, Italy; [3]CEA/DSV/12BM/MIRCen, Fontenay-aux-Roses, FRANCE, France; [4]Center for Life NanoScience@LaSapienza,Istituto Italiano di Tecnologia, Rome, ITALY, Italy

Computer 30 **2908. A Statistically Stationary Anomalous Diffusion Model for Diffusion Weighted Imaging**

Yang Fan[1], Bing Wu[2], Jia-Hong Gao[1]
[1]Center for MRI Research, Peking University, Beijing, China; [2]GE Healthcare, Beijing, China

Computer 31 **2909. Using Continuous Time Random Walk Diffusion to Quantify the Progression of Huntington's Disease**

Allen Q. Ye[1], Rodolfo Gatto[1], Luis Colon-Perez[2], Thomas Mareci[2], Gerardo Morfini[1], Richard Magin[1]
[1]University of Illinois at Chicago, Chicago, IL, United States; [2]University of Florida, Gainesville, FL, United States

Computer 32 **2910. Reliability of the Diffusion Indexes Derived from Fast Diffusion Kurtosis Imaging**

Wen-Chau Wu[1, 2]
[1]National Taiwan University, Taipei, Taiwan; [2]Graduate Institute of Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan

Computer 33 **2911. Comparison of Results Obtained by Fitting DWI Data to a Model Including IVIM and Kurtosis Using Nonlinear Least Squares and Maximum Likelihood Estimation**

Keith Hulsey[1], Matthew Lewis[1], Yin Xi[1], Qing Yuan[1], Robert Lenkinski[1]
[1]Radiology, The University of Texas Southwestern Medical Center, Dallas, TX, United States

Computer 34 **2912. Discrimination Between Tumor-Infiltration and Vasogenic Edema Using Non-Gaussian Diffusion MRI Technoques: Preliminary Experience**

Kouhei Kamiya[1], Yuichi Suzuki[2], Shota Tanaka[3], Akitake Mukasa[3], Masaaki Hori[4], Harushi Mori[1], Akira Kunimatsu[1], Nobuhito Saito[3], Shigeki Aoki[4], Kuni Ohtomo[1]
[1]Department of Radiology, The University of Tokyo, Bunkyo, Tokyo, Japan; [2]Department of Radiological Technology, The University of Tokyo Hospital, Bunkyo, Tokyo, Japan; [3]Department of Neurosurgery, The University of Tokyo, Bunkyo, Tokyo, Japan; [4]Department of Radiology, Juntendo University School of Medicine, Bunkyo, Tokyo, Japan

Computer 35 **2913. Diffusion Kurtosis Imaging of Fibrotic Mouse Kidneys**

Birgitte Fuglsang Kjølby[1], Steen Jakobsen[2], Jonas Brorson Jensen[2], Lea Hougaard Pedersen[3], Louise M. Rydtoft[1], Sune N. Jespersen[1, 4], Brian Hansen[1]
[1]CFIN, Aarhus University Hospital, Aarhus, Denmark; [2]Nuclear Medicine and PET Center, Aarhus University Hospital, Aarhus, Denmark; [3]Research Lab. for Biochemical Patology, Aarhus University Hospital, Aarhus, Denmark; [4]Dept. of Physics and Astronomy, Aarhus University, Aarhus, Denmark

Computer 36 **2914. Diffusion-Tensor-Based Method for Robust and Accurate Estimation of Axial and Radial Diffusional Kurtosis**

Yasuhiko Tachibana[1, 2], Takayuki Obata[1], Hiroki Tsuchiya[1], Tokuhiko Omatsu[1], Riwa Kishimoto[1], Koji Kamagata[3], Masaaki Hori[3], Shigeki Aoki[3], Tomio Inoue[2]
[1]Research Center of Charged Particle Therapy, National Institute of Radiological Sciences, Chiba, Japan; [2]Department of Radiology, Yokohama City University, Yokohama, Kanagawa, Japan; [3]Department of Radiology, Juntendo University, Tokyo, Japan

Computer 37 **2915. Inner Field of View Diffusion Kurtosis Imaging (DKI) of the Pediatric Spinal Cord**

Chris J. Conklin[1, 2], Devon M. Middleton, [23], Jürgen Finsterbusch[4], Mahdi Alizadeh, [23], Scott H. Faro, [23], Pallav Shah[2], Laura Krisa[5, 6], Rebecca Sinko[6], Joan Z. Delalic[1], MJ Mulcahey[6], Feroze B. Mohamed, [23]
[1]Electrical Engineering, Temple University, Philadelphia, PA, United States; [2]Radiology, Temple University, Philadelphia, PA, United States; [3]Bioengineering, Temple University, Philadelphia, PA, United States; [4]Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [5]Physical Therapy, Thomas Jefferson University, Philadelphia, PA, United States; [6]Occupational Therapy, Thomas Jefferson University, Philadelphia, PA, United States

Computer 38 **2916. Diffusion Complexity of Gray Nucleus in Alzheimer' S Disease: An Initial Diffusion Kurtosis Imaging Study**
Weiwei Wang[1], Rui Hu[1], Ziheng Zhang[2], Qingwei Song[1], Ailian Liu[1], Yanwei Miao[1]
[1]Radiology Department, the First Affiliated Hospital of Dalian Medical University, Dalian, Liaoning, China; [2]GE Healthcare China, Beijing, China

Computer 39 **2917. Whole Body Diffusion Weighted Imaging in Multiple Myeloma; a Comparison of Gaussian and Non-Gaussian Diffusion Models for Quantitative Derived Parameters**
Arash Latifoltojar[1], Margaret Hall-Craggs[2], Alan Bainbridge[2], Stuart Taylor[1], Nikos Dikaios[1], Kwee Yong[1], Neil Rabin[2], Shonit Punwani[1]
[1]University College London, London, United Kingdom; [2]University College London Hospital, London, United Kingdom

Computer 40 **2918. Effect of Axonal Structure to DKI White Matter Parameters - A Monte Carlo Simulation Study**
Jordan Kovar[1], Rao Gullapalli[2], Jiachen Zhuo[2]
[1]Physics & Mathematical Sciences, Worcester Polytechnic Institute, Worcester, MA, United States; [2]Diagnostic Radiology and Nuclear Medicine, University of Maryland School of Medicine, Baltimore, MD, United States

Computer 41 **2919. Modeling of Brain Microstructure by Kurtosis Analysis of Neural Diffusion Organization (KANDO)**
Edward S. Hui[1], G. Russell Glenn[2], Joseph A. Helpern[3], Jens H. Jensen[4]
[1]Diagnostic Radiology, The University of Hong Kong, Pokfulam, Hong Kong; [2]Neurosciences & Center for Biomedical Imaging, Medical University of South Carolina, Charleston, SC, United States; [3]Radiology, Neurosciences & Center for Biomedical Imaging, Medical University of South Carolina, Charleston, SC, United States; [4]Radiology & Center for Biomedical Imaging, Medical University of South Carolina, Charleston, SC, United States

Computer 42 **2920. Double-Pulsed Diffusional Kurtosis Imaging for the *In Vivo* Assessment of Human Brain Microstructure**
Edward S. Hui[1], Jens H. Jensen[2, 3]
[1]Department of Diagnostic Radiology, The University of Hong Kong, Pokfulam, Hong Kong, China; [2]Department of Radiology and Radiological Science, Medical University of South Carolina, Charleston, SC, United States; [3]Center for Biomedical Imaging, Medical University of South Carolina, Charleston, SC, United States

Computer 43 **2921. Kurtosis Imaging Network: A Collaborative, Open-Source Imaging Database**
Rachael LeeAnn Deardorff[1], Emilie T. McKinnon[1], Tara Eckenrode Sokolowski[1], Jens H. Jensen[1], Masaaki Hori[2], Varan Govind[3], Joseph A. Helpern[1]
[1]Department of Radiology & Radiological Science, Medical University of South Carolina, Charleston, SC, United States; [2]Department of Radiology, Juntendo University School of Medicine, Tokyo, Japan; [3]Miller School of Medicine, University of Miami, Miami, FL, United States

Computer 44 **2922. Preliminary Evidence of Midazolam Effect in Brain Microstructure Using Diffusional Kurtosis Imaging**
Xingju Nie[1], Dorothea Rosenberger[2], Aurelie Ledreux[3], Ann-Charlotte Granholm[3], Heather Boger[3], Maria Falangola[1, 3]
[1]Radiology and Center for Biomedical Imaging, Medical University of South Carolina, Charleston, SC, United States; [2]Anesthesiology, University of Utah, UT, United States; [3]Neuroscience, Medical University of South Carolina, Charleston, SC, United States

Computer 45 **2923. Clinical Application of Gamma Distribution Model for Spinal Lesions: Initial Clinical Results**
Miyuki Takasu[1], Koichi Oshio[2], Yuji Akiyama[1], Ryuji Akita[1], Kazushi Yokomachi[1], Yoko Kaichi[1], Shuji Date[1], Kazuo Awai[1]
[1]Diagnostic Radiology, Hiroshima University Hospital, Hiroshima, Japan; [2]Department of Diagnostic Radiology, Keio University, Tokyo, Japan

Computer 46 **2924. Characterization of Micro-Structural Changes in the Ultra-Early Phase of Antiangiogenic Treatment Using Non-Gaussian Diffusion Models**
Zaiyi Liu[1], Xin Chen[2], Zelan Ma[1], Zhongping Zhang[3]
[1]Radiology, Guangdong General Hospital, Guangdong Academy of Medical Sciences, Guangzhou, Guangdong, China; [2]Radiology, Guangzhou First People's Hospital, Guangzhou Medical College, Guangzhou, Guangdong, China; [3]GE Healthcare China, Beijing, China

Computer 47 **2925. Fitting the Diffusional Kurtosis Tensor to Rotated Diffusion MR Images**

Pedro A. Gómez[1, 2], Tim Sprenger[1, 2], Marion I. Menzel[2], Jonathan I. Sperl[2]
[1]Technical University Munich, Munich, Germany; [2]GE Global Research, Munich, Germany

Computer 48 **2926. Carpe Momentum: Computing Kurtosis with Anomalous Diffusion Measures**

Carson Ingo[1], Yu Fen Chen[2], Todd B. Parrish[2], Andrew G. Webb[1], Itamar Ronen[1]
[1]C.J. Gorter Center for High Field MRI, Department of Radiology, Leiden University Medical Center, Leiden, Netherlands; [2]Department of Radiology, Northwestern University, Chicago, IL, United States

Electronic Poster
Diffusion Acquisition

Exhibition Hall Monday 10:45-11:45

Computer 49 **2927. Fat Suppression for DW-FSE Sequences Using an Integrated Multi-Acquisition Dixon Method**

ISMRM MERIT AWARD magna cum laude

Tim Schakel[1], Bjorn Stemkens[1], Hans Hoogduin[2], Marielle Philippens[1]
[1]Radiotherapy, UMC Utrecht, Utrecht, Netherlands; [2]Radiology, UMC Utrecht, Utrecht, Netherlands

Computer 50 **2928. Modelling Multiple Flip Angle Diffusion Weighted SSFP Data**

Saad Jbabdi[1], Sean Foxley[1], Karla L. Miller[1]
[1]FMRIB Centre, University of Oxford, Oxford, Oxfordshire, United Kingdom

Computer 51 **2929. A Short-TE Computed Diffusion Imaging (CDWI)**

Tokunori Kimura[1], Naotaka Sakashita[1], Yutaka Machii[2]
[1]Clinical Application Research and Development Dept., Toshiba Medical Systems corp., Otawara, Tochigi, Japan; [2]MRI development dept., Toshiba Medical Systems corp., Otawara, Tochigi, Japan

Computer 52 **2930. On the Influence of Scanner Vibrations on ADC in Apparent Exchange Rate Measurements**

Julian Emmerich[1], Lars Müller[1], Andreas Wetscherek[1], Frederik Bernd Laun[1]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

Computer 53 **2931. Correction of Artifacts Caused by Transient Eddy Currents in Simultaneous Multi-Slice DMRI**

Rafael O'Halloran[1], Chen Yang[1], Junqian Xu[1]
[1]Radiology, Icahn School of Medicine at Mt Sinai, New York, NY, United States

Computer 54 **2932. Towards High Spatial Resolution Diffusion-Sensitized MR Imaging of the Eye and Orbit at 3.0 T and 7.0 T: Quantitative Assessment of the Anatomic Fidelity of EPI and RARE Variants**

Katharina Paul[1], Andreas Graessl[1], Jan Rieger[1, 2], Darius Lysiak[1, 2], Till Huelnhagen[1], Lukas Winter[1], Robin Heidemann[3], Tobias Lindner[4], Stefan Hadlich[5], Paul-Christian Krueger[5], Soenke Langner[5], Oliver Stachs[4, 6], Thoralf Niendorf[1, 7]
[1]Max-Delbrueck Centre for Molecular Medicine, Berlin Ultrahigh Field Facility (B.U.F.F.), Berlin, Germany; [2]MRI.TOOLS GmbH, Berlin, Germany; [3]Siemens Healthcare Sector, Erlangen, Germany; [4]University Medicine Rostock, Pre-clinical Imaging Research Group, Rostock, Germany; [5]University of Greifswald, Institute for Diagnotic Radiology and Neuroradiology, Greifswald, Germany; [6]University Medicine Rostock, Department of Ophthalmology, Rostock, Germany; [7]Experimental and Clinical Research Center, a joint cooperation between the Charité Medical Faculty and the Max-Delbrueck-Center, Berlin, Germany

Computer 55 **2933. Acquisition of Diffusion MRI Data with High Spatial and Angular Resolution on Postmortem Monkey Brains Using 3D Segmented EPI**

Longchuan Li[1, 2], Jaekeun Park[2], Yuguang Meng[3], Todd Preuss[4], Xiaodong Zhang[3], Xiaoping Hu[2]
[1]Department of Pediatrics, Marcus Autism Center, Children's Healthcare of Atlanta, Emory University, Atlanta, GA, United States; [2]Biomedical Imaging Technology Center, School of Medicine, Emory University, Atlanta, GA, United States; [3]Yerkes Imaging Center, Yerkes National Primate Research Center, Emory University, GA, United States; [4]Division of Neuropharmacology and Neurologic Diseases, Emory University, GA, United States

Computer 56 **2934. Motion Immune Diffusion Imaging Using Augmented MUSE (AMUSE) for High-Resolution Multi-Shot EPI**

Shayan Guhaniyogi[1], Mei-Lan Chu[1], Hing-Chiu Chang[1], Allen Song[1], Nan-Kuei Chen[1]
[1]Brain Imaging and Analysis Center, Duke University, Durham, NC, United States

Computer 57 **2935. Reducing Slab Boundary Artifacts in 3D Multi-Slab Diffusion Imaging by Jointly Estimating Slab Profile and Image**
ISMRM MERIT AWARD magna cum laude
Wenchuan Wu[1], Peter Koopmans[1], Robert Frost[1], Karla L. Miller[1]
[1]FMRIB Centre, Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, Oxfordshire, United Kingdom

Computer 58 **2936. Prospective Motion Correction of Segmented Diffusion Weighted EPI**
Michael Herbst[1, 2], Benjamin Zahneisen[1], Benjamin Knowles[2], Maxim Zaitsev[2], Thomas Ernst[1]
[1]University of Hawaii, Honolulu, HI, United States; [2]University Medical Center Freiburg, Freiburg, Germany

Computer 59 **2937. Intrinsic Diffusion Sensitivity of the BSSFP Signal: Optimizing the Flip Angle in the Presence of Strong Read Out Gradients**
Sébastien Bär[1], Matthias Weigel[2], Jürgen Hennig[1], Dominik Von Elverfeldt[1], Jochen Leupold[1]
[1]Department of Radiology, Medical Physics, University Medical Center, Freiburg, Freiburg, Germany; [2]Radiological Physics, University of Basel Hospital, Basel, Switzerland

Computer 60 **2938. High-Quality and Self-Navigated Diffusion-Weighted Imaging Enabled by a Novel Interleaved Block-Segmented (*iblocks*) EPI**
Hing-Chiu Chang[1], Mei-Lan Chu[1], Mark Sundman[1], Nan-Kuei Chen[1]
[1]Brain Imaging and Analysis Center, Duke University Medical Center, Durham, NC, United States

Computer 61 **2939. Low Frequency OGSE Improves Axon Diameter Imaging in Monkey Corpus Callosum Over Simple PGSE Method**
Ivana Drobnjak[1], John Lyon[1], Andrada Ianus[1], Daniel C. Alexander[1], Tim B. Dyrby[2]
[1]Centre for Medical Image Computing, Department of Computer Science, University College London, London, United Kingdom; [2]Copenhagen University Hospital Hvidovre, Danish Research Centre for Magnetic Resonance, Hvidovre, Denmark

Computer 62 **2940. High Angularly Resolved Diffusion Imaging with Short Scan Time and Low Distortion**
Tzu-Cheng Chao[1, 2], Jr-Yuan George Chiou[3], Stephan E. Maier[3], Bruno Madore[3]
[1]Department of Computer Science and Information Engineering, National Cheng-Kung University, Tainan, Taiwan; [2]Institute of Medical Informatics, National Cheng-Kung University, Tainan, Taiwan; [3]Department of Radiology, Brigham and Women's Hospital, Harvard Medical School, Boston, M.A., United States

Computer 63 **2941. Multi-Slice Localized Parallel Excitation for DWI with a Reduced FOV in the Spinal Cord**
Denis Kokorin[1], Jürgen Hennig[1], Maxim Zaitsev[1]
[1]Department of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany

Computer 64 **2942. Effects of Slab Boundary Artifacts on Diffusion Measures in 3D Multi-Slab Diffusion Imaging**
Wenchuan Wu[1], Peter Koopmans[1], Karla L. Miller[1]
[1]FMRIB Centre, Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, Oxfordshire, United Kingdom

Computer 65 **2943. An Optimized Protocol for Neurite Orientation Dispersion and Density Imaging (NODDI) in Preclinical Studies**
Andreia C. Silva[1], Eleni Demetriou[1], Magdalena Sokolska[1], Mohamed Tachrount[1], Niall Colgan[2], Bernard Siow[2], Mark F. Lythgoe[2], Xavier Golay[1], Hui Zhang[3]
[1]Department of Brain Repair and Rehabilitation, UCL Institute of Neurology, London, United Kingdom; [2]Centre for Advanced Biomedical Imaging, University College London, London, United Kingdom; [3]Department of Computer Science and Centre for Medical Image Computing, University College London, London, United Kingdom

Computer 66 **2944. 3D Multi-Band Diffusion MRI**
Iain P. Bruce[1], Hing-Chiu Chang[1], Nan-Kuei Chen[1], Allen W. Song[1]
[1]Brain Imaging and Analysis Center, Duke University, Durham, NC, United States

Computer 67 **2945. Comparison of Different Compressed Sensing Denoising Strategies for DSI Acquisition for Several Diffusion Mixing Times**
Miguel Molina-Romero[1, 2], Jonathan I. Sperl[2], Tim Sprenger[1, 2], Pedro A. Gómez[1, 2], Xin Liu[1, 2], Ek T. Tan[3], Christopher J. Hardy[3], Luca Marinelli[3], Bjoern Menze[1], Derek K. Jones[4], Marion I. Menzel[2]
[1]Technical University Munich, Garching, BY, Germany; [2]GE Global Research, Garching, BY, Germany; [3]GE Global Research, Niskayuna, NY, United States; [4]Cardiff University Brain Research Imaging Centre (CUBRIC), Cardiff University, Cardiff, Wales, United Kingdom

Computer 68 **2946. Analysis of Local Spatial Magnetization Frequency Sheds New Light on Diffusion MRI**
Hans Knutsson[1, 2], Magnus Herbertsson[3], Carl-Fredrik Westin, [14]
[1]Biomedical Engineering, Linköpings Universitet, Linköping, ÖG, Sweden; [2]CMIV, Linkoping University, Linköping, ÖG, Sweden; [3]Mathematics, Linköpings Universitet, Linköping, ÖG, Sweden; [4]Radiology, Brigham and Women's, Harvard Medical School, Boston, MA, United States

Computer 69 **2947. Comparison of Diffusion MRI Protocols for the Microstructural Characterization of the Spinal Cord on the Healthy Mouse and on a Murine Model of Amyotrophic Lateral Sclerosis**
Matteo Figini[1], Alessandro Scotti[1], Stefania Marcuzzo[2], Silvia Bonanno[2], Pia Bernasconi[2], Victoria Moreno Manzano[3], José Manuel Garcia Verdugo[4], Renato Mantegazza[2], Ileana Zucca[1], Maria Grazia Bruzzone[5]
[1]Scientific Direction, Fondazione IRCCS Istituto Neurologico "Carlo Besta", Milan, Italy; [2]Neurology IV - Neuromuscular Diseases and Neuroimmunology Unit, Fondazione IRCCS Istituto Neurologico "Carlo Besta", Milan, Italy; [3]Neuronal and Tissue Regeneration laboratory, Centro de Investigación Príncipe Felipe, Valencia, Spain; [4]Unidad de Neurobiología comparada, Universidad de Valencia, Valencia, Spain; [5]Neuroradiology Unit, Fondazione IRCCS Istituto Neurologico "Carlo Besta", Milan, Italy

Computer 70 **2948. Improvement of Heart IVIM Using 2nd Moment Nulling Pulse**
TOMOYA NAKAMURA[1], Isao Muro[2], Nao Kajihara[2], Shuhei Shibukawa[2], Tetsuo Ogino[3]
[1]Tokai University Hospital, Isehara, Kanagawa, Japan; [2]Tokai University Hospital, Kanagawa, Japan; [3]Philips Healthcare Asia Pacific, Tokyo, Japan

Computer 71 **2949. Constrained Optimization of Gradient Waveforms for Isotropic Diffusion Encoding**
Jens Sjölund[1, 2], Markus Nilsson[3], Daniel Topgaard[3], Carl-Fredrik Westin[1, 4], Hans Knutsson[1, 5]
[1]Linköping University, Linköping, Sweden; [2]Elekta Instrument AB, Stockholm, Sweden; [3]Lund University, Sweden; [4]Brigham and Women's Hospital and Harvard Medical School, MA, United States; [5]Center for Medical Image Science and Visualization (CMIV), Linköping, Sweden

Computer 72 **2950. Impact of Noise Bias with Parallel Imaging for Axon Diameter Estimation with Q-Space MRI**
T. Duval[1], T. Witzel[2], B. Keil[2], L. L. Wald[2], V. Smith[2], E. Klawiter[2], J. Cohen-Adad[1, 3]
[1]Institute of Biomedical Engineering, Polytechnique Montréal, Montréal, Québec, Canada; [2]A.A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA, United States; [3]Functional Neuroimaging Unit, CRIUGM, Université de Montréal, Montréal, Québec, Canada

Electronic Poster
Arterial Spin Labelling

Exhibition Hall Monday 10:45-11:45

Computer 73 **2951. Background Suppressed Arterial Spin Labeling with Simultaneous Multi-Slice Echo Planar Imaging**
Liyong Chen[1, 2], Alexander Beckett[1, 2], David A. Feinberg[1, 2]
[1]University of California, Berkeley, CA, United States; [2]Advanced MRI Technologies, LLC, Sebastopol, CA, United States

Computer 74 **2952. Measuring the Influence of Vessel Geometry on PCASL Labeling Efficiency**
Jan Petr[1], Georg Schramm[1], Jörg van den Hoff[1]
[1]Institute of Radiopharmaceutical Cancer Research, Helmholtz-zentrum Dresden Rossendorf, Dresden, Germany

Computer 75 **2953. A Novel Method to Estimate Labeling Efficiency for Pseudo-Continuous Arterial Spin Labeling Imaging**
Zhensen Chen[1, 2], Xingxing Zhang[2], Andrew G. Webb[2], Xihai Zhao[1], Matthias J.P. van Osch[2]
[1]Center for Biomedical Imaging Research, Department of Biomedical Engineering, School of Medicine, Tsinghua University, Beijing, China; [2]C.J. Gorter Center for High Field MRI, Department of Radiology, Leiden University Medical Center, Leiden, Zuid-holland, Netherlands

Computer 76 **2954.** **Correcting for Encoding Filed Imperfections in Arterial Spin Labeling Using Gradient Impulse Responses and Concurrent Field Monitoring**
Mustafa Cavusoglu[1], Lars Kasper[1], Johanna S. Vannesjo[2], Benjamin E. Dietrich[1], Simon Gross[1], Klaas P. Pruessmann[1]
[1]Biomedical Engineering, ETH Zurich, Zurich, Switzerland; [2]FMRIB centre, Oxford University, Oxford, United Kingdom

Computer 77 **2955.** **Reducing Readout Duration in Single-Shot, Stack-Of-Spirals Arterial Spin Labeling Using 2D In-Plane Accelerations**
Yulin V. Chang[1, 2], Marta Vidorreta[1], Ze Wang[3, 4], Maria A. Fernandez-Seara[5], John A. Detre[1]
[1]Neurology, University of Pennsylvania, Philadelphia, PA, United States; [2]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [3]Center for Cognition and Brain Disorders, Hangzhou Normal University, Hangzhou, Zhejiang, China; [4]Psychiatry, University of Pennsylvania, Philadelphia, PA, United States; [5]Functional Neuroimaging Laboratory, CIMA, University of Navarra, Navarra, Spain

Computer 78 **2956.** **A Simple Modification for Reducing Scanning Time and Motion Artefacts in Clinical Implementations of 3D-PCASL**
Stephen James Wastling[1], Gareth John Barker[1], Jonathan Ashmore[2], Fernando Zelaya[1]
[1]Department of Neuroimaging, King's College London, London, United Kingdom; [2]Department of Neuroradiology, King's College Hospital, London, United Kingdom

Computer 79 **2957.** **Strategies for Increasing Spatial Coverage of Balanced Steady-State Free Precession Arterial Spin Labeling**
Paul Kyu Han[1], Jong Chul Ye[1], Eung Yeop Kim[2], Seung Hong Choi[3], Sung-Hong Park[1]
[1]Department of Bio and Brain Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Korea; [2]Department of Radiology, Gachon University Gil Medical Center, Incheon, Korea; [3]Department of Radiology, Seoul National University College of Medicine, Seoul, Korea

Computer 80 **2958.** **Support Vector Machine Classification Analysis of Arterial Volume-Weighted Arterial Spin Tagging (AVAST) Images**
Yash S. Shah[1], Luis Hernandez-Garcia[1], Hesamoddin Jahanian[1], Scott J. Peltier[1]
[1]University of Michigan, Ann Arbor, MI, United States

Computer 81 **2959.** **Model-Independent Arterial Transit Time Mapping Using Pseudo-Continuous ASL**
Toralf Mildner[1], Kathrin Lorenz, [12], Harald E. Möller[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Saxony, Germany; [2]Faculty of Physics and Earth Sciences, University of Leipzig, Saxony, Germany

Computer 82 **2960.** **Arterial Transit Time Imaging with Vessel-Selective Arterial Spin Labeling**
Jianxun Qu[1], Bing Wu[1], Min Chen[2], Yingkui Zhang[1], Zhenyu Zhou[1]
[1]GE Healthcare China, Beijing, China; [2]Beijing Hospital, Beijing, China

Computer 83 **2961.** **Cardiac-Triggered PCASL: A Cost-Effective Scheme to Enhance the SNR of ASL**
ISMRM MERIT AWARD magna cum laude
Yang Li[1], Deng Mao[1], Hanzhang Lu[1]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States

Computer 84 **2962.** **Independent Determinants of Cerebral Blood Flow from Multiple Post Label Delay Arterial Spin-Labeling and Phase Contrast Angiography Help Differentiate the Influence of Small and Large Arteries**
Andrew D. Robertson[1], Bradley J. MacIntosh[1, 2]
[1]Heart & Stroke Foundation Canadian Partnership for Stroke Recovery, Sunnybrook Research Institute, University of Toronto, Toronto, ON, Canada; [2]Department of Medical Biophysics, University of Toronto, Toronto, ON, Canada

Computer 85 **2963.** **Feasibility of Quantification of Cerebral Blood Perfusion Using Multi-Phase Inter-Slice Perfusion Imaging**
Ki Hwan Kim[1], Seung Hong Choi[2], Sung-Hong Park[3]
[1]Department of Bio and Brain Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Korea; [2]Department of Radiology, Seoul National University College of Medicine, Korea; [3]Department of Bio and Brain Engineering, Korea Advanced Institute of Science and Technology, Korea

Computer 86 **2964. Cerebral Perfusion Measurements at 17.2 T Using PCASL: A Feasibility Study**

Luisa Ciobanu[1], Lydiane Hirschler[2, 3], Tomokazu Tsurugizawa[1], Denis Le Bihan[1], Clément Debacker[2, 3], Emmanuel L. Barbier, [34]
[1]Neurospin, CEA, Gif-sur-Yvette, France; [2]Bruker Biospin, Wissembourg, France; [3]University Grenoble Alpes, Grenoble, France; [4]U836, Inserm, Grenoble, France

Computer 87 **2965. The Comparison of ASL Features Between Young and Elderly Population: Clinically Feasible Parameter Setting for Long Labeled Pseudo-Continuous ASL to Reduce the Sensitivity of Delayed Arterial Transit Time**

Yasuhiro Fujiwara[1], Hirohiko Kimura[2], Tsuyoshi Matsuda[3], Masayuki Kanamoto[4], Tatsuro Tsuchida[2], Kazunobu Tsuji[2], Nobuyuki Kosaka[2], Toshiki Adachi[4]
[1]Department of Medical Imaging, Faculty of Life Sciences, Kumamoto University, Kumamoto, Japan; [2]Department of Radiology, University of Fukui, Fukui, Japan; [3]Global MR Applications and Workflow, GE Healthcare Japan, Tokyo, Japan; [4]Radiological Center, University of Fukui Hospital, Fukui, Japan

Computer 88 **2966. The Importance of Partial Volume Correction in ASL Based Studies of Cerebral Perfusion in Mild Cognitive Impairment: A Quantitative Comparison**

Virginia Mato Abad[1], Pablo García-Polo[2, 3], Juan Álvarez-Linera[4], Ana Frank[5], Fernando Zelaya[6], Juan Antonio Hernández-Tamames[1]
[1]LAIMBIO, Universidad Rey Juan Carlos, Móstoles, Madrid, Spain; [2]Martinos Center, MGH, M+Visión Advanced Fellowship, Charlestown, MA, United States; [3]Center for Biomedical Technology (CTB-UPM), Madrid, Spain; [4]Hospital Ruber Internacional, Madrid, Spain; [5]Hospital Universitario La Paz, Madrid, Spain; [6]Centre for Neuroimaging Sciences, Institute of Psychiatry, King's College London, London, United Kingdom

Computer 89 **2967. Modeling Flow Dispersion in Pseudocontinuous Arterial Spin Labeling and Its Application in Moyamoya Disease Patients**

Zungho Zun[1, 2], R. Marc Lebel[3], Ajit Shankaranarayanan[4], Greg Zaharchuk[1]
[1]Stanford University, Stanford, CA, United States; [2]Children's National Medical Center, Washington, DC, United States; [3]GE Healthcare, Calgary, AB, Canada; [4]GE Healthcare, Menlo Park, CA, United States

Computer 90 **2968. Effects of 24 Hour Sleep Deprivation on Cerebral Blood Flow Measured by ASL**

Henri Mutsaerts[1], Torbjørn Elvåshagen[2], Lars Westlye[3], Atle Bjørnerud[2], Inge Groote[3]
[1]Academic Medical Center, Amsterdam, Netherlands; [2]Oslo University Hospital, Norway; [3]University of Oslo, Norway

Computer 91 **2969. An Exercise-Recovery Protocol Depicts Muscle Perfusion and Capillary Recruitment Heterogeneity in Peripheral Arterial Disease**

Jason K. Mendes[1], Christopher J. Hanrahan[1], Jeff L. Zhang[1], Gwenael Layec[2], Corey Hart[3], Russell Richardson, [34], Sarang Joshi[5], Vivian S. Lee[4]
[1]Radiology, University of Utah, Salt Lake City, UT, United States; [2]Medicine, University of Utah, Salt Lake City, UT, United States; [3]Exercise and Sports Science, University of Utah, Salt Lake City, UT, United States; [4]Medicine, University of Utah, UT, United States; [5]Bioengineering, University of Utah, Salt Lake City, UT, United States

Computer 92 **2970. Altered Blood-Brain Barrier Function in Patients with Obstructive Sleep Apnea**

Jose A. Palomares[1], Danny JJ Wang[2, 3], Bumhee Park[1], Sudhakar Tummala[1], Mary A. Woo[4], Daniel W. Kang[5], Keith S. St Lawrence[6], Ronald M. Harper[7], Rajesh Kumar[1, 3]
[1]Anesthesiology, University of California at Los Angeles, Los Angeles, CA, United States; [2]Neurology, University of California at Los Angeles, Los Angeles, CA, United States; [3]Radiological Sciences, University of California at Los Angeles, Los Angeles, CA, United States; [4]School of Nursing, University of California at Los Angeles, Los Angeles, CA, United States; [5]Medicine, University of California at Los Angeles, Los Angeles, CA, United States; [6]Lawson Health Research Institute, London, Canada; [7]Neurobiology, University of California at Los Angeles, Los Angeles, CA, United States

Computer 93 **2971. Multi-Voxel Pattern Analysis Delineates Selective ASL-Collateral Supply in Patients with Intracranial Stenosis**

Andrea Federspiel[1], Simon Schwab[1], Mirjam R. Heldner[2], Urs Fischer[2], Jan Gralla[3], Roland Wiest[3]
[1]Psychiatric Neurophysiology, University Hospital of Psychiatry, Bern, Switzerland; [2]Inselspital, University of Bern, Department of Neurology and Stroke Center, Bern, Switzerland; [3]Inselspital, University of Bern, Institute of Diagnostic and Interventional Neuroradiology, Bern, Switzerland

Computer 94 **2972. 3D GRASE Pseudo-Continuous Arterial Spin Labeling (PCASL) of Preterm Human Brains**
Minhui Ouyang[1], Peiying Liu[1], Hanzhang Lu[1], Tina Jeon[1], Lina Chalak[2], Jonathan M. Chia[3], Andrea Wiethoff[1], Nancy K. Rollins[4], Hao Huang[1]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Department of Pediatrics, University of Texas Southwestern Medical Center, Dallas, TX, United States; [3]Philips Healthcare, Cleveland, OH, United States; [4]Radiology, Children's Medical Center, Dallas, TX, United States

Computer 95 **2973. ASAP: Automatic Software for ASL Processing**
Virginia Mato Abad[1], Pablo García-Polo[2, 3], Owen O'Daly[4], Juan Antonio Hernández-Tamames[1], Fernando Zelaya[4]
[1]LAIMBIO, Universidad Rey Juan Carlos, Móstoles, Madrid, Spain; [2]Martinos Center, MGH, M+Visión Advanced Fellowship, Charlestown, MA, United States; [3]Center for Biomedical Technology (CTB-UPM), Madrid, Spain; [4]Centre for Neuroimaging Sciences, Institute of Psychiatry, King's College London, London, United Kingdom

Computer 96 **2974. Detection of Brain Activation Using High-Resolution Arterial Spin Labeling Perfusion fMRI at 3T**
Iris Asllani[1], Ajna Borogovac[2], Dylan Bruening[2], Sophie Schmid[3], Wouter M. Teeuwisse[3], Matthias J.P. van Osch[3]
[1]RIT, Rochester, NY, United States; [2]RIT, NY, United States; [3]Leiden University Medical Center, Leiden, Netherlands

Electronic Poster
Diffusion & Tractography Analyses

Exhibition Hall Monday 11:45-12:45

Computer 1 **2975. Multiple Sclerosis Clinical Classification Based on DTI Fiber Analysis**
Claudio Stamile[1], Gabriel Kocevar[1], Françoise Durand-Dubief, [12], François Cotton[1, 3], Carole Frindel[1], Salem Hannoun[1], Dominique Sappey-Marinier[1, 4]
[1]CREATIS (CNRS UMR5220 & INSERM U1044), Université Lyon 1, INSA-Lyon, Villeurbanne, France; [2]Service de Neurologie A, Hôpital Neurologique, Hospices Civils de Lyon, Bron, France; [3]Service de Radiologie, Centre Hospitalier Lyon-Sud, Hospices Civils de Lyon, Pierre-Benite, France; [4]CERMEP - Imagerie du Vivant, Université de Lyon, Bron, France

Computer 2 **2976. Detection of Longitudinal DTI Changes in Multiple Sclerosis Patients Based on Sensitive WM Fiber Modeling**
Claudio Stamile[1], Gabriel Kocevar[1], François Cotton[1, 2], Françoise Durand-Dubief[1, 3], Salem Hannoun[1], Carole Frindel[1], David Rousseau[1], Dominique Sappey-Marinier[1, 4]
[1]CREATIS (CNRS UMR5220 & INSERM U1044), Université Lyon 1, INSA-Lyon, Villeurbanne, France; [2]Service de Radiologie, Centre Hospitalier Lyon-Sud, Hospices Civils de Lyon, Pierre-Benite, France; [3]Service de Neurologie A, Hôpital Neurologique, Hospices Civils de Lyon, Bron, France; [4]CERMEP - Imagerie du Vivant, Université de Lyon, Bron, France

Computer 3 **2977. Individualized Prediction of ADHD Based on Patterns of Altered Tract Integrity Over the Whole Brain: A Performance Test on Adult Females with ADHD Using Diffusion Spectrum Imaging**
Yu-Jen Chen[1], Yun-Chin Hsu[1], Yu-Chun Lo[1], Shur-Fen Susan Gau[2], Wen-Yih Isaac Tseng[1, 3]
[1]Center for Optoelectronic Medicine, National Taiwan University College of Medicine, Taipei, Taiwan; [2]Department of Psychiatry, National Taiwan University Hospital, Taipei, Taiwan; [3]Molecular Imaging Center, National Taiwan University , Taipei, Taiwan

Computer 4 **2978. Profilometry: Towards a More Specific Characterization of White Matter Pathways, with Application to Multiple Sclerosis.**
Michael Dayan[1], Elizabeth Monohan[2], Sneha Pandya[1], Amy Kuceyeski[1], Thanh Nguyen[1], Susan Gauthier[2], Ashish Raj[1]
[1]Radiology, Weill Cornell Medical College, New York, NY, United States; [2]Neurology, Weill Cornell Medical College, New York, NY, United States

Computer 5 **2979. A Machine Learning Approach to Identify Structural Connections Affected in Diffuse Axonal Injury**
J. Mitra[1], S. Ghose[1], K-K. Shen[1], K. Pannek[2], P. Bourgeat[1], J. Fripp[1], O. Salvado[1], J. L. Mathias[3], D. J. Taylor[4], S. Rose[1]
[1]Australian e-Health & Research Centre, CSIRO Digital Productivity Flagship, Herston, QLD, Australia; [2]Imperial College London, London, United Kingdom; [3]School of Psychology, University of Adelaide, Adelaide, SA, Australia; [4]Dept. of Radiology, The Royal Adelaide Hospital, Adelaide, SA, Australia

Computer 6 **2980. Quantitative Assessment of Diffusional Kurtosis Anisotropy**
G. Russell Glenn[1], Joseph A. Helpern[2], Ali Tabesh[3], Jens H. Jensen[3]

[1]Neurosciences & Center for Biomedical Imaging, Medical University of South Carolina, Charleston , SC, United States; [2]Radiology, Neurosciences, & Center for Biomedical Imaging, Medical Univesity of South Carolina, Charleston, SC, United States; [3]Radiology & Center for Biomedical Imaging, Medical Univesity of South Carolina, Charleston, SC, United States

Computer 7 **2981. Choices in Processing Steps for Diffusion MRI Analyses: Does It Really Matter?**
Szabolcs David[1], Chantal M. W. Tax[1], Max A. Viergever[1], Anneriet Heemskerk[1], Alexander Leemans[1]
[1]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands

Computer 8 **2982. Hybrid Parallel Tempering and Levenberg-Marquardt Method for Efficient and Stable Fitting of Noisy MRI Dataset**
Marco Palombo[1,2], Matthias Vandesquille[1,2], Julien Valette[1,2]
[1]CEA/DSV/I2BM/MIRCen, Fontenay-aux-Roses, France, France; [2]CEA-CNRS URA 2210, Fontenay-aux-Roses, France, France

Computer 9 **2983. Robustness of Phase Sensitive Reconstruction in Diffusion Spectrum Imaging**
Marion I. Menzel[1], Tim Sprenger[1,2], Ek T. Tan[3], Valdimir Golkov[1,2], Christopher J. Hardy[3], Luca Marinelli[3], Jonathan I. Sperl[1]
[1]Diagnostics, Imaging and Biomedical Technologies Europe, GE Global Research, Munich, Germany; [2]Technical University Munich, Munich, Germany; [3]GE Global Research, Niskayuna, NY, United States

Computer 10 **2984. An Efficient Motion Correction Method for Improved ADC Estimates in the Abdomen**
Hossein Ragheb[1], Neil A. Thacker[1], Jean-Marie Guyader[2], Stefan Klein[2], Alan Jackson[3]
[1]Centre for Imaging Sciences, Faculty of Medical and Human Sciences, University of Manchester, Manchester, United Kingdom; [2]Biomedical Imaging Group Rotterdam, Departments of Medical Informatics and Radiology, Erasmus MC, Rotterdam, Netherlands; [3]The Wolfson Molecular Imaging Centre, Faculty of Medical and Human Sciences, University of Manchester, Manchester, United Kingdom

Computer 11 **2985. GPU Imaging Analysis for Ultra-Fast Non-Gaussian Diffusion Mapping**
Marco Palombo[1,2], Dianwen Zhang[3], Chen Zhu[4], Julien Valette[1], Alessandro Gozzi[5], Angelo Bifone[5], Andrea Messina[6], Gianluca Lamanna[7], Silvia Capuani, [68]
[1]CEA/DSV/I2BM/MIRCen, Fontenay-aux-Roses, France, France; [2]IPCF-UOS Roma, Phys. Dpt., Sapienza University, Rome, Italy; [3]ITG, Beckman Institute, UIUC, Urbana, IL, United States; [4]College of Economics & Management, CAU, Beijing, China; [5]IIT, Center for Neuroscience and Cognitive Systems @ UniTn, Rovereto, Italy; [6]Physics Dpt., Sapienza University, Rome, Italy; [7]INFN, Pisa Section, Pisa, Italy; [8]IPCF-UOS Roma, Phys. Dept., Sapienza University, Rome, Italy

Computer 12 **2986. Comparison of Diffusion Kurtosis Modeling Algorithms: Accuracy and Application**
Daniel Olson[1], Volkan Arpinar[2], L Tugan Muftuler[2]
[1]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Neurosurgery, Medical College of Wisconsin, WI, United States

Computer 13 **2987. Are SHORE-Based Biomarkers Suitable Descriptors for Microstructure in DSI?**
Lorenza Brusini[1], Mauro Zucchelli[1], Alessandro Daducci[2], Cristina Granziera[3,4], Gloria Menegaz[1]
[1]Computer Science, University of Verona, Verona, Italy; [2]EPFL, Lausanne, Switzerland; [3]Siemens Healthcare IM BM PI & Department of Radiology, CHUV, Lausanne, Switzerland; [4]Department of Clinical Neurosciences, CHUV, Lausanne, Switzerland

Computer 14 **2988. Correcting for Perfusion and Isotropic Free Diffusion in Diffusion Weighted Imaging and DTI and CSD Analysis**
Martijn Froeling[1], Peter R. Luijten[1], Alexander Leemans[2]
[1]Radiology, UMC Utrecht, Utrecht, Netherlands; [2]Image Sciences Institute, UMC Utrecht, Utrecht, Netherlands

Computer 15 **2989. Parameters Estimation for White Matter Microstructure Models Using Variable Projection Method and Stochastic Global Search Algorithms**
Hamza Farooq[1], Junqian Xu[2], Essa Yacoub[3], Tryphon Georgiou[1], Christophe Lenglet[3]
[1]Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States; [2]Department of Radiology, Icahn School of Medicine , The Mount Sinai Hospital, NY, United States; [3]Center for Magnetic Resonance Research, Department of Radiology, University of Minnesota, Minneapolis, MN, United States

Computer 16 **2990. Estimation and Removal of Partial Volume Effects of Cerebrospinal Fluid in Intravoxel Incoherent Motion (IVIM) Imaging**
Hajime Tamura[1], Shunji Mugikura[2], Yoshiaki Komori[3], Kazuomi Yamanaka, Hideki Ota[2]
[1]Graduate School of Medicine, Tohoku University, Sendai, Japan; [2]Diagnostic Radiology, Tohoku University Hospital, Sendai, Japan; [3]Siemens Japan K.K., Tokyo, Japan

Computer 17 **2991. The Impact of a New Sampling Theorem for Non-Bandlimited Functions on the Sphere: HARDI at the Price of DTI?**
Samuel Deslauriers-Gauthier[1], Pina Marziliano[2], Michaël Paquette[1], Maxime Descoteaux[1]
[1]SCIL, Computer science department, Université de Sherbrooke, Montréal, Québec, Canada; [2]School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore

Computer 18 **2992. Altered Structural Connectivity Between Patients with Schizophrenia and Healthy Adults Measured by Combined Direct and Indirect Connection Strengths**
Sung-Chieh Liu[1], Yu-Jen Chen[1], Yun-Chin Hsu[1], Tzung-Jeng Hwang[2], Hai-Gwo Hwu[2], Wen-Yih Isaac Tseng[1, 3]
[1]Center for Optoelectronic Medicine, National Taiwan University College of Medicine, Taipei, Taiwan; [2]Department of Psychiatry, National Taiwan University Hospital, Taipei, Taiwan; [3]Molecular Imaging Center, National Taiwan University, Taipei, Taiwan

Computer 19 **2993. Ventral Intermediate Nucleus (VIM) Localization with Probablistic Diffusion Tractography**
Chia-Chu Chou[1, 2], Prashant Raghavan[1], Dheeraj Gandhi[1], Rao P. Gullapalli[1], Jiachen Zhuo[1]
[1]Diagnostic Radiology and Nuclear Medicine, University of Maryland School of Medicine, Baltimore, MD, United States; [2]Electrical and Computer Engineering, University of Maryland, College Park, MD, United States

Computer 20 **2994. Probabilistic Fiber Tracking at UHF: Effects of Distortion Correction and Reverse Phase Polarity Combination.**
Oleg P. Posnansky[1], Myung-Ho In[1], Oliver Speck[1]
[1]Institute of Experimental Physics, Department of Biomedical Magnetic Resonance, Otto-von-Guericke University , Magdeburg, Germany

Computer 21 **2995. Mesh-Based FMRI-Driven-Tractography for Automated Analysis of Non-Parcellateable Brains with Pathology**
Lee Bremner Reid[1, 2], Kerstin Pannek[3], Roslyn Boyd[2], Stephen Rose[1]
[1]e-Health Research Centre, CSIRO, Brisbane, Queensland, Australia; [2]Queensland Cerebral Palsy and Rehabilitation Research Centre, University of Queensland, Queensland, Australia; [3]Department of Computing, Imperial College London, London, United Kingdom

Computer 22 **2996. Optimization of White Matter Fiber Tractography with Diffusional Kurtosis Imaging**
G. Russell Glenn[1], Joseph A. Helpern[2], Ali Tabesh[3], Jens H. Jensen[3]
[1]Neurosciences & Center for Biomedical Imaging, Medical University of South Carolina, Charleston , SC, United States; [2]Radiology, Neurosciences, & Center for Biomedical Imaging, Medical Univesity of South Carolina, Charleston, SC, United States; [3]Radiology & Center for Biomedical Imaging, Medical Univesity of South Carolina, Charleston, SC, United States

Computer 23 **2997. Improving Cortical Tractography Using Double Inversion Recovery**
Hamied A. Haroon[1], Claude J. Bajada[2], Hojjatollah Azadbakht[1], Sha Zhao[1]
[1]Centre for Imaging Sciences, The University of Manchester, Manchester, England, United Kingdom; [2]School of Psychological Sciences, The University of Manchester, Manchester, England, United Kingdom

Computer 24 **2998. Mapping Residuals Along Tracts: An Effective Quality Control Approach for Tract Specific Measurements**
Elisa Scaccianoce[1, 2], Maria Marcella Laganà[1], Francesca Baglio[1], Giuseppe Baselli[2], Flavio Dell'Acqua[3]
[1]Don Carlo Gnocchi Foundation ONLUS, IRCCS S. Maria Nascente, Milano, Italy; [2]Department of Electronics, Information and Bioengineering, Politecnico di Milano, Milano, Italy; [3]NATBRAINLAB, Department of Neuroimaging, Institute of Psychiatry, Psychology and Neuroscience, King’s College, London, United Kingdom

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Diffussion Applications

Exhibition Hall Monday 11:45-12:45

Computer 25 **2999. Can the Distribution of Low B-Value and the NEX Influence the Pseudodiffusion Parameter Derived from IVIM in Brain?**

Yuchuan Hu[1], LinFeng Yan[1], Lang Wu[2], DanDan Zheng[3], TianYong Xu[4], Wen Wang[5], GuangBin Cui[1]

[1]Department of Radiology, Tangdu Hospital, Fourth Military Medical University, Xi¡¯an, Shaanxi, China; [2]Center for Clinical and Translational Science, Mayo Clinic, MN, United States; [3]MR Research China, GE Healthcare China, Beijing, China; [4]MR Research China,, GE Healthcare China, Beijing, China; [5]Fourth Military Medical University, Shaanxi, China

Computer 26 **3000. Longitudinal Study of Cuprizone-Induced White Matter Degeneration and Recovery Using Diffusion White Matter Tract Integrity Metrics (WMTI).**

Ileana O. Jelescu[1, 2], Magdalena Zurek[1], Kerryanne Winters[1, 2], Jelle Veraart[1, 2], Anjali Rajaratnam[1, 2], Timothy M. Shepherd[1, 2], Dmitry S. Novikov[1, 2], Sungheon G. Kim[1, 2], Els Fieremans[1, 2]

[1]Center for Biomedical Imaging, Dept. of Radiology, NYU Langone Medical Center, New York, United States; [2]Center for Advanced Imaging Innovation and Research, Dept. of Radiology, NYU Langone Medical Center, New York, United States

Computer 27 **3001. Improved Tract Resolvability with High-Resolution Diffusion-Weighted Steady State Free Precession Data of Post-Mortem Human Brain at 7T**

Sean Foxley[1], Saad Jbabdi[1], Stuart Clare[1], Moises Fernandez[1], Connor Scott[2], Olaf Ansorge[2], Karla Miller[1]

[1]FMRIB Centre, University of Oxford, Oxford, OXON, United Kingdom; [2]Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, OXON, United Kingdom

Computer 28 **3002. Neuroimaging Bridge to CLARITY**

Kristi Clark[1], Farshid Sepehrband[2, 3], Alexander Talishinsky[4], Samuel Barnes[5], Russell Jacobs[5], Shagun Mehta[4], Celia Williams[4], Carol Miller[4]

[1]Institute for Neuroimaging and Informatics, University of Southern California, Los Angeles, CA, United States; [2]Centre for Advanced Imaging, The University of Queensland, Brisbane, Australia; [3]Queensland Brain Institute, The University of Queensland, Brisbane, Australia; [4]Department of Pathology, University of Southern California, Los Angeles, CA, United States; [5]Beckman Institute, California Institute of Technology, Pasadena, CA, United States

Computer 29 **3003. DTI and Molecular Expression Based Studies Detects Radiation Induced Early Acute Neuroinflammatory Changes in Hippocampus**

Poonam Rana[1], Sushanta Kumar Mishra[1], Mamta Aryabhushan Gupta[1], Richa Trivedi[1], B S Hemanth Kumar[1], Subash Khushu[1]

[1]NMR Research Centre, Institute of Nuclear Medicine and Allied Sciences, DRDO, Delhi, India

Computer 30 **3004. Diffusion Tensor Imaging of Forearm Nerves for Early Diagnosis of Multifocal Motor Neuropathy**

Wieke Haakma[1, 2], Bas Jongbloed[3], Martijn Froeling[1], Clemens Bos[1], Stephan H. Goedee[3], Michael Pedersen[4], Ludo van der Pol[3], Alexander Leemans[5], Jeroen Hendrikse[1]

[1]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]Department of Forensic Medicine & Comparative Medicine Lab, Aarhus University, Aarhus, Central Denmark, Denmark; [3]Department of Neurology, University Medical Center Utrecht, Utrecht, Netherlands; [4]Department of Clinical Medicine - Comparative Medicine Lab, Aarhus University, Aarhus, Central Denmark, Denmark; [5]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands

Computer 31 **3005. A Method to Improve the Quality of Diffusion MRI with Rapid Histological Correlation in a Murine Model**

Yu-Chun Lin[1], Chun-Chieh Wang[2], Gigin Lin[1], Jiun-Jie Wang[3]

[1]Department of Diagnostic Radiology, Chang Gung Memorial Hospital, Taoyuan, Taiwan, Taiwan; [2]Department of Radiation Oncology, Chang Gung Memorial Hospital, Linkou, Taiwan; [3]Department of Medical Imaging and Radiological Sciences, Chang Gung University, Yaoyuan, Taiwan

Computer 32 **3006. Alterations in White Matter Tracts in Alcohol Dependence: A Tract-Based Spatial Statistics (TBSS) Based DTI Study**

Mukesh Kumar[1], Shilpi Modi[1], Pawan Kumar[1], Subash Khushu[1]

[1]NMR Research Centre, Institute of Nuclear Medicine and Allied Sciences (INMAS), New Delhi, Delhi, India

Computer 33 **3007.** **Characterization of Structural Connectivity of the Default Mode Network in Dogs Using Diffusion Tensor Imaging**
Madhura Baxi[1, 2], Jennifer Robinson[1, 3], Paul Waggoner[4], Ronald Beyers[1], Edward Morrison[5], Nouha Salibi[1, 6], Thomas S. Denney Jr. [1, 3], Vitaly Vodyanoy[5], Gopikrishna Deshpande[1, 3]
[1]AU MRI Research Center, Dept. of Electrical & Computer Engineering, Auburn University, Auburn, Al, United States; [2]Psychiatry Neuroimaging Laboratory, Department of Psychiatry, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, United States; [3]Dept. of Psychology, Auburn University, Auburn, Al, United States; [4]Canine Detection Research Institute, Auburn University, Auburn, Al, United States; [5]Dept. of Anatomy, Physiology & Pharmacology, Auburn University, Auburn, Al, United States; [6]MR R&D, Siemens Healthcare, Malvern, PA, United States

Computer 34 **3008.** **Heterogenous PLP1 Mutations Express Differing Pathology of the Corpus Callosum in Pelizaeus-Merzbacher Disease.**
Malek I. Makki[1], Jeremy J. Laukka[2]
[1]MRI Research, University Children Hospital of Zurich, Zurich, Switzerland; [2]Neuroscience and Neurology, University of Toledo, Toledo, OH, United States

Computer 35 **3009.** **Advanced Diffusion Methods Proved More Robust Assessments of Microstructure Than Standard DTI in Complex Human Brain Tissue**
Joong Kim[1], David L. Brody[1]
[1]Washington University School of Medicine, St. Louis, MO, United States

Computer 36 **3010.** **Quality Assessment and Ranking System for Quantitative Breast Diffusion-Weighted Imaging of the Breast in the ACRIN 6698 Trial**
Sheye Aliu[1], David Newitt[1], Wen Li[1], Jessica Gibbs[1], Lisa Cimino[2], Eunhee Kim[2], Savannah Partridge[3], Patrick Bolan[4], Thomas Chenevert[5], Mark Rosen[6], Nola Hylton[1]
[1]Radiology & Biomedical Imaging, University of California at San Francisco, San Francisco, CA, United States; [2]ECOG-ACRIN Cancer Research Group, PA, United States; [3]Radiology, University of Washington School of Medicine, Seattle Cancer Care Alliance, WA, United States; [4]Center for Magnetic Resonance Research, University of Minnesota, MN, United States; [5]Radiology, University of Michigan Health System, MI, United States; [6]Radiology, University of Pennsylvania, PA, United States

Computer 37 **3011.** **Robust Estimation of IVIM Metrics in Human Liver Using Rician Noise Filter**
Zhongping Zhang[1], Bing Wu[1], Jin Wang[2], Zhenyu Zhou[1]
[1]GE Healthcare China, Beijing, China; [2]Radiology, The Third Affiliated Hospital of Sun Yat-sen University, Guangzhou, Guangdong, China

Computer 38 **3012.** **Whole Body Diffusion-Weighted MRI: Normal Lymph Node Distribution, Volume and Apparent Diffusion Coefficient (ADC) in Healthy Volunteers**
Raphael Shih Zhu Yiin[1], Giuliano Scattoli[1], Dow-Mu Koh[1], David J Collins[2], Martin O Leach[2], Matthew D. Blackledge[2]
[1]Department of Radiology, The Royal Marsden Hospital, Sutton, Surrey, United Kingdom; [2]CR-UK and EPSRC Cancer Imaging Centre, Sutton, Surrey, United Kingdom

Computer 39 **3013.** ***In-Vivo* Detection of Diffusive Water Transport in Human Eye Using High-Resolution Diffusion Weight Imaging**
Jiancheng Zhuang[1], Bosco S. Tjan[1]
[1]University of Southern California, Los Angeles, CA, United States

Computer 40 **3014.** **Diffusion Tensor Imaging of the Human Aortic Wall: An *Ex-Vivo* Study**
Nicola Martini[1], Simona Celi, [12], Daniele Della Latta[1], Daniele De Marchi[1], Giuseppe Valvano, [13], Angelo Monteleone[1], Vincenzo Positano[4], Maria Filomena Santarelli, [45], Sergio Berti[1], Marco Solinas[1], Luigi Landini, [13], Dante Chiappino[1]
[1]Fondazione G.Monasterio CNR-Regione Toscana, Massa, MS, Italy; [2]Scuola Superiore Sant'Anna, Pisa, PI, Italy; [3]Department of Information Engineering, University of Pisa, Pisa, PI, Italy; [4]Fondazione G.Monasterio CNR-Regione Toscana, Pisa, PI, Italy; [5]Institute of Clinical Physiology, CNR, Pisa, PI, Italy

Computer 41 **3015.** **Diffusion Tensor Imaging of the Lumbar and Sacral Plexus in Post Mortem Subjects**
Wieke Haakma[1, 2], Michael Pedersen[3], Martijn Froeling[2], Lars Uhrenholt[4], Jeroen Hendrikse[2], Alexander Leemans[5], Lene Warner Thorup Boel[4]

[1]Department of Forensic Medicine & Comparative Medicine Lab, Aarhus University, Aarhus, Central Denmark, Denmark; [2]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [3]Department of Comparative Medicine Lab - Clinical Institute, Aarhus University, Central Denmark, Denmark; [4]Department of Forensic Medicine, Aarhus University, Aarhus, Central Denmark, Denmark; [5]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands

Computer 42 **3016. Assessment of Aquaporins Function in Stages of Clinical Liver Fibrosis Using Multi-B DWI**

Qiuju Li[1], Qiyong Guo[1], Zhoushe Zhao[2], Jiahui Li[1], Bing Yu[1], Yu Shi[1]
[1]Radiology, shengjing hospital, Shenyang, Liaoning, China; [2]General Electronic Company Healthcare (China), General Electronic Company Healthcare (China), Beijing, China

Computer 43 **3017. Surface to Volume Ratio Mapping of Mouse GBM Using OGSE**

ISMRM MERIT AWARD magna cum laude

Olivier Reynaud[1, 2], Kerryanne V. Winters[1, 2], Dmitry S. Novikov[1, 2], Sungheon Gene Kim[1, 2]
[1]Center for Advanced Imaging Innovation and Research (CAI2R), Department of Radiology, New York University School of Medicine, New York, NY, United States; [2]Bernard and Irene Schwartz Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States

Computer 44 **3018. Impact of Co-Registration on the Histogram Analysis of ADC Maps in MRI/MRS Brain Tumor Diagnostics**

Nuno Pedrosa de Barros[1, 2], Urspeter Knecht[2], Roland Wiest[2], Johannes Slotboom[2]
[1]University of Bern, Bern, Switzerland; [2]Institute for Diagnostic and Interventional Neuroradiology, Bern, Switzerland

Computer 45 **3019. A Simplified Intravoxel Incoherent Motion Model for Diffusion Weighted Imaging in Prostate Cancer Evaluation: Comparison with Monoexponential and Biexponential Models**

Qing Yuan[1], Daniel N. Costa[1, 2], Julien Sénégas[3], Yin Xi[1], Andrea J. Wiethoff[2, 4], Robert E. Lenkinski[1, 2], Ivan Pedrosa[1, 2]
[1]Radiology, UT Southwestern Medical Center, Dallas, TX, United States; [2]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States; [3]Philips Research Laboratories, Hamburg, Germany; [4]Philips Research North America, Briarcliff Manor, NY, United States

Computer 46 **3020. Value of DTI and DTT Map to Differentiate Prostate Cancer in Central Gland from Benign Prostate Hyperplasia**

Tao GONG[1], bin wang[2], guangbin WANG[3], shuhui YUAN[4]
[1]Shandong Medical Imaging Research Institute, Shandong University, Shandong, Jinan, China; [2]binzhou medical university, Shandong, yantai, China; [3]Shandong Medical Imaging Research Institute, Shandong University, jinan, China; [4]binzhou medical university, yantai, China

Computer 47 **3021. Diffusion Weighted Imaging Using Intravoxel Incoherent Motion Model with T2 Relaxivity Correction for Therapeutic Efficacy in VX2 Liver Tumor in Rabbits**

Jeong Hee Yoon[1], Jeong Min Lee[1], Mun Young Paek[2], Sangwoo Lee[3], Joon Koo Han[1]
[1]Radiology, Seoul National University Hospital, Seoul, Korea; [2]Siemens Healthcare Korea, Seoul, Korea; [3]Samsung electronics, Seoul, Korea

Computer 48 **3022. Intravoxel Incoherent Motion MR Imaging: Diffusion and Perfusion Characteristics in Early Assessment of Chemotherapy Response in Nasopharyngeal Carcinoma**

Zhuangzhen He[1], Yunbin Chen, Youping Xiao, Minfeng Li, Weibo Chen[2], He Wang[3]
[1] Fujian Province Cancer Hospital, Fuzhou, Fujian, China; [2]Philips Healthcare, Shanghai, China; [3]Philips Research China, Shanghai, China

Electronic Poster
Diffusion: Modelling of Microstructure

Exhibition Hall Monday 11:45-12:45

Computer 49 **3023. Characterizing the Diffusion Properties of Blood**

Carsten Funck[1], Frederik Bernd Laun[1], Andreas Wetscherek[1]
[1]Medical Physics In Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

Computer 50 **3024. Monitoring the Progressive Changes in Kidney Diffusion and Perfusion in Contrast-Induced Nephropathy Using IVIM MRI**
Shuixing Zhang[1], Wenbo Chen[1], Long Liang[1], Kannie W.Y. Chan[2], Yuguo Li[2], Bin Zhang[1], Guanshu Liu[2], Changhong Liang[1]
[1]Radiology, Guangdong Academy of Medical Sciences/Guangdong General Hospital, Guangzhou, Guangdong, China; [2]Russell H. Morgan Department of Radiology and Radiological Sciences, Division of MR Research, The Johns Hopkins University School of Medicine, Baltimore, MD, United States

Computer 51 **3025. Time Dependent Diffusion in Prostate**
Gregory Lemberskiy[1, 2], Andrew Rosenkrantz[1], Henry Rusinek[1], Els Fieremans[1], Dmitry S. Novikov[1]
[1]Bernard and Irene Schwartz Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States; [2]Sackler Institute of Graduate Biomedical Sciences, New York University School of Medicine, New York, NY, United States

Computer 52 **3026. Diffusion Microstructure Modelling Using a Modular and Extensible GPU Accelerated Toolkit**
Robbert Harms[1], Silvia de Santis[1, 2], Matteo Bastiani[1], Rainer Goebel[1], Alard Roebroeck[1]
[1]Maastricht University, Maastricht, Limburg, Netherlands; [2]CUBRIC Cardiff University, Cardiff, United Kingdom

Computer 53 **3027. Using Oscillating Gradient Spin-Echo Sequences to Infer Micron-Sized Bead and Pore Radii**
Sheryl L. Herrera[1], Morgan E. Mercredi[1], Trevor J. Vincent[2, 3], Richard Buist[4], Melanie Martin[2, 5]
[1]Physics & Astronomy, University of Mantioba, Winnipeg, Manitoba, Canada; [2]Physics, University of Winnipeg, Winnipeg, Manitoba, Canada; [3]Physics, University of Toronto, Toronto, Ontario, Canada; [4]Radiology, University of Mantioba, Winnipeg, Manitoba, Canada; [5]Physics & Astronomy, Radiology, University of Mantioba, Winnipeg, Manitoba, Canada

Computer 54 **3028. How to Get More Out of a Clinically Feasible 64 Gradient DMRI Acquisition: Multi-Shell Versus Single-Shell**
Rutger Fick[1], Mauro Zucchelli[2], Gabriel Girard, [13], Gloria Menegaz[2], Maxime Descoteaux[3], Rachid Deriche[1]
[1]Team Athena - INRIA, Sophia Antipolis, Alpes Maritimes, France; [2]University of Verona, Verona, Italy; [3]Sherbrooke Connectivity Imaging Lab (SCIL), Computer Science Department, Quebec, Canada

Computer 55 **3029. Estimation of Pore Size Distributions with Diffusion MRI: Feasibility for Clinical Scanners**
Gaetan Duchene[1], Frank Peeters[1], Thierry Duprez[1]
[1]Medical Imaging, Université Catholique de Louvain, Brussels, Belgium

Computer 56 **3030. Potential Effect of Varying Background B_0 Gradients on Diffusion Measurements: An *in Silico* Study**
Marco Palombo[1, 2], Chloé Najac[1, 2], Julien Valette[1, 2]
[1]CEA/DSV/I2BM/MIRCen, Fontenay-aux-Roses, France, France; [2]CEA-CNRS URA 2210, Fontenay-aux-Roses, France

Computer 57 **3031. Simulation Study Investigating the Role of Vessel Topology in Differentiating Normal and Tumor Vessels Using Transverse Relaxation Times**
Mohammed Salman Shazeeb[1], Bashar Issa[1]
[1]Department of Physics, UAE University, Al-Ain, Abu Dhabi, United Arab Emirates

Computer 58 **3032. Effect of Diffusion and Vessel Topology on Relaxation Mechanisms Using a Cylinder Fork Model**
Mohammed Salman Shazeeb[1], Bashar Issa[1]
[1]Department of Physics, UAE University, Al-Ain, Abu Dhabi, United Arab Emirates

Computer 59 **3033. Time-Dependent Influence of Cell Membrane Permeability on MR Diffusion**
Hua Li[1], Xiaoyu Jiang[1], Jingping Xie[1], J. Oliver Mclntyre[1], John C. Gore[1], Junzhong Xu[1]
[1]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States

Computer 60 **3034. New Mathematical Model for the Diffusion Time Dependent ADC**
Simona Schiavi[1], Houssem Haddar[1], Jing-Rebecca Li[1]
[1]DeFI, INRIA, École Polytechnique, Palaiseau, France

Computer 61 **3035.** **Model-Based Estimation of Microstructure Parameters from Diffusion MRI Data in a Substrate with Microscopic Anisotropy and a Distribution of Pore Sizes**
Andrada Ianus[1], Ivana Drobnjak[1], Daniel C. Alexander[1]
[1]Centre for Medical Image Computing, Department of Computer Science, UCL, London, United Kingdom

Computer 62 **3036.** **Simulating the DPFG and QMAS in a Model of Acute Axonal Injury**
Matthew Budde[1], Nathan Skinner[2]
[1]Neurosurgery, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States

Computer 63 **3037.** **Moving Away from Single-Shell?: A Study on Angular Accuracy of Constrained Spherical Deconvolution.**
Michael Paquette[1], Chantal M.W. Tax[2], Alexander Leemans[2], Maxime Descoteaux[1]
[1]Sherbrooke Connectivity Imaging Lab (SCIL), Université de Sherbrooke, Sherbrooke, Quebec, Canada; [2]University Medical Center Utrecht, Image Sciences Institute, Utrecht, Netherlands

Computer 64 **3038.** **An Osage Orange as a Diffusion Imaging Phantom for the Evaluation of Slice-Accelerated Diffusion Imaging Sequence**
Kwan-Jin Jung[1]
[1]Radiology, University of Louisville, Louisville, KY, United States

Computer 65 **3039.** **Effect of Demyelination on Diffusion Tensor Indices: A Monte Carlo Simulation Study**
Maximilian Pietsch[1], J-Donald Tournier[1]
[1]Centre for the Developing Brain, King's College London, London, United Kingdom

Computer 66 **3040.** **Human Brain Tissue Microstructure Characterization Using 3D-SHORE on the HCP Data**
Mauro Zucchelli[1], Maxime Descoteaux[2], Gloria Menegaz[1]
[1]Computer Science, University Of Verona, Verona, Italy; [2]Sherbrooke Connectivity Imaging Lab (SCIL), Université de Sherbrooke, Sherbrooke, Quebec, Canada

Computer 67 **3041.** **Micro-MR Correlates of Cellular-Level Alterations in Epileptogenesis**
Katharina Göbel[1], Johannes Gerlach[2], Robert Kamberger[3], Jochen Leupold[1], Dominik von Elverfeldt[1], Carola Haas[2], Jan G. Korvink[3], Jürgen Hennig[1], Pierre LeVan[1]
[1]Medical Physics, Dept. of Radiology, University Medical Center Freiburg, Freiburg, Germany; [2]Experimental Epilepsy Research, University Medical Center Freiburg, Freiburg, Germany; [3]Dept. of Microsystems Engineering (IMTEK), Technical Faculty, University of Freiburg, Freiburg, Germany

Computer 68 **3042.** **Microscopic Anisotropy in the Fixed Spinal Cord from DPFG and QMAS Diffusion Weighted Imaging Compared to DTI**
Nathan P. Skinner[1, 2], Matthew D. Budde[1, 3]
[1]Biophysics Graduate Program, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Medical Scientist Training Program, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Department of Neurosurgery, Medical College of Wisconsin, Milwaukee, WI, United States

Computer 69 **3043.** **Estimation of Neurite Density from an Isotropic Diffusion Model**
Brian Hansen[1], Torben E. Lund[1], Ryan Sangill[1], Sune N. Jespersen[1, 2]
[1]Center for Functionally Integrative Neuroscience, Aarhus University, Aarhus, Denmark; [2]Department of Physics and Astronomy, Aarhus University, Aarhus, Denmark

Computer 70 **3044.** **Estimation of Intra-Axonal Fraction in Spinal Cord White Matter by Using Monte Carlo Simulation of Water Diffusion and High B-Value Diffusion Sensitized MRI**
Nabraj Sapkota[1, 2], John Rose[3], Scott Miller[4], Beth Bowman[4], Lubdha Shah[4], Erica Bisson[5], Sook Yoon[1, 6], Eun-Kee Jeong[1, 7]
[1]Utah Center for Advanced Imaging Research, University of Utah, SLC, UT, United States; [2]Department of Physics, University of Utah, SLC, UT, United States; [3]Department of Neurology, University of Utah, SLC, UT, United States; [4]Department of Radiology, University of Utah, SLC, UT, United States; [5]Department of Neurosurgery, University of Utah, SLC, UT, United States; [6]Department

of Multimedia Engineering, Mokpo National Engineering, Jeonnam, Korea; [7]Department of Radiology, Korea University, Seoul, Korea

Computer 71 **3045. Diffusion MRI Detects Early Axon Loss Despite Confounding Inflammation in Optic Neuritis**

Carlos J. Perez-Torres[1], Tsen-Hsuan Lin[1], Chia-Wen Chiang[1], Peng Sun[1], Yong Wang[1, 2], Anne H. Cross, [23], Sheng-Kwei Song[1, 2]

[1]Radiology, Washington University, Saint Louis, MO, United States; [2]Hope Center for Neurological Disorders, Washington University, Saint Louis, MO, United States; [3]Neurology, Washington University, Saint Louis, MO, United States

Computer 72 **3046. Resolving Diffusion Compartments Using Single-Shell Data Via Estimation with Enhanced Sparsity**

Pew-Thian Yap[1], Yong Zhang[2], Dinggang Shen[1]

[1]Department of Radiology, University of North Carolina, Chapel Hill, NC, United States; [2]Department of Psychiatry & Behavioral Sciences, Stanford University, CA, United States

Electronic Poster
Perfusion & Permeability - Contrast Agent Methods

Exhibition Hall Monday 11:45-12:45

Computer 73 **3047. Feasibility of Test-Bolus Dynamic Contrast-Enhanced MRI Using CAIPIRINHA-VIBE for Evaluation of Pancreas Malignancy.**

Jimi Huh[1], Kyung Won Kim[1], Jisuk Park[2], Jae Ho Byun[1], In Seong Kim[3], Berthold Kiefer[4], Moon-Gyu Lee

[1]radiology, Seoul Asan Medical Center, Seoul, Korea; [2]radiology, Seoul Asan Medical Center, SEOUL, Korea; [3]Siemens Healthcare, Seoul, Korea; [4]Siemens Healthcare, Erlangen, Germany

Computer 74 **3048. Survival Rate Prediction in Patients with Glioblastoma Multiforme, Using Dynamic Contrast Enhanced MRI and Nested Model Selection Technique**

ISMRM MERIT AWARD magna cum laude

Hamed Moradi[1], Azimeh Noorizadeh Dehkordi[2, 3], Siamak P. Nejad-Davarani[4], Reza Faghihi[1], Brent Griffith[5], Ali S. Arbab[6], Tom Mikkelsen[7], Hamid Soltanian-Zadeh[5], Lisa Scarpace[7], Hassan Bagher-Ebadian[5, 8]

[1]Mechanical Engineering, Shiraz University, Shiraz, Fars, Iran; [2]Nuclear Engineering, Shahid Beheshti University, Tehran, Iran; [3]Nuclear Engineering and Science, Azad University of Najafabad, Najafabad, Isfahan, Iran; [4]Neurology, Henry Ford Hospital, Detroit, MI, United States; [5]Radiology and Research Administration, Henry Ford Hospital, Detroit, MI, United States; [6]GRU Cancer Center, Georgia Regents University, Atlanta, GA, United States; [7]Neurological Surgery, Henry Ford Hospital, Detroit, MI, United States; [8]Physics, Oakland University, Rochester, MI, United States

Computer 75 **3049. Assessment and Prediction of Vestibular Schwannoma Response to Anti-Angiogenic Therapy in Neurofibromatosis Type 2 Patient Using Low Dose High Temporal Resolution DCE-MRI**

Ka-Loh Li[1], Alan Jackson[1], Xiaoping Zhu[1]

[1]WMIC, University of Manchester, Manchester, Great Manchester, United Kingdom

Computer 76 **3050. High-Resolution Whole-Brain DCE MRI of Brain Tumor Using Constrained Reconstruction: Prospective Clinical Evaluation**

Yi Guo[1], R. Marc Lebel[2], Yinghua Zhu[1], Mark S. Shiroishi[3], Meng Law[3], Krishna S. Nayak[1]

[1]Department of Electrical Engineering, University of Southern California, Los Angeles, CA, United States; [2]GE Healthcare, Calgary, Alberta, Canada; [3]Department of Radiology, University of Southern California, Los Angeles, CA, United States

Computer 77 **3051. Prospective Glioma Grading Using Single Dose Dynamic Contrast Enhanced MRI Perfusion**

Aprajita Mehta[1], Krishan K. Jain[1], Prativa Sahoo[2], Bhaswati Roy[1], Ritu Tyagi[1], Ram K S Rathore[3], Rana Patir[4], Sandeep Vaishya[4], Neeraj Prakash[5], Nandini Vasudev[5], Rakesh K. Gupta[1]

[1]Radiology, Fortis Memorial Research Institute, Gurgaon, India; [2]Philips Healthcare, Philips India Ltd, Gurgaon, India; [3]Dept of Mathematics, Indian Institute of Technology, Kanpur, India; [4]Neurosurgery, Fortis Memorial Research Institute, Gurgaon, India; [5]Pathology, Fortis Memorial Research Institute, Gurgaon, India

Computer 78 **3052. Evaluation of DCE-MRI Data Sampling, Reconstruction and Model Fitting Using Digital Brain Phantom**

Yinghua Zhu[1], Yi Guo[1], Sajan Goud Lingala[1], Samuel Barnes[2], R. Marc Lebel[3], Meng Law[1], Krishna Nayak[1]

[1]University of Southern California, Los Angeles, CA, United States; [2]California Institute of Technology, Pasadena, CA, United States; [3]GE Healthcare, Calgary, Canada

Computer 79 **3053. Dynamic Contrast-Enhanced MRI Model Parameters from Different Regions Within the Vascular Wall of Carotid Plaques: Comparison with Histology**

Raf H.M. van Hoof[1, 2], Evelien Hermeling[1, 2], Nicky J.A. Wijnen[1], Floris H.B.M. Schreuder[1, 3], Martine T.B. Truijman[1, 3], Stefan A. Voo,[24], Jack P.M. Cleutjens,[25], Judith C. Sluimer,[25], Sylvia Heeneman,[25], Robert J. van Oostenbrugge,[23], Jan-Willem H. Daemen[6], Mat J.A.P. Daemen[7], Joachim E. Wildberger[1, 2], M. Eline Kooi[1, 2]
[1]Radiology, Maastricht University Medical Center, Maastricht, Netherlands; [2]Cardiovascular Research Institute Maastricht (CARIM), Maastricht University, Maastricht, Netherlands; [3]Neurology, Maastricht University Medical Center, Maastricht, Netherlands; [4]Nuclear Medicine, Maastricht University Medical Center, Maastricht, Netherlands; [5]Pathology, Maastricht University Medical Center, Maastricht, Netherlands; [6]Surgery, Maastricht University Medical Center, Maastricht, Netherlands; [7]Pathology, Academic Medical Center, Amsterdam, Netherlands

Computer 80 **3054. Accelerating Brain DCE-MRI Acquisition Using an Iterative Reconstruction Method with Total Generalized Variation Penalty: Feasibility Study**

Chunhao Wang[1, 2], Fang-Fang Yin[1, 2], John P. Kirkpatrick[1, 2], Zheng Chang[1, 2]
[1]Radiation Oncology, Duke University Medical Center, Durham, NC, United States; [2]Medical Physics Graduate Program, Duke University, Durham, NC, United States

Computer 81 **3055. Concentrating and Clearing Mechanism of the Kidney Revealed by QSM at Ultra-Short TE**

Luke Xie[1], Nian Wang[2], Chunlei Liu,[12], G. Allan Johnson[1]
[1]Center for In Vivo Microscopy, Duke University Medical Center, Durham, NC, United States; [2]Brain Imaging Analysis Center, Duke University Medical Center, Durham, NC, United States

Computer 82 **3056. Multi-Band Multi-Echo EPI (M2-EPI) for Dynamic Susceptibility Contrast (DSC) Perfusion Imaging: A Feasibility Study**

Deqiang Qiu[1], Amit Saindane[1], Xiaodong Zhong[2], Seena Dehkharghani[1]
[1]Radiology and Imaging Sciences, Emory University, Atlanta, GA, United States; [2]Siemens Healthcare, GA, United States

Computer 83 **3057. Quantifying MRI Contrast Agent in Flowing Blood Using DCE-MRI – a Feasibility Study**

Matt N. Gwilliam[1], David J. Collins[1], Martin O. Leach[1], Matthew R. Orton[1]
[1]Institute of Cancer Research, London, Greater London, United Kingdom

Computer 84 **3058. Retrospective Resolution Adaption for DCE MRI Using 3D Golden Angle Radial Acquisition**

ISMRM MERIT AWARD magna cum laude

Ina Nora Kompan[1, 2], Benjamin Richard Knowles[3], Cristoffer Cordes[1], Matthias Guenther[1, 2]
[1]Fraunhofer MEVIS, Bremen, Germany; [2]mediri GmbH, Heidelberg, Baden-Württemberg, Germany; [3]Universitätsklinikum Freiburg, Freiburg, Baden-Württemberg, Germany

Computer 85 **3059. Comparison of Different Leakage-Correction Methods for DSC-Based CBV Measurement in Human Gliomas**

Anne Kluge[1], Mathias Lukas[2], Vivien Toth[3], Stefan Förster[2], Claus Zimmer[1], Christine Preibisch[1, 4]
[1]Department of Neuroradiology, Klinikum rechts der Isar, TU München, Munich, Germany; [2]Department of Nuclear Medicine, Klinikum rechts der Isar, TU München, Munich, Germany; [3]Department of Radiology, Klinikum rechts der Isar, TU München, Munich, Germany; [4]Department of Neurology, Klinikum rechts der Isar, TU München, Munich, Germany

Computer 86 **3060. Closing Up on Pharmacokinetic Modeling – Exploring the Limits of the Tofts Model for DCE-MRI Analysis Using Intravital Microscopy**

Dina Sikpa[1], Réjean Lebel[1], Vincent Turgeon[1], Lisa Whittingstall[1], Jérémie Fouquet[1], Marc-André Bonin[1], Luc Tremblay[1], Martin Lepage[1]
[1]Centre d'imagerie moléculaire de Sherbrooke, Université de Sherbrooke, Sherbrooke, Québec, Canada

Computer 87 **3061. Quantifying Pulmonary Perfusion in Health and Pulmonary Disease with DCE-MRI: Effect of Bolus Delay**

J. Tim Marcus[1], Barry Ruijter[1], Taco Kind[2], Rudolf Verdaasdonk[1], Anton Vonk Noordegraaf[2]
[1]Physics & Medical Technology, VU University Medical Center, Amsterdam, Netherlands; [2]Pulmonology, VU University Medical Center, Amsterdam, Netherlands

Computer 88 **3062. A Novel Vascular Transfer Function for Modeling the Local Arterial Input Function for More Accurate Estimation of Vascular Permeability Parameters in DCE-MRI Studies**

Siamak Nejad-Davarani[1, 2], Hassan Bagher-Ebadian[3, 4], Douglas Noll[2], Tom Mikkelsen[5], Lisa Scarpace[5], Azimeh Noorizadeh Vahed Dehkordi[6], James R. Ewing[1, 4], Michael Chopp[1, 4], Quan Jiang[1, 4]
[1]Department of Neurology, Henry Ford Hospital, Detroit, MI, United States; [2]Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States; [3]Department of Radiology, Henry Ford Hospital, Detroit, MI, United States; [4]Department of Physics, Oakland University, Rochester, MI, United States; [5]Department of Neurosurgery, Henry Ford Hospital, Detroit, MI, United States; [6]Department of Nuclear Engineering, Shahid Beheshti University, Tehran, Iran

Computer 89 **3063. A Tracer Kinetic Model with Optimal Compartments for Assessing Intravoxel Tumor Heterogeneity in Papillary Thyroid Carcinoma**

Yonggang Lu[1], Yousef Mazaheri[1], Vaois Hatzoglou[1], Hilda Stambuk[1], Ashok Shaha[1], Joseph O. Deasy[1], R. Michael Tuttle[1], Amita Shukla-Dave[1]
[1]Memorial Sloan-Kettering Cancer Center, NEW YORK, United States

Computer 90 **3064. An Efficient Method for Pharmacokinetics Parameter Calculation in Permeability Study Using Dynamic Contrast-Enhanced Magnetic Resonance Imaging**

Chunhao Wang[1, 2], Fang-Fang Yin[1, 2], Zheng Chang[1, 2]
[1]Radiation Oncology, Duke University Medical Center, Durham, NC, United States; [2]Medical Physics Graduate Program, Duke University, Durham, NC, United States

Computer 91 **3065. Comparison of the Arterial Input Function Measured at Low and High Contrast Agent Doses in Prostate Cancer Patients**

Shiyang Wang[1], Gregory S. Karczmar[1], Xiaobing Fan[1], Federico Pineda[1], Milica Medved[1], Ambereen Yousuf[1], Aytek Oto[1]
[1]Radiology, University of Chicago, Chicago, IL, United States

Computer 92 **3066. DCE-MRI Analysis Using Model-Based Classification Shapes with Non-Negative Least-Squares**

Zaki Ahmed[1], Ives R. Levesque, [12]
[1]Medical Physics Unit, McGill University, Montreal, Quebec, Canada; [2]Research Institute of the McGill University Health Center, Montreal, Quebec, Canada

Computer 93 **3067. Automatic Selection of Arterial Input Function Using K-Mean Cluster Algorithm**

Tian-Yu Su[1], Sheng-Min Huang[1], Cheng-He Li[1], Kung-Chu Ho[2], Fu-Nien Wang[1]
[1]Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan; [2]Nuclear Medicine, Chang Gung Memorial Hospital, Taoyuan, Taiwan

Electronic Poster
Hybrid Systems, Gradients & Monitoring

Exhibition Hall Monday 14:15-15:15

Computer 1 **3068. Integrated MRI-LINAC Radiotherapy Machine**

Oliver Heid[1], Michael Kleemann[1], Jürgen Heller[1]
[1]CT NTF HTC, Siemens AG, Erlangen, Bavaria, Germany

Computer 2 **3069. Whole-Body PET/MR Imaging: Quantitative Evaluation of a Novel Model-Based MR Attenuation Correction Method Including Bone**

Daniel H. Paulus[1], Harald H. Quick[1, 2], Matthias Fenchel[3], Christian Geppert[3], David Faul[4], Yiqiang Zhan[5], Fernando E. Boada[6, 7], Kent L. Friedman[6], Thomas Koesters[6, 7]
[1]Institute of Medical Physics, University of Erlangen-Nürnberg, Erlangen, Germany; [2]High Field and Hybrid MR Imaging, University Hospital Essen, Essen, Germany; [3]Siemens AG Healthcare, Erlangen, Germany; [4]Siemens AG Healthcare, New York, NY, United States; [5]Siemens AG Healthcare, Malvern, PN, United States; [6]NYU Langone Medical Center, Center for Biomedical Imaging, Department of Radiology, New York, NY, United States; [7]NYU Langone Medical Center, Center for Advanced Imaging Innovation and Research, CAI2R, New York, NY, United States

Computer 3 **3070. Clinical MR-Linac System**
Johan Overweg[1], Falk Uhlemann[1], Phil Jonas[2], Thomas Amthor[1], Peter Forthmann[2], Panu Vesanen[3], Tero Virta[3], Christopher Busch[3], Kevin Brown[4]
[1]Philips Innovative Technologies, Hamburg, Germany; [2]Philips Healthcare, Latham, NY, United States; [3]MR therapy, Philips Healthcare, Vantaa, Finland; [4]Elekta Limited, Crawley, United Kingdom

Computer 4 **3071. Optimisation of a 32-Channel Resonator for Simultaneous PET/MRI of the Head at 3.0 Tesla: Material Selection and Performance Testing**
Adam Farag[1, 2], Jean Theberge[3, 4]
[1]Ceresensa Inc, London, Ontario, Canada; [2]Western University, London, Ontario, Canada; [3]Lawson Health Research Institute, Ontario, Canada; [4]Department of Medical Biophysics, University of Western Ontario, London, Ontario, Canada

Computer 5 **3072. Zero TE Based PET Attenuation Correction in the Head**
Florian Wiesinger[1], Anne Menini[1], Sangtae Ahn[2], Lishui Cheng[2], Gaspar Delso[3], Sandeep Kaushik[4], Ravindra Manjeshwar[2], Dattesh Shanbhag[4]
[1]GE Global Research, Munich, Germany; [2]GE Global Research, Niskayuna, NY, United States; [3]GE Healthcare, Zurich, Switzerland; [4]GE Global Research, Bangalore, India

Computer 6 **3073. MR Driven PET-Attenuation Correction in Presence of Metal Implants Using Anatomy Context Driven Decisioning**
Dattesh D. Shanbhag[1], Sandeep S. Kaushik[1], Sheshadri Thiruvenkadam[1], Florian Wiesinger[2], Sangtae Ahn[3], Rakesh Mullick[4], Ravindra M. Manjeshwar[5]
[1]Medical Image Analysis Laboratory, GE Global Research, Bangalore, Karnataka, India; [2]Diagnostics & Biomedical Technology Laboratory, GE Global Research, Garching, Bavaria, Germany; [3]Functional Imaging Laboratory, GE Global Research, Niskayuna, NY, United States; [4]Diagnostics & Biomedical Technologies, GE Global Research, Bangalore, Karnataka, India; [5]X-ray & Functional Imaging, GE Global Research, Niskayuna, NY, United States

Computer 7 **3074. MR Guided Motion Correction for Yttrium 90 Imaging Using a Simultaneous PET/MRI Scanner**
Mootaz Eldib[1, 2], Niels Oesingmann[3], David Faul[3], Jason Bini[1, 2], Lale Kostakoglu[4], Karin Knesaurek[4], Zahi A. Fayad[1]
[1]TMII, Ichan School of Medicine at Mount Sinai, New York, NY, United States; [2]Biomedical Engineering, City College of New York, New York, NY, United States; [3]Siemens Healthcare, New York, NY, United States; [4]Radiology, Ichan School of Medicine at Mount Sinai, New York, NY, United States

Computer 8 **3075. A New Unilateral Breast Specific Coil Design and Dual-Modality Interface Configuration for MR/scintimammography**
Jaedu Cho[1], Seunghoon Ha[1], Alex Luk[1], Farouk Nouizi[1], Orhan Nalcioglu[1], Gultekin Gulsen[1], Ming-Ying Su[1]
[1]Center for Functional Onco-Imaging, University of California Irvine, Irvine, CA, United States

Computer 9 **3076. Design of a Whole-Body Radio Frequency Coil for Image-Guided Radiotherapy Treatment in a MRI-LINAC System**
Aurelien Destruel[1], Ewald Weber[1], Ivan Hughes[1], Yu Li[1], Feng Liu[1], Stuart Crozier[1]
[1]School of ITEE, University of Queensland, Brisbane, Queensland, Australia

Computer 10 **3077. Feasibility of 18F-FDG Radio-Tracer Dose Reduction in Simultaneous Carotid PET/MR Imaging**
Mootaz Eldib[1, 2], Jason Bini[1, 2], Olivier Lairez[1, 2], Zahi A. Fayad[1, 2], Venkatesh Mani[1, 2]
[1]Radiology, Icahn School of Medicine at Mount Sinai, New York, United States; [2]Translational and Molecular Imaging Institute, Icahn School of Medicine at Mount Sinai, NEW YORK, United States

Computer 11 **3078. Whole-Body PET-MR Including DWI, T2w, and Gadofosveset-Enhanced T1w Sequences: Evaluation of MR Performance Compared to PET-CT and Relative Benefits Provided by Each Sequence**
Piotr Obara[1], Andreas Loening[1], Valentina Taviani[1], Andrei Iagaru[1], Brian Hargreaves[1], Shreyas Vasanawala[1]
[1]Radiology, Stanford Hospital, Stanford, CA, United States

Computer 12 **3079. MR Performance Evaluation of a PET/MR with SiPM Based Time of Flight PET Detectors**
Mohammad Mehdi Khalighi[1], Gaspar Delso[2], Sri-Harsha Maramraju[3], Greg Zaharchuk[4], Gary Glover[4]

[1]Applied Science Lab, GE Healthcare, Menlo Park, CA, United States; [2]Applied Science Lab, GE Healthcare, Zurich, Switzerland; [3]PET/MR Engineering, GE Healthcare, Waukesha, WI, United States; [4]Radiology Dep., Stanford University, Stanford, CA, United States

Computer 13 **3080. MR Performance of an MR-Linac Prototype**
Panu Vesanen[1], Jukka Tanttu[1], Juha Oila[1], Tiina Näsi[1], Annemaria Halkola[1], Tero Virta[1], Falk Uhlemann[2], Johan Overweg[2], Jarmo Ruohonen[1]
[1]MR Therapy, Philips Healthcare, Vantaa, Finland; [2]Philips Innovative Technologies, Hamburg, Germany

Computer 14 **3081. Dynamic Brain PET/MR Using TOF Reconstruction**
Mohammad Mehdi Khalighi[1], Gaspar Delso[2], Sri-Harsha Maramraju[3], Michel Tohme[3], Gary Glover[4], Greg Zaharchuk[4]
[1]Applied Science Lab, GE Healthcare, Menlo Park, CA, United States; [2]Applied Science Lab, GE Healthcare, Zurich, Switzerland; [3]PET/MR Engineering, GE Healthcare, Waukesha, WI, United States; [4]Radiology Dep., Stanford University, Stanford, CA, United States

Computer 15 **3082. Stress and Strain Sensitivity Study of 1.5T Conduction Cooled MgB_2 Magnet Design.**
Abdullah Al Amin[1], Tanvir Baig[2], Zhen Yao[2], Michael A. Martens[2]
[1]Department of Mechanical and Aerospace Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Department of Physics, Case Western Reserve University, Cleveland, OH, United States

Computer 16 **3083. A 24-Channel Shim Array for Real-Time Shimming of the Human Spinal Cord: Characterization and Proof-Of-Concept Experiment**
Ryan Topfer[1], Kai-Ming Lo[2], Karl Metzemaekers[2], Donald Jette[2], Hoby P. Hetherington[3], Piotr Starewicz[2], Julien Cohen-Adad[1, 4]
[1]Institute of Biomedical Engineering, Ecole Polytechnique de Montréal, Montreal, QC, Canada; [2]Resonance Research Inc., Billerica, MA, United States; [3]Department of Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [4]Functional Neuroimaging Unit, CRIUGM, Université de Montréal, Montreal, QC, Canada

Computer 17 **3084. Simultaneous EEG-FMRI: Evaluating the Effect of the EEG Cap Cabling Configuration on the Gradient Artefact.**
Muhammad E H Chowdhury[1], Karen J. Mullinger[1, 2], Richard Bowtell[1]
[1]SPMIC, School of Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom; [2]BUIC, School of Psychology, University of Birmingham , Birmingham, United Kingdom

Computer 18 **3085. An Improved Design of Multi-Channel Switching Circuit for Matrix Gradient Coil**
Huijun Yu[1], Frank Huethe[2], Sebastian Littin[1], Kelvin Layton[1], Stefan Kroboth[1], Feng Jia[1], Jürgen Hennig[1], Maxim Zaitsev[1]
[1]Dept. of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, BW, Germany; [2]Dept. of Clinical Neurology and Neurophysiology, University of Freiburg, Freiburg, BW, Germany

Computer 19 **3086. Virtual Phantom (ViP) MRI: A Method to Generate Virtual Phantoms That Mimic Water-Fat Systems**
Roberto Salvati[1, 2], Eric Hitti[1, 2], Jean-Jacques Bellanger[1, 2], Herve Saint-Jalmes[1, 3], Giulio Gambarota[1, 2]
[1]Université de Rennes 1, LTSI, Rennes, France; [2]INSERM, UMR 1099, Rennes, France; [3]INSERM, UMR 1099 , Rennes, France

Computer 20 **3087. Peripheral Nerve Stimulation Considerations in the Presence of the Metallic Objects**
Vahid Ghodrati[1], Niloufar Zakariaei[1], Abbas Nasiraei Moghaddam[1, 2]
[1]BME, Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran; [2]School of Cognitive Sciences, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran

Computer 21 **3088. Dynamic Off-Resonance Magnetic Field Monitoring and Correction Using Proton Field Probes**
Ying-Hua Chu[1], Yi-Cheng Hsu[1], Shang-Yueh Tsai[2], Wen-Jui Kuo[3], Fa-Hsuan Lin[1]
[1]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan; [2]National Chengchi University, Taipei, Taiwan; [3]National Yang Ming University, Taipei, Taiwan

Computer 22 **3089. Accurate Vibroacoustic Simulations in High Performance Gradient Coils**
Simone Angela Winkler[1], Trevor P. Wade[2], Andrew Alejski[2], Charles McKenzie[2], Brian K. Rutt[1]
[1]Dept. of Radiology, Stanford University, Stanford, CA, United States; [2]Robarts Research Institute, The University of Western Ontario, London, Ontario, Canada

Computer 23 **3090. The Automatic Placement of Cooling Pathways for MRI Gradient Coils Using Path Finding Algorithms**
Elliot Smith[1], Fabio Freschi, [12], Maurizio Repetto[2], Stuart Crozier[1]
[1]School of ITEE, University of Queensland, Brisbane, Queensland, Australia; [2]Department of Energy, Politecnico di Torino, Torino, Italy

Computer 24 **3091. Design of a Shielded Coil Element of a Matrix Gradient Coil**
Feng Jia[1], Sebastian Littin[1], Kelvin Layton[1], Stefan Kroboth[1], Huijun Yu[1], Jürgen Hennig[1], Maxim Zaitsev[1]
[1]Dept. of Radiology, University Medical Center Freiburg, Freiburg, BW, Germany

Electronic Poster
Non-Array RF Coils, Materials & Other Hardware

Exhibition Hall Monday 14:15-15:15

Computer 25 **3092. RF Dipole Coil with Novel Slotted Shielding Plate Achieving an Improved B1 Distribution for 7 T MRI**
Zhichao Chen[1, 2], Mahdi Abbasi[1], Klaus Solbach[2], Daniel Erni[1], Andreas Rennings[1]
[1]General and Theoretical Electrical Engineering (ATE), Faculty of Engineering, University of Duisburg-Essen, Duisburg, NRW, Germany; [2]High Frequency Engineering (HFT), Faculty of Engineering, University of Duisburg-Essen, Duisburg, NRW, Germany

Computer 26 **3093. Inductively Coupled Planar TX Coils: Analysis of B_1^+ Efficiency and SAR Performance**
Johanna Schöpfer[1, 2], Klaus Huber[2], Stephan Biber[3], Markus Vester[3], Sebastian Martius[2], Martin Vossiek[4]
[1]LHFT, University of Erlangen-Nuremberg , Erlangen, Germany; [2]Siemens AG, Corporate Technology, Erlangen, Germany; [3]Siemens AG, Healthcare, Erlangen, Germany; [4]LHFT, University of Erlangen-Nuremberg, Erlangen, Germany

Computer 27 **3094. Tackling the Challenges of Imaging the Infant Brain in a Dedicated Neonatal Coil**
Emer Hughes[1], Tobias Winchmann[2], Laurent Mager[3], Francesco Padormo[4], Hutter Jana[4], Julia Wurie[1], Matthew Fox[1], Maryanne Sharma[1], David Edwards[1], Andrew Kapetanakis[1], Alessandro Allievi[5], Joseph Hajnal[4]
[1]Centre for the developing brain, Kings College London, London, United Kingdom; [2]Rapid biomedical engineering, Germany; [3]Peraltec AG, Switzerland; [4]Division of imaging science and biomedical engineering, Kings College London, London, United Kingdom; [5]Imperial College London, London, United Kingdom

Computer 28 **3095. WITHDRAWN**

Computer 29 **3096. High-Precision Magnetic Susceptometry Applied to 3D-Printed RF Coil Construction**
R. Adam Horch[1, 2], John C. Gore[1, 2]
[1]Department of Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [2]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States

Computer 30 **3097. Ink-Jet Printing Enables Maskless Electroplating Mould Patterning for Rapid MRI Coil Fabrication**
Markus V. Meissner[1], Nils Spengler[1], Dario Mager[1], Jens Höfflin[1], Peter T. While[1], Jan G. Korvink[1]
[1]Department of Microsystems Engineering - IMTEK, University of Freiburg, Freiburg, BW, Germany

Computer 31 **3098. Baluned-Hairpin-(BHP)-Resonator for Field Monitoring**
Thomas Riemer[1]
[1]Insitute for Medical Physics and Biophysics, University of Leipzig, Leipzig, Saxony, Germany

Computer 32 **3099. Comparison of Different Simulation Methods Regarding Their Feasibility for MRI Coil Design**
Sebastian Martius[1], Johanna Schöpfer[2, 3], Andreas Fackelmeier[1], Klaus Huber[1]
[1]Siemens AG, Coporate Technology , Erlangen, Germany; [2]LHFT, University of Erlangen-Nuremberg, Erlangen, Germany; [3]Siemens AG, Coporate Technology, Erlangen, Germany

Computer 33 **3100. The Distributed Inductance Electric Dipole Antenna**
Graham C. Wiggins[1, 2], Karthik Lakshmanan[1, 2], Gang Chen[1, 3]
[1]The Bernard and Irene Schwartz Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, Newyork, NY, United States; [2]The Center for Advanced Imaging Innovation and Research (CAI2R),Department of Radiology, New York University School of Medicine, Newyork, NY, United States; [3]The Sackler Institute of Graduate Biomedical Sciences, New York University School of Medicine, Newyork, NY, United States

Computer 34 **3101. A Cryogenic Solenoid Transmit/Receive Coil Cooled with Liquid Nitrogen for Sodium Imaging at 11.7 T**
Kuan Zhang[1], Lian Xue[1], Guangfu Xu[2], Zungang Liu[2], Erzhen Gao[2], Q.Y. Ma[2], Nikolaus M. Szeverenyi[3], Graeme Bydder[3]
[1]Time Medical Systems, Inc, San Diego, CA, United States; [2]Time Medical Systems, Inc, China; [3]University of California, San Diego, CA, United States

Computer 35 **3102. Evaluation on Coupling Strategies for Ultra-High Field MRI Probe Made of Cylindrical Dielectric Resonator**
Rui Liu[1], Wei Luo[2], Thomas Neuberger[3, 4], Michael Lanagan, [12]
[1]Engineering Science and Mechanics, Pennsylvania State University, University Park, PA, United States; [2]Material Research Insititute, Pennsylvania State University, University Park, PA, United States; [3]Huck Institute of Life Science, Pennsylvania State University, University Park, PA, United States; [4]Department of Biomedical Engineering, Pennsylvania State University, University Park, PA, United States

Computer 36 **3103. Evaluation of Displacement Currents and Conduction Currents in a Close Fitting Head Array with High Permittivity Material**
ChristopherM. M. Collins[1, 2], Giuseppe Carluccio[1, 2], Manushka Vaidya[1, 2], Gillian Haemer[1, 2], Riccardo Lattanzi[1, 2], Graham C. Wiggins[1, 2], Daniel K. Sodickson[1, 2], Qing X. Yang[3]
[1]Center for Advanced Imaging Innovation and Research (CAI2R) , New York University School of Medicine, New York, NY, United States; [2]Bernard and Irene Schwartz Center for Biomedical Imaging, New York University School of Medicine, NY, United States; [3]Center for NMR Research, Penn State College of Medicine, Hershey, PA, United States

Computer 37 **3104. Changes in Neighbor and Next-Nearest-Neighbor Coupling of Transmit/receive Arrays in the Presence of Close-Fitting High Permittivity Materials**
Gillian G. Haemer[1, 2], Manushka V. Vaidya[1, 2], Christopher M. Collins[1, 2], Graham C. Wiggins[1]
[1]The Center for Advanced Imaging Innovation and Research, and the Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States; [2]The Sackler Institute of Graduate Biomedical Sciences, New York University School of Medicine, New York, NY, United States

Computer 38 **3105. SAR Reduction in RF Shimming Through the Use of High Permittivity Materials: Approach Towards the Ultimate Intrinsic SAR**
Gillian G. Haemer[1, 2], Manushka V. Vaidya[1, 2], Christopher M. Collins[1, 2], Daniel K. Sodickson[1, 2], Graham C. Wiggins[1], Riccardo Lattanzi[1, 2]
[1]The Center for Advanced Imaging Innovation and Research, and the Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States; [2]The Sackler Institute of Graduate Biomedical Sciences, New York University School of Medicine, New York, NY, United States

Computer 39 **3106. Improving B_1^+ Uniformity Using Segmented Dielectric Pads**
Aurelien Destruel[1], Jin Jin[1], Feng Liu[1], Mingyan Li[1], Ewald Weber[1], Stuart Crozier[1]
[1]School of ITEE, University of Queensland, Brisbane, Queensland, Australia

Computer 40 **3107. The Basis Functions: A Novel Approach for Electromagnetic Fields Evaluations for Any Matching and Coupling Conditions**
Gianluigi Tiberi[1, 2], Nunzia Fontana[3], Riccardo Stara[4], Alessandra Retico[5], Agostino Monorchio[3], Michela Tosetti[2]
[1]Imago7, Pisa, PI, Italy; [2]IRCCS Stella Maris, Pisa, PI, Italy; [3]Dipartimento di Ingegneria dell'Informazione, Pisa, PI, Italy; [4]Dipartimento di Fisica, Pisa, PI, Italy; [5]Istituto Nazionale di Fisica Nucleare, sezione di Pisa, Pisa, PI, Italy

Computer 41 **3108. RF Safety Validation of High Permittivity Pads at 7 Tesla**
Wyger Brink[1], Yacine Noureddine[2], Oliver Kraff[2], Andreas K. Bitz[2, 3], Andrew Webb[1]

[1]Radiology, Leiden University Medical Center, Leiden, Netherlands; [2]Erwin L. Hahn Institute for Magnetic Resonance Imaging, University Duisburg-Essen, Essen, Germany; [3]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

Computer 42 **3109. Ideal Current Patterns Correspond to Larger Surface Coils with Use of High Permittivity Materials**
Manushka V. Vaidya[1, 2], Gillian G. Haemer[1, 2], Giuseppe Carluccio[1], Dmitry Novikov[1, 2], Daniel K. Sodickson[1, 2], Christopher M. Collins[1, 2], Graham C. Wiggins[1, 2], Riccardo Lattanzi[1, 2]
[1]Center for Advanced Imaging Innovation and Research, and Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States; [2]Sackler Institute of Graduate Biomedical Sciences, New York University School of Medicine, New York, NY, United States

Computer 43 **3110. Optimal Permittivity of Dielectric Liners and Their Effects on Transmit Array Performance**
Atefeh Kordzadeh[1], Nicola DeZanche[2]
[1]Biomedical Engineering, University of Alberta, Edmonton, Alberta, Canada; [2]Department of Medical Physics, Cross Cancer Institute and University of Alberta, Edmonton, Alberta, Canada

Computer 44 **3111. Influence of Metamaterial Insert to Cylindrical RF Coil Array in Human Knee MR Imaging at 1.5T**
Xiaoqing Hu[1], Chunlai Li[2], Hongyi Wang[1], Xiaoliang Zhang[3], Xin Liu[1], Hairong Zheng[1], Lin Luan[2], Ye Li[1]
[1]Lauterbur Research Center for Biomedical Imaging, Shenzhen Institutes of Advanced Technology of Chinese Academy of Sciences, Shenzhen, Guangdong, China; [2]ShenzhenKey Laboratory of Optical and Terahertz Meta-RF, Kuang-Chi Institute of Advanced Technology, Shenzhen, Guangdong, China; [3]Department of Radiology and Biomedical Imaging, University of California San Francisco, CA, United States

Computer 45 **3112. Development of Low Field MRI System Running on the Same Magnetic Circuit Used for 750 MHz CW EPR Imaging System**
Hideo Sato-Akaba[1], Hiroshi Hirata[2]
[1]Department of Systems Innovation, Graduate School of Engineering Science, Osaka University, Toyonaka, Osaka, Japan; [2]Division of Bioengineering and Bioinformatics, Graduate School of Information Science and Technology, Hokkaido University, Sapporo, Hokkaido, Japan

Computer 46 **3113. SpinoTemplate: A System for MR-Guided Spinal Cellular Therapeutics Injections**
Alexander Squires[1], John Oshinski[2], Jason Lamanna[2], Zion Tsz Ho Tse[1]
[1]College of Engineering, The University of Georgia, Athens, GA, United States; [2]Department of Radiology, Emory University, Atlanta, GA, United States

Computer 47 **3114. Non-Metal Electrodes for Local Field Potential Recordings in Magnetic Resonance Scanners**
ISMRM MERIT AWARD magna cum laude
Jennifer Michelle Taylor[1, 2], Shan Hu[3], Rajesh Rajamani[4], Xiao-Hong Zhu[2], Yi Zhang[2], Wei Chen[1, 2]
[1]Biomedical Engineering, University of Minnesota, Minneapolis, MN, United States; [2]Radiology, University of Minnesota, Minneapolis, MN, United States; [3]Mechanical Engineering, Iowa State University, Ames, IA, United States; [4]Mechanical Engineering, University of Minnesota, Minneapolis, MN, United States

Computer 48 **3115. Design of FPGA On-Chip Module for Real-Time Image Processing**
Limin Li[1], Alice M. Wyrwicz[1, 2]
[1]Center for Basic MR Research, NorthShore University HealthSystem, Evanston, IL, United States; [2]Department of Biomedical Engineering, Northwestern University, Evanston, IL, United States

Electronic Poster
RF Coil Arrays

Exhibition Hall Monday 14:15-15:15

Computer 49 **3116. Dipole Arrays for MR Head Imaging: 7T Vs. 10.5T**
Jinfeng Tian[1], Russell Lagore[2], J. Thomas Vaughan[2]
[1]Center for Magnetic Resonance Research, U. of Minnesota, Minneapolis, MN, United States; [2]U. of Minnesota, MN, United States

Computer 50 **3117. Asymmetrically Segmented Loop Phased Coil for Uniform RF Field Excitation at 7T**
Seunghoon Ha[1], Haoqin Zhu[1], Labros Petropoulos[1]

[1]R&D, IMRIS Inc., Minnetonka, MN, United States

Computer 51 **3118. Magnetic Wall Decoupling for Dipole Transceiver Array for MR Imaging: A Feasibility Test**

Xinqiang Yan[1, 2], Xiaoliang Zhang[3], Long Wei[2], Rong Xue[1]
[1]State Key Laboratory of Brain and Cognitive Science, Beijing MRI Center for Brain Research, Institute of Biophysics, Chinese Academy of Sciences, Beijing, China; [2]Key Laboratory of Nuclear Analysis Techniques, Institute of High Energy Physics, Chinese Academy of Sciences, Beijing, China; [3]Department of Radiology and Biomedical Imaging, University of California San Francisco and UCSF/UC Berkeley Joint Graduate Group in Bioengineering, San Francisco, CA, United States

Computer 52 **3119. Evaluation of a Modified Passive Clamp Decoupling Network at High Frequencies**

Chathura Kumaragamage[1, 2], Jamie Near, [2]
[1]Biomedical Engineering, McGill University, Montreal, Quebec, Canada; [2]The Douglas Brain Imaging Centre, Montreal, Quebec, Canada

Computer 53 **3120. Matching-Network Noise Dominating Regime for Receive Coil Loops**

Xueming Cao[1], Elmar Fischer[1], Boris Keil[2], Lawrence L. Wald[2, 3], Jan G. Korvink[4], Jürgen Hennig[1], Maxim Zaitsev[1]
[1]University Medical Center Freiburg, Freiburg, Germany; [2]A. A. Martinos Center for Biomedical Imaging, Dpt. of Radiology, Massachusetts General Hospital, Charlestown, MA, United States; [3]Harvard Medical School, Boston, MA, United States; [4]IMTEK, University of Freiburg, Freiburg, Germany

Computer 54 **3121. ^{31}P MRSI of the Brain at 3T with an Improved 8-Channel Receive Array and Whitened Singular Value Decomposition for Optimal Combination of ^{31}P Array Signals**

M.J. van Uden[1], A. Rijpma[2, 3], C.T. Rodgers[4], Bart Philips[5], T.W.J. Scheenen[5], A. Heerschap[1]
[1]Department of Radiology and Nuclear Medicine, Radboud University Medical Center , Nijmegen, Gelderland, Netherlands; [2]Department of Geriatric Medicine, Radboud University Medical Center, Gelderland, Netherlands; [3]Radboud Alzheimer Center, Radboud University Medical Center, Gelderland, Netherlands; [4]OCMR, RDM Cardiovascular Medicine, University of Oxford, Oxford, United Kingdom; [5]Department of Radiology and Nuclear Medicine, Radboud University Medical Center, Nijmegen, Gelderland, Netherlands

Computer 55 **3122. Comparison of 16-Channel Stripline and 10-Channel Fractionated Dipole Transceive Arrays for Body Imaging at 7T**

M. Arcan Erturk[1], Alexander J. E. Raaijmakers[2], Gregor Adriany[1], Jinfeng Tian[1], Pierre-Francois van de Moortele[1], Cornelis A. T. van den Berg[2], Dennis W. J. Klomp[2], J. Thomas Vaughan[1], Kamil Ugurbil[1], Gregory J. Metzger[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States; [2]Imaging Division, UMC Utrecht, Utrecht, Netherlands

Computer 56 **3123. A 24-Channel Quadrature Surface Coil Array for High-Resolution Human Temporal Lobe fMRI at 3T**

Pu-Yeh Wu[1], Ying-Hua Chu[1], Shang-Yueh Tsai[2], Wen-Jui Kuo[3], Fa-Hsuan Lin[1]
[1]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan; [2]Institute of Applied Physics, National Chengchi University, Taipei, Taiwan; [3]Institute of Neuroscience, National Yang Ming University, Taipei, Taiwan

Computer 57 **3124. Three-Channel Flexible Phased Array Using Circular Coils with Annex Structure for Decoupling**

Jhy-Neng Tasso Yeh[1], Fa-Hsuan Lin[1]
[1]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan

Computer 58 **3125. Triangular Receiver Coils to Support Superior/inferior Acceleration**

Paul T. Weavers[1], Jacob N. Gloe[1], Eric G. Stinson[1], Phillip J. Rossman[1], Thomas C. Hulshizer[1], Stephen J. Riederer[1]
[1]Radiology, Mayo Clinic, Rochester, MN, United States

Computer 59 **3126. Direct Derivation of Multi-Channel Receive Coil Sensitivity**

Victor Taracila[1], Fraser Robb[1]
[1]General Electric, Aurora, OH, United States

Computer 60 3127. High Acceleration Ability of a Homemade 8-Ch Mouse Phased Array Suggests the Possibility for EPI-Based Functional Studies of Mice Models Using a Standard 3T Human Scanner
Hui Han[1], John Stager[1], Wei Cao[2], Miguel Navarro[3], Fraser Robb[3], Junghun Cho[1], Nozomi Nishimura[4], Chris Schaffer[4], Valerie Reyna[1], Yi Wang[1], Wen-Ming Luh[1]
[1]Cornell MRI Facility, Cornell University, Ithaca, NY, United States; [2]Tongji Hospital, Huazhong University of Science and Technology, Hubei, China; [3]GE Healthcare, OH, United States; [4]Biomedical Engineering, Cornell University, Ithaca, NY, United States

Computer 61 3128. Lung-Cardiac Specific ^{1}H RF Array Coil at 1.5 T
Madhwesha Rao[1], Fraser Robb[1, 2], Jim Wild[1]
[1]University of Sheffield, Sheffield, South Yorkshire, United Kingdom; [2]GE Healthcare, Aurora, OH, United States

Computer 62 3129. Swaddle Coils for a Newborn
A.M. Flynn[1], J.R. Corea[1], P.B. Lechene[1], P.D. Calderon[2], T. Zhang[3], G.C. Scott[3], S.S. Vasanawala[4], A.C. Arias[1], M. Lustig[1]
[1]EECS, Univ. of California, Berkeley, CA, United States; [2]Diamant Engineering, Castro Valley, CA, United States; [3]EECS, Stanford Univ., Palo Alto, CA, United States; [4]Radiology, Stanford LPCH, Palo Alto, CA, United States

Computer 63 3130. Array Coil and Sample Preparation and Support System for Whole Brain *Ex Vivo* Imaging at 100 µm
Azma Mareyam[1], Jonathan R. Polimeni[1, 2], Allison Stevens[1], Andre Van Der Kouwe[1, 2], Loren D. Bridgers[3], Jason P. Stockmann[1, 2], Matthew D. Tisdall[1, 2], Lee Tirrell[1], Allison L. Moreau[1], Ani Varjabedian[1], Brian L. Edlow[1, 2], Bruce Fischl[1, 4], Lawrence L. Wald[1, 2]
[1]A.A. Martinos Center of Biomedical Engineering, Department of Radiology, Charlestown, MA, United States; [2]Harvard Medical School, Boston, MA, United States; [3]Department of Mechanical Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States; [4]CSAIL, Massachusetts Institute of Technology, Cambridge, MA, United States

Computer 64 3131. Short Dipole Array for Enhanced B1 Efficiency/sensitivity at the Expense of SAR
Alexander J.E. Raaijmakers[1], Arcan Erturk[2], Greg Metzger[2], Cornelis A.T. van den Berg[1], Gregor Adriany[2]
[1]Imaging Division, UMC Utrecht, Utrecht, Netherlands; [2]Center for Magnetic Resonance Research, Minneapolis, MN, United States

Computer 65 3132. Transmit Power Reduction and B_1^+ Homogenization Using 4-Channel Regional RF Shimming for Shoulder Imaging at 3T
Yukio Kaneko[1], Yoshihisa Soutome[1, 2], Kosuke Ito[2], Masahiro Takizawa[2], Hideta Habara[1, 2], Yusuke Seki[1], Tetsuhiko Takahashi[2], Yoshitaka Bito[2], Hisaaki Ochi[1]
[1]Central Research Laboratory, Hitachi Ltd., Kokubunji-shi, Tokyo, Japan; [2]Hitachi Medical Corporation, Kashiwa, Chiba, Japan

Computer 66 3133. A Combined Electric Dipole and Loop Head Coil for 7T Head Imaging
Gang Chen[1, 2], Karthik Lakshmanan[1], Daniel Sodickson[1], Graham Wiggins[1]
[1]Center for Advanced Imaging Innovation and Research (CAI2R) and Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States; [2]The Sackler Institute of Graduate Biomedical Science, New York University School of Medicine, New York, NY, United States

Computer 67 3134. A Receive Chain Add-On for Implementation of a 32-Channel Integrated Tx/Rx Body Coil and Use of Local Receive Arrays at 7 Tesla
Stephan Orzada[1], Andreas K. Bitz[2], Klaus Solbach[3], Mark E. Ladd, [12]
[1]Erwin L. Hahn Institute for MRI, Essen, NRW, Germany; [2]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany; [3]RF Technology, University Duisburg-Essen, Duisburg, Germany

Computer 68 3135. Initial Results: Ultra-High Field 32-Ch Tx Body Array with Bright Centers.
Shailesh B. Raval[1], Tiejun Zhao[2], Narayanan Krishnamurthy[1], Yujuan Zhao[1], Sossena Wood[1], Kyongtae Bae[1], Tamer S. Ibrahim[1]
[1]University of Pittsburgh, Pittsburgh, PA, United States; [2]Siemens Medical Solutions, Pittsburgh, PA, United States

Computer 69 3136. Boosting ^{31}P Signals by Using a 7 Channel Receive Array at 7T
Bart L. van de Bank[1], Frits Smits[1], Miriam W. van de Stadt-Lagemaat[1], Tom W.J. Scheenen[1, 2]

[1]Departement of Radiology and Nuclear Medicine, Radboud university medical center, Nijmegen, Netherlands; [2]Erwin L. Hahn Institute, University Duisburg-Essen, Germany

Computer 70 3137. 3D-Printed Microstrip Resonators for 4.7T MRI

Saeed Javidmehr[1], Adam Maunder[2], Mojgan Daneshmand[1], Nicola De Zanche[3]
[1]Electrical and Computer Engineering, University of Alberta, Edmonton, Alberta, Canada; [2]Mechanical Engineering, University of Alberta, Edmonton, Alberta, Canada; [3]Oncology , University of Alberta, Edmonton, Alberta, Canada

Computer 71 3138. Harmonic Excitation of MR Signal for Interventional MRI

Dmitri Artemov[1], Yoshinori Kato, [12]
[1]Radiology, Johns Hopkins University, Baltimore, MD, United States; [2]3 Life Science Tokyo Advanced Research Center, Hoshi University, Tokyo, Shinagawa-ku, Japan

Computer 72 3139. Onboard RF Combination for Receiver Channel Reduction

Ziyuan Fu[1], Mark Bolding[2], Shumin Wang[1]
[1]Auburn University, Auburn, AL, United States; [2]Radiology, University of Alabama, Birmingham, AL, United States

Electronic Poster
UHF Applications: General

Exhibition Hall Monday 14:15-15:15

Computer 73 3140. Simultaneous *In Vivo* ^{1}H/^{23}Na-Imaging of Superficial Lymph Nodes Using 7 Tesla-MRI

ISMRM MERIT AWARD summa cum laude

Martin T. Freitag[1], Nadia Benkhedah[2], Pedram Yazdanbakhsh[3], Titus Lanz[3], Moritz Berger[2], Mathies Breithaupt[2], Jessica Hassel[4], Heinz-Peter Schlemmer[1], Mark E. Ladd[2], Armin M. Nagel[2]
[1]Department of Radiology, German Cancer Research Center, Heidelberg, Baden-Wuerttemberg, Germany; [2]Medical Physics in Radiology, German Cancer Research Center, Heidelberg, Baden-Wuerttemberg, Germany; [3]Rapid Biomedical, Rimpar, Bayern, Germany; [4]Department of Dermatology, National Center for Tumor Diseases, Heidelberg, Baden-Wuerttemberg, Germany

Computer 74 3141. Successful 2-Spoke PTX RF Pulse Excitation Using a Single-Channel Transmit 7T Console Retrofitted with a 16-Channel B1 Shimming Unit

Sebastian Schmitter[1], Xiaoping Wu[1], Edward John Auerbach[1], Lance DelaBarre[1], Gregor Adriany[1], Kamil Ugurbil[1], Pierre-Francois Van de Moortele[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States

Computer 75 3142. Measuring the Rate of Phosphocreatine Recovery in Human Skeletal Muscle After Exercise by Localized 1H MRS Without Water Suppression at 7T

Jimin Ren[1, 2], Baolian Yang[3], A. Dean Sherry[1, 4], Craig R. Malloy[1, 5]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Department of Radiology, University of Texas Southwestern Medical Center, Dallas, TX, United States; [3]Philips Healthcare, Cleveland, OH, United States; [4]Department of Chemistry, University of Texas at Dallas, Richardson, TX, United States; [5]VA North Texas Health Care System, Dallas, TX, United States

Computer 76 3143. MR Imaging of the Temporomandibular Joint at 7.0 Tesla: A Feasibility Study Using Novel High Permittivity Dielectric Pads

Andrei Manoliu[1, 2], Georg Spinner[2], Michael Wyss[2], Daniel Nanz[1], Dominik Ettlin[3], Luigi M. Gallo[3], Gustav Andreisek[1]
[1]Department of Radiology, University Hospital Zurich, Zurich, Switzerland; [2]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [3]Center for Dental and Oral Medicine and Maxillofacial Surgery, University of Zurich, Zurich, Switzerland

Computer 77 3144. A 32 Channel Bi-Lateral Breast Array for High Resolution Accelerated MR Imaging

R. O. Giaquinto[1, 2], R. G. Pratt[1], W. M. Loew[1], H. Friel[3], L. Bickford[3], C. Ireland[1], B. Daniels[1], B. Williams[1], L. Haas[1], J. M. Lanier[1], K. M. Cecil[1, 2], M. Mahoney[2], E. A. Morris[4], C. L. Dumoulin[1, 2]
[1]Imaging Research Center, Cincinnati Childrens Hospital Medical Center, Cincinnati, OH, United States; [2]UC College of Medicine, University of Cincinnati, Cincinnati, OH, United States; [3]Philips Healthcare, Best, Netherlands; [4]Memorial Sloan Kettering Cancer Center, New York, United States

Computer 78 3145. Overcoming the SAR Limitation of Magnetization Transfer Pulses at 7 Tesla Using Parallel Transmission
ISMRM MERIT AWARD magna cum laude
Bastien Guerin[1], Jonathan R. Polimeni[1], Thomas Witzel[1], Lawrence L. Wald[1, 2]
[1]Department of Radiology, Massachusetts General Hospital, Charlestown, MA, United States; [2]Division of Health Sciences Technology, Harvard-MIT, MA, United States

Computer 79 3146. The Three-Dimensional Shape of the Myopic Eye Measured with MRI
Jan-Willem M. Beenakker[1, 2], Denis P. Shamonin[3], Andrew G. Webb[1], Gregorius PM Luyten[2], Berend C. Stoel[3]
[1]Department of Radiology, C.J.Gorter Center for High Field MRI, Leiden University Medical Center, Leiden, Zuid-Holland, Netherlands; [2]Department of Ophthalmology, Leiden University Medical Center, Leiden, Zuid-Holland, Netherlands; [3]Department of Radiology, devision of Image Processing, Leiden University Medical Center, Leiden, Zuid-Holland, Netherlands

Computer 80 3147. It Goes to 11: A Scalable Home-Built Transmit Array Beyond Eight Channels
Andre Kuehne[1, 2], Patrick Waxmann[3], Werner Hoffmann[3], Harald Pfeiffer[3], Reiner Seemann[3], Frank Seifert[3], Oliver Speck[4], Bernd Ittermann[3]
[1]Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Vienna, Austria; [2]MR Centre of Excellence, Medical University of Vienna, Vienna, Austria; [3]Physikalisch-Technische Bundesanstalt (PTB), Braunschweig und Berlin, Berlin, Germany; [4]Otto-von-Guericke-University, Magdeburg, Germany

Computer 81 3148. Phosphorus 3D CSI at 9.4 T Using a 27-Channel Receiver Array
Shajan G[1], Christian Mirkes[2], Rolf Pohmann[1], Klaus Scheffler[1, 2]
[1]Max Planck Institute for Biological Cybernetics, Tuebingen, Baden Wuerttemberg, Germany; [2]University Hospital, Tuebingen, Baden Wuerttemberg, Germany

Computer 82 3149. Multi-Slice GagCEST Sequence for Whole-Joint GagCEST Mapping: Application to Articular Cartilage in the Ankle
Feliks Kogan[1], Brian Hargreaves[1], Garry Gold[1]
[1]Department of Radiology, Stanford University, Stanford, CA, United States

Computer 83 3150. Upper Extremity Neural and Vascular Imaging with UHF 7T MRI
Shailesh Raval[1], Tiejun Zhao[2], Narayanan Krishnamurthy[3], Tales Santini[3], Vijay S. Gorantla[3], Tamer S. Ibrahim[3]
[1]UPMC, Pittsburgh, PA, United States; [2]Siemens Medical Solutions, Pittsburgh, PA, United States; [3]University of Pittsburgh, Pittsburgh, PA, United States

Computer 84 3151. Stability Test Method for Cartesian Feedback Power Amplifier in PTx Array
Samaneh Shooshtary[1], Adam Buck[1], Klaus Solbach[1]
[1]Institute of Microwave and RF Technology, Duisburg-Essen University, Duisburg, Germany

Computer 85 3152. B_0 Shimming Further Improves Human Cardiac ^{31}P-MRS at 7 Tesla
Lance DelaBarre[1], Stefan Neubauer[2], Matthew D. Robson[2], J. Thomas Vaughan[1], Christopher T. Rodgers[2]
[1]CMRR, University of Minnesota, Minneapolis, MN, United States; [2]OCMR, University of Oxford, Oxon, United Kingdom

Computer 86 3153. Diffusion-Sensitized Ophthalmic MRI Free of Geometric Distortion in Patients with Intraocular Masses
Katharina Paul[1], Andreas Graessl[1], Jan Rieger[1, 2], Darius Lysiak[1, 2], Till Huelnhagen[1], Lukas Winter[1], Robin Heidemann[3], Tobias Lindner[4], Stefan Hadlich[5], Annette Zimpfer[6], Andreas Pohlmann[1], Paul-Christian Krueger[5], Soenke Langner[5], Oliver Stachs[4, 7], Thoralf Niendorf[1, 8]
[1]Max-Delbrueck Centre for Molecular Medicine, Berlin Ultrahigh Field Facility (B.U.F.F.), Berlin, Germany; [2]MRI.TOOLS GmbH, Berlin, Germany; [3]Siemens Healthcare Sector, Erlangen, Germany; [4]University Medicine Rostock, Pre-clinical Imaging Research Group, Rostock, Germany; [5]University of Greifswald, Institute for Diagnotic Radiology and Neuroradiology, Greifswald, Germany; [6]University Medicine Rostock, Institute of Pathology, Rostock, Germany; [7]University Medicine Rostock, Department of Ophthalmology, Rostock, Germany; [8]Experimental and Clinical Research Center, a joint cooperation between the Charité Medical Faculty and the Max-Delbrueck-Center, Berlin, Germany

Computer 87 3154. GAGCEST Imaging of Knee at 7T a Reproducibility Study
Anand Kumar Venkatachari[1], Cory Wyatt[1], Doug Kelley[2], Sharmila Majumdar[1]
[1]Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [2]GE Healthcare Technologies, San Francisco, CA, United States

Computer 88 **3155. Multi-Parametric Renal MRI at 7T**
Xiufeng Li[1], Edward J. Auerbach[1], Pierre-Francois Van de Moortele[1], Kamil Ugurbil[1], Gregory J. Metzger[1]
[1]Radiology-CMRR, University of Minnesota, Minneapolis, MN, United States

Computer 89 **3156. Construction of a 4-Channel Transmit/ 4-Channel Receive Neck Array for Carotid Artery Vessel Wall Imaging at 7 Tesla**
Konstantinos Papoutsis[1, 2], Linqing Li[2], Stephen J. Payne[1], Peter Jezzard[2]
[1]Department of Engineering science, University of Oxford, Oxford, United Kingdom; [2]FMRIB Centre, Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, United Kingdom

Computer 90 **3157. MRI of the Pulleys of the Flexor Tendons of the Fingers at 11.7T**
Kenyu Iwasaki[1], Reni Biswas[1], Betty Tran[1], Sheronda Statum[1], Christine Chung[1], Nikolaus M. Szeverenyi[1], Graeme Bydder[1]
[1]University of California, San Diego, CA, United States

Computer 91 **3158. T_1- And TR-Independent B_1^+ Mapping by Bloch-Siegert Shift for 7T Human Cardiac ^{31}P-MRS**
William T. Clarke[1], Matthew D. Robson[1], Christopher T. Rodgers[1]
[1]OCMR, RDM Cardiovascular Medicine, University of Oxford, Oxford, United Kingdom

Computer 92 **3159. Ultrahigh Field MRI After Upper Extremity Transplantation.**
Shailesh B. Raval[1], Tiejun Zhao[2], Yujuan Zhao[1], Vijay S. Gorantla[1], Tamer S. Ibrahim[1]
[1]University of Pittsburgh, Pittsburgh, PA, United States; [2]Siemens Medical Solutions, Pittsburgh, PA, United States

Computer 93 **3160. MRI of the Cartilaginous and Fibrous Structure of the Meniscus of the Knee: *In Vitro* Studies at 11.7T**
Hongda Shao[1], Soorena A. Zanganeh[1], Jihye Baek[1], Daryl D'Lima[1], Jiang Du[1], Nikolaus M. Szeverenyi[1], Graeme Bydder[1]
[1]University of California, San Diego, CA, United States

Computer 94 **3161. *In-Vivo* ^{31}P Chemical Shift Imaging Sensitivity Improvement Utilizing High Dielectric Pads**
Rita Schmidt[1], Wyger Brink[1], Andrew Webb[1]
[1]Leiden University Medical Center, Leiden, Netherlands

Computer 95 **3162. Parallel Imaging of the Prostate at 7T Using a B0 Crusher Coil to Suppress Aliasing Artifacts**
Remco Krijthe[1], Vincent Boer[1], Arjan Hendriks[1], Dennis Klomp[1]
[1]Radiology, University Medical Center Utrecht, Utrecht, Netherlands

Computer 96 **3163. Functional ^{31}P Magnetic Resonance Spectroscopic Imaging of the Human Calf Muscle at 7 T by Means of Echo–Planar Acquisition Techniques**
Andreas Korzowski[1], Peter Bachert[1]
[1]Medical Physics in Radiology, German Cancer Research Center, Heidelberg, Baden-Württemberg, Germany

Electronic Poster
RF Coil Arrays

Exhibition Hall Monday 15:15-16:15

Computer 1 **3164. Analysis of FDTD Field Simulation and Experimental Results in a Monopole Antenna Array Coil at 7T**
Myung-Kyun Woo[1], Suk-Min Hong[2], Jongho Lee[1], Young-Bo Kim[3], Zang-Hee Cho[4]
[1]Department of Electrical and Computer Engineering, Seoul National University, Seoul, Korea; [2]Institute of Neuroscience and Medicine - 4, Forschungszentrum Jülich, Jülich, Germany; [3]Gil Hospital, Incheon, Korea; [4]Neuroscience Research Institute, Incheon, Korea

Computer 2 **3165.** **Optimal Arrangement of Finite Element Loop Arrays for Parallel Imaging in a Spherical Geometry at 9.4 T**
Andreas Pfrommer[1], Anke Henning[1, 2]
[1]Max Planck Institute for Biological Cybernetics, Tuebingen, Germany; [2]Institute for Biomedical Engineering, UZH and ETH Zurich, Zurich, Switzerland

Computer 3 **3166.** **Potential Gain of a 256 Channel Head Coil at 7T: Combined Measurements and G-Factor Calculations**
Arjan D. Hendriks[1], Michel G.M. Italiaander[2], Natalia Petridou[1], Dennis W.J. Klomp[1, 2]
[1]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]MR Coils B.V., Drunen, Netherlands

Computer 4 **3167.** **A Novel Design 20-Channel Head Coil for Cortical Imaging with Ultra-High Resolution.**
Alexander Beckett[1, 2], Liyong Chen[1, 2], An T. Vu[3], David A. Feinberg[1, 2]
[1]Helens Wills Neuroscience Institute, University of California, Berkeley, CA, United States; [2]Advanced MRI Technology, Sebastopol, CA, United States; [3]CMRR, University of Minnesota, Minneapolis, MN, United States

Computer 5 **3168.** **High-Throughput Diffusion-Tensor-Imaging of Mouse Brains Using a Four-Coil System**
John C. Nouls[1], Alexandra Badea[1], Gary P. Cofer[1], G Allan Johnson[1]
[1]Center for In Vivo Microscopy, Duke University Medical Center, Durham, NC, United States

Computer 6 **3169.** **Performance Evaluation of 2-Channel Endorectal Coil Geometries for Imaging the Prostate at 7T**
M. Arcan Erturk[1], Gregor Adriany[1], Gregory J. Metzger[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States

Computer 7 **3170.** **A Novel Decoupling Technique for Multiple-Row Microstrip Transceiver Array Designs**
Xinqiang Yan[1, 2], Long Wei[2], Rong Xue[1], Xiaoliang Zhang[3]
[1]State Key Laboratory of Brain and Cognitive Science, Beijing MRI Center for Brain Research, Institute of Biophysics, Chinese Academy of Sciences, Beijing, China; [2]Key Laboratory of Nuclear Analysis Techniques, Institute of High Energy Physics, Chinese Academy of Sciences, Beijing, China; [3]Department of Radiology and Biomedical Imaging, University of California San Francisco and UCSF/UC Berkeley Joint Graduate Group in Bioengineering, San Francisco, CA, United States

Computer 8 **3171.** **Tx-Array Design Strategies for Reducing Excitation Artifact and Local SAR Hot Spots in PTx MRI**
Pei-Shan Wei[1, 2], Mike J. Smith[2], Christopher P. Bidinosti[3], Scott B. King, [14]
[1]Department of Physics and Astronomy, University of Manitoba, Winnipeg, Manitoba, Canada; [2]National Research Council of Canada , Winnipeg, Manitoba, Canada; [3]Department of Physics, University of Winnipeg, Winnipeg, Manitoba, Canada; [4]National Research Council of Canada, Winnipeg, Manitoba, Canada

Computer 9 **3172.** **A 3 Channel ^{31}P and 2 Channel ^{1}H Coil Array for ^{31}P NMR in the Visual Cortex at 7 T**
Sigrun Goluch[1, 2], Andre Kuehne[1, 2], Albrecht Ingo Schmid[1, 2], Ewald Moser[1, 2], Elmar Laistler[1, 2]
[1]MR Center of Excellence, Medical University of Vienna, Vienna, Austria; [2]Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Vienna, Austria

Computer 10 **3173.** **Two-Channel High-Temperature Superconducting Array for Diffusion Tensor Imaging of Rat Spinal Cord at 7T**
Yun-Jie Li[1], Meng-Chi Hsieh[1], In-Tsang Lin[2], Xiao-Liang Zhang[3], Jyh-Horng Chen[1, 4]
[1]Graduate Institute of Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan, Taiwan; [2]Xiamen University, Xiamen, Fujian, China; [3]Department of Radiology and Biomedical imaging, University of California,, University of California, CA, United States; [4]Dept. of Electrical engineering, National Taiwan University, Taipei, Taiwan, Taiwan

Computer 11 **3174.** **Preliminary Investigation on Shielding-Ring Based Decoupling Technique for Small Monolithic RF Coils**
Zhoujian Li[1], Roberta Kriegl[2, 3], Elmar Laistler[4, 5], Marie Poirier-Quinot[1], Luc Darrasse[1], Jean-Christophe Ginefri[1]
[1]Laboratoire d'Imagerie par Résonance Magnétique Médicale et Multi-Modalités (IR4M), UMR8081 CNRS, Université Paris-Sud, Orsay, France; [2]Center for Medical Physics and Biomedical Engineering, Medical University of Vienna , Vienna, Austria; [3]MR Centre of Excellence, Medical University of Vienna, Vienna, Austria; [4]Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Vienna, Austria; [5]MR Centre of Excellence, Medical University of Vienna, Vienna, Austria

Computer 12 **3175. Comparison of Improved Breast Magnetic Resonance Guided Focused Ultrasound System with Improved Radio Frequency Phased Array Coils.**
Emilee Minalga[1], Robb Merrill[1], Dennis L. Parker[1], Allison Payne[1], J. Rock Hadley[1]
[1]UCAIR, University of Utah, Salt Lake City, UT, United States

Computer 13 **3176. Optimization of an 8-Channel Receive-Only Surface Array for Whole Brain MRI of Marmosets**
Daniel Papoti[1], Cecil Chern-Chyi Yen[1], Pascal Sati[1], Joseph Robert Guy[1], Daniel S. Reich[1], Afonso C. Silva[1]
[1]NINDS, National Institutes of Health, Bethesda, MD, United States

Computer 14 **3177. Asymmetric Transceiver Phased Array for Functional Imaging and Spectroscopy of the Visual Cortex at 9.4 T**
Nikolai I. Avdievich[1], Ioannis A. Giapitzakis[1], Anke Henning[1, 2]
[1]Max Planck Institute for Biological Cybernetics, Tübingen, Germany; [2]Institute for Biomedical Engineering, UZH and ETH Zurich, Zurich, Switzerland

Computer 15 **3178. An SNR Comparison Between a Sodium Phased Array Coil and a Single Channel Coil**
Amin Nazaran[1], Joshua D. Kaggie[2, 3], Meredith Taylor[1], Daniel J. Park[1], Grayson Tarbox[1], Rexford D. Newbould[4], Neal Bangerter[1], Glen Morrell[3]
[1]Electrical and Computer Engineering, Brigham Young University, Provo, UT, United States; [2]Physics, University of Utah, Salt Lake City, UT, United States; [3]Utah Center for Advanced Imaging Research, University of Utah, Salt Lake City, UT, United States; [4]Imanova Centre for Imaging Sciences, London, United Kingdom

Computer 16 **3179. Streamlined Construction of a Six-Channel Mouse Array Coil with 3D Printing**
Wen-Yang Chiang[1], Mary P. McDougall[1]
[1]Department of Biomedical Engineering, Texas A&M University, College Station, TX, United States

Computer 17 **3180. A Novel Compact 10-Channel Phased Array for a Dedicated 1.5T Neonate MRI System**
Wolfgang Loew[1], Yu Li[1], Ron Pratt[1], Jean Tkach[1], Charles Dumoulin[1], Randy O. Giaquinto[1]
[1]Imaging Research Center, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States

Computer 18 **3181. Active Decoupling of RF Coils: Application to 3D MRI with Concurrent Excitation and Acquisition**
Ali Caglar Ozen[1, 2], Michael Bock[1], Ergin Atalar[2]
[1]Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]Electrical and Electronics Engineering, Bilkent University, Ankara, Turkey

Computer 19 **3182. A 7T Transmit and Receive Array Combination for Simultaneous Investigation of Electrophysiology and fMRI in Non-Human Primates**
Shajan G[1], David Zsolt Balla[1], Thomas Steudel[1], Philipp Ehses[2], Hellmut Merkle[1], Nikos Logothetis[1, 3], Rolf Pohmann[1], Klaus Scheffler[1, 2]
[1]Max Planck Institute for Biological Cybernetics, Tuebingen, Baden Wuerttemberg, Germany; [2]Department of Biomedical Magnetic Resonance, University Hospital, Tuebingen, Baden Wuerttemberg, Germany; [3]University of Manchester, Manchester, United Kingdom

Computer 20 **3183. Analytical Performance Evaluation and Optimization of Resonant Inductive Decoupling (RID)**
Andre Kuehne[1, 2], Elmar Laistler[1, 2], Anke Henning[3, 4], Ewald Moser[1, 2], Nikolai I. Avdievich[3]
[1]Center for Medical Physica and Biomedical Engineering, Medical University of Vienna, Vienna, Austria; [2]MR Centre of Excellence, Medical University of Vienna, Vienna, Austria; [3]Max Planck Institute for Biological Cybernetics, Tuebingen, Germany; [4]Institute for Biomedical Engineering, UZH and ETH Zurich, Zurich, Switzerland

Computer 21 **3184. A Novel Transceiver Wired & Wireless Array Coil Assembly for MR Guided Robot Assisted Interventions and Radiosurgery Procedures**
Seunghoon Ha[1], Haoqin Zhu[1], Labros Petropoulos[1]
[1]R&D, IMRIS Inc., Minnetonka, MN, United States

Computer 22 **3185.** **Validation of a Semi-Flexible 64-Channel Receive-Only Phased Array for Pediatric Body MRI at 3T**
Tao Zhang[1, 2], Joseph Y. Cheng[1, 2], Paul D. Calderon[1], Thomas Grafendorfer[3], Greig Scott[2], Bob Rainey[3], Mark Giancola[3], Fraser Robb[3], John M. Pauly[2], Brian A. Hargreaves[1], Shreyas S. Vasanawala[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Electrical Engineering, Stanford University, Stanford, CA, United States; [3]GE Healthcare, WI, United States

Computer 23 **3186.** **A Dual-Tuned Two-Element Array for ^{1}H/^{2}H Imaging at 1 Tesla**
Scott A. Blasczyk[1], John C. Bosshard[1], Neal A. Hollingsworth[1], Brian J. Bass[1], Steven M. Wright[1]
[1]Electrical and Computer Engineering, Texas A&M University, College Station, TX, United States

Computer 24 **3187.** **Signal Combination Mode Matrix Calculation on Considering Multiregion SNR**
Zhang Qiong[1], Sun zhi guo[1], Liu Wei[1], Wang jian min[1]
[1]Siemens, ShenZhen, GuangDong, China

Electronic Poster
UHF Acquisitions: Neuro

Exhibition Hall Monday 15:15-16:15

Computer 25 **3188.** **Whole Brain 3D-FLAIR Imaging at 7T**
Eberhard Daniel Pracht[1], Daniel Brenner[1], Tony Stöcker[1, 2]
[1]German Center for Neurodegenerative Diseases (DZNE), Bonn, Germany; [2]Department of Physics and Astronomy, University of Bonn, Bonn, Germany

Computer 26 **3189.** **Proton Observed Phosphorus Editing (POPE) for *In Vivo* Detection of Phospholipid Metabolites**
Jannie P. Wijnen[1, 2], Dennis J.W. Klomp[1], Christine I.H.C Nabuurs[3], Robin A. de Graaf[4], Irene M.L. van Kalleveen[1], Wybe J.M. van der Kemp[1], Peter R. Luijten[1], Mark C. Kruit[2], Andrew Webb[2], Hermien E. Kan[2], Vincent O. Boer[1]
[1]Radiology, University Medical Centre Utrecht, Utrecht, Netherlands; [2]Radiology, Leiden University Medical Centre, Leiden, Zuid Holland, Netherlands; [3]Radiology, Maastricht University, Maastricht, Limburg, Netherlands; [4]Radiology, Yale University, New Haven, CT, United States

Computer 27 **3190.** **Zero Echo Time (ZTE) Imaging of Human Brain Tumor at 7T**
Douglas A C Kelley[1], Angela Jakary[2], Qiuting Wen[2], Yan Li[2], Sarah Nelson[2]
[1]Neuro Apps and Workflow, GE Healthcare, San Francisco, CA, United States; [2]Radiology and Biomedical Imaging, UCSF, San Francisco, CA, United States

Computer 28 **3191.** **Comparing Different Contrasts for Myelin-Related Cortical Mapping at 7T**
Roy Haast[1], Dimo Ivanov[1], Kâmil Uludağ[1]
[1]Cognitieve Neuroscience, Maastricht University, Maastricht, Limburg, Netherlands

Computer 29 **3192.** **Reduced Specific Absorption Rate (SAR) and Scan Time Using Variable Density Magnetization Transfer (VdMT) for 7T**
Se-Hong Oh[1], Wanyong Shin[1], Jongho Lee[2], Mark J Lowe[1]
[1]Imaging Institute, Cleveland Clinic Foundation, Cleveland, OH, United States; [2]Department of Electrical and Computer Engineering, Seoul National University, Seoul, Korea

Computer 30 **3193.** **RF Pulse Designs for MPRAGE at 9.4T**
Desmond Ho Yan Tse[1, 2], Daniel Brenner[3], Johannes G Ramaekers[1], Joachim E Wildberger[2], Benedikt A Poser[1]
[1]Faculty of Psychology and Neuroscience, Maastricht University, Maastricht, Netherlands; [2]Department of Radiology, Maastricht University Medical Centre, Maastricht, Netherlands; [3]German Centre for Neurodegenerative Diseases (DZNE), Bonn, Germany

Computer 31 **3194.** **Robust Tissue Segmentation of Human Brain Images Acquired with a Surface Coil at Ultrahigh Field**
Byeong-Yeul Lee[1], Wei Chen[1], Xiao-Hong Zhu[1]
[1]Center for Magnetic Resonance Research, Department of Radiology, University of Minnesota, Minneapolis, MN, United States

Computer 32 **3195. An 8-Channel Parallel Transmit System for 7T MRI Based on Custom-Built I/Q Modulators**
Sören Johst[1], Marcel Gratz[1, 2], Samaneh Shoostary[3], Klaus Solbach[3], Mark E. Ladd[1, 4], Stephan Orzada[1]
[1]Erwin L. Hahn Institute for Magnetic Resonance Imaging, University Duisburg-Essen, Essen, Germany; [2]High-field and Hybrid MR Imaging, University Hospital Essen, University Duisburg-Essen, Essen, Germany; [3]High Frequency Technology, University Duisburg-Essen, Duisburg, Germany; [4]Medical Physics in Radiology, German Cancer Research Center (dkfz), Heidelberg, Germany

Computer 33 **3196. A Parkinson's Disease ^{31}P-MRSI Study at 7T**
Silvina G. Horovitz[1], Peter Lauro[2], Pascal Sati[3], Nora Vanegas-Arroyave[2], Codrin I. Lungu[2], Mark Hallett[1]
[1]MNB, HMCS, NINDS, NIH, Bethesda, MD, United States; [2]OCD, NINDS, NIH, Bethesda, MD, United States; [3]NIB, TNU, NINDS, NIH, Bethesda, MD, United States

Computer 34 **3197. 7T MRSI Using Semi-Adiabatic Spectral-Spatial Spectroscopic Imaging (SASSI) for Improved B1-Insensitivity in Refocusing and Reduced Chemical Shift Artifact**
Rebecca Emily Feldman[1], Priti Balchandani[1]
[1]Radiology, Icahn School of Medicine at Mount Sinai, New York, United States

Computer 35 **3198. Correction of Artifacts in Ultrahigh Field T_2^* Imaging Using a Training Model for Field Probe Based B_0 Measurements**
Anders Garpebring[1, 2], Joep Wezel[1], Vincent O. Boer[3], Tijl A. van der Velden[3], Andrew G. Webb[1], Dennis W.J. Klomp[3], Matthias J. P. van Osch[1]
[1]C.J. Gorter center for high field MRI, Radiology, Leiden University Medical Center, Leiden, Netherlands; [2]Radiation Sciences, Umeå University, Umeå, Sweden; [3]Radiology, University Medical Center Utrecht, Utrecht, Netherlands

Computer 36 **3199. Simultaneous T_1 and T_2 Quantitation of the Human Brain at 7 Tesla by MR Fingerprinting**
Yun Jiang[1], Huihui Ye[2, 3], Berkin Bilgic[2], Dan Ma[1], Thomas Witzel[2], Stephen F. Cauley[2], Elfar Adalsteinsson[2, 4], Kawin Setsompop[2], Mark A. Griswold[1, 5], Lawrence L. Wald[2, 4]
[1]Department of Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Department of Radiology, Massachusetts General Hospital, Athinoula A. Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [3]Department of Biomedical Engineering, Zhejiang University, Hangzhou, Zhejiang, United States; [4]Department of Electrical Engineering and Computer Science; Harvard-MIT Division of Health Sciences, MIT, Cambridge, MA, United States; [5]Department of Radiology, Case Western Reserve University , OH, United States

Computer 37 **3200. Wide Screen Visual Stimulation: fMRI Combined with Fast GABA Detection**
Arjan D. Hendriks[1], Catalina S. Arteaga de Castro[1], Vincent O. Boer[1], Dennis W.J. Klomp[1], Natalia Petridou[1]
[1]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands

Computer 38 **3201. Towards Routine Application of Dynamic Parallel Transmission for Whole-Brain Imaging at 9.4 Tesla**
Jens Hoffmann[1, 2], G. Shajan[1], Christian Mirkes[1, 3], Tingting Shao[1], Anke Henning[1, 4], Rolf Pohmann[1], Klaus Scheffler[1, 3]
[1]High-Field Magnetic Resonance Center, Max Planck Institute for Biological Cybernetics, Tuebingen, Germany; [2]Graduate School of Neural & Behavioural Sciences, Tuebingen, Germany; [3]Department for Biomedical Magnetic Resonance, University of Tuebingen, Germany; [4]Institute for Biomedical Engineering, University and ETH Zurich, Switzerland

Computer 39 **3202. The Traveling Heads: Initial Comparisons of Multicenter Data on 7 Tesla MRI Systems**
Maximilian N. Voelker[1, 2], Oliver Kraff[1], Daniel Brenner[3], Astrid Wollrab[4], Tony Stoecker[3], David Norris[5], Mark E. Ladd[1, 6], Oliver Speck[4, 7]
[1]Erwin L. Hahn Institute for Magnetic Resonance Imaging , University of Duisburg-Essen, Essen, Germany; [2]Diagnostic and Interventional Radiology and Neuroradiology, University Hospital Essen, Essen, Germany; [3]German Center for Neurodegenerative Diseases (DZNE), Bonn, Germany; [4]Otto-von-Guericke-University, Magdeburg, Germany; [5]Erwin L. Hahn Institute for Magnetic Resonance Imaging, University of Duisburg-Essen, Essen, North Rhine-Westphalia, Germany; [6]Medical Physics in Radiology, German Cancer Research Center (dkfz), Heidelberg, Germany; [7]Leibniz Institute for Neurobiology, Magdeburg, Germany

Computer 40 **3203. Reliable GABA Spectral Editing BASING-PRESS MRS at 7T**
Yan Li[1], Bian Wei[2], Peder Larson[2], Jason C. Crane[2], Srikantan Nagarajan[2], Sarah J. Nelson[2, 3]
[1]University of California, San Francisco, CA, United States; [2]Department of Radiology and Biomedical Imaging, University of California, San Francisco, CA, United States; [3]Department of Bioengineering and Therapeutic Sciences, University of California, San Francisco, CA, United States

Computer 41 **3204. High Resolution MR Spectroscopic Imaging of the Visual Cortex at 9.4T with Minimal Chemical Shift Displacement Artefact**
Desmond H.Y. Tse[1], Vincent O. Boer[2], Valentin G. Kemper[3], Dennis W.J. Klomp[2], Jacobus F.A. Jansen[1]
[1]Radiology, Maastricht UMC, Maastricht, Netherlands; [2]Radiology, UMC Utrecht, Utrecht, Netherlands; [3]Cognitive Neuroscience FPN, Maastricht University, Maastricht, Netherlands

Computer 42 **3205. Multi-Channel B0 Crusher Coil for Lipid Suppression in MRI and MRSI**
Vincent Boer[1], Mariska Damen, Dennis Klomp
[1]Radiology, University Medical Center Utrecht, Utrecht, Netherlands

Computer 43 **3206. 3D Eigenmodes Optimizations for 3D Imaging at 7T**
Yujuan Zhao[1], Narayanan Krishnamurthy[1], Sossena Wood[1], Tiejun Zhao[2], Shailesh B. Raval[1], Tamer S. Ibrahim[1]
[1]University of Pittsburgh, Pittsburgh, PA, United States; [2]Siemens Medical Solutions USA, Pittsburgh, PA, United States

Computer 44 **3207. Laminar Variation of Population Receptive Field Center-Surround Properties in Human Primary Visual Cortex Revealed by 7T fMRI**
Alessio Fracasso[1], Serge O. Dumoulin[1], Natalia Petridou[2]
[1]Experimental Psychology, Helmholtz institute, Utrecht University, Utrecht, Netherlands; [2]Radiology, Imaging Division, University Medical Center, Utrecht, Netherlands

Computer 45 **3208. High-Resolution 3D EPI at 9.4 Tesla with Parallel Transmit B1+ Field Homogenisation**
Benedikt A Poser[1], Daniel Brenner[2], Desmond H Y Tse[1, 3]
[1]Faculty of Psychology and Neuroscience, Maastricht University, Maastricht, Netherlands; [2]German Centre for Neurodegenerative Diseases (DZNE), Bonn, Germany; [3]Department of Radiology, Maastricht University, Maastricht, Netherlands

Computer 46 **3209. 7T Multi-Slab Whole-Head Homogenous and Low SAR T2 Acquisitions with Limited RF Power Amplifiers Capabilities**
Narayanan Krishnamurthy[1], Yujuan Zhao[2], Shailesh Raval[2], Junghwan Kim[2], Sossena Wood[2], Tales Santini[2], Tiejun Zhao[3], Tamer Ibrahim[2]
[1]University of Pittsburgh, Pittsburgh, PA, United States; [2]University of Pittsburgh, PA, United States; [3]Siemens Medical Solutions, PA, United States

Computer 47 **3210. Systematic Investigation of Influence Factor on Parallel Transmit Pulse Performance at 9.4 Tesla**
Tingting Shao[1], Nikolai Avdievich[1], Paul Chang[1], Jens Hoffmann[1], Klaus Scheffler[1], Anke Henning[1, 2]
[1]Max Planck Institute for Biological Cybernetics, Tübingen, Baden-Württemberg, Germany; [2]Institute for Biomedical Engineering, UZH and ETH Zurich, Zurich, Switzerland

Computer 48 **3211. Expected Homogeneity Gain and Hardware Requirements for Slice-Wise 3rd Order Dynamic Shim Updating for fMRI**
Ariane Fillmer[1], Anke Henning[2]
[1]Institute for Biomedical Engineering, UZH and ETH Zurich, Zurich, Switzerland; [2]Max Planck Institute for Biological Cybernetics, Tuebingen, Germany

Electronic Poster
Safety in MRI

Exhibition Hall Monday 15:15-16:15

Computer 49 **3212. Q Matrix Approach to Control Implant Heating by Transmit Array Coils**
Frank Seifert[1], Gerd Weidemann[1], Bernd Ittermann[1]
[1]Physikalisch-Technische Bundesanstalt (PTB), Braunschweig und Berlin, Germany

Computer 50 **3213. Local SAR Elevations in the Human Head Induced by High-Permittivity Pads at 7 Tesla**
ISMRM MERIT AWARD magna cum laude
Thomas M. Fiedler[1], Mark E. Ladd[1, 2], Andreas K. Bitz[1]

[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany; [2]Erwin L. Hahn Institute for Magnetic Resonance Imaging, University Duisburg-Essen, Essen, Germany

Computer 51 **3214. A Comparison Between Three-Point Dixon Sequences and Label Fusion Techniques for Water-Fat Separation in High-Field MRI Local SAR Estimation**

Angel Torrado-Carvajal[1, 2], Esra A. Turk[2, 3], Joaquin L. Herraiz[2, 3], Yigitcan Eryaman[2, 4], Juan A. Hernandez-Tamames[1, 2], Elfar Adalsteinsson[5, 6], Larry L. Wald[4, 6], Norberto Malpica[1, 2]
[1]Medical Image Analysis and Biometry Lab, Universidad Rey Juan Carlos, Mostoles, Madrid, Spain; [2]Madrid-MIT M+Vision Consortium, Madrid, Spain; [3]Research Laboratory of Electronics, Massachusetts Institute of Technology, Cambridge, MA, United States; [4]Martinos Center for Biomedical Imaging, Dept. of Radiology, MGH, Charlestown, MA, United States; [5]Dept. of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA, United States; [6]Harvard-MIT Health Sciences and Technology, Massachusetts Institute of Technology, Cambridge, MA, United States

Computer 52 **3215. Local SAR Estimation for Parallel RF Transmit at 7T Using Directional Couplers**

Matthew Restivo[1], C.A.T van den Berg[1], Alexander Raaijmakers[1], Peter Luijten[1], Hans Hoogduin[1]
[1]University Medical Center Utrecht, Utrecht, Netherlands

Computer 53 **3216. Anatomical Models of Pregnant Women in 3T PTx Body Coils: Evaluation of SAR and B1+ Optimization in Various Imaging Positions**

Manuel Murbach[1], Esra Neufeld[1], Eugenia Cabot[1], Earl Zastrow[1], Juan Corcoles[2], Wolfgang Kainz[3], Niels Kuster[1, 4]
[1]ITIS Foundation, Zurich, Switzerland; [2]Department of Electronic and Communication Technology, Universidad Autónoma de Madrid (UAM), Madrid, Spain; [3]Center for Devices and Radiological Health (CDRH), US Food and Drug Administration (FDA), Silver Spring, MD, United States; [4]Swiss Federal Institute of Technology (ETH), Zurich, Switzerland

Computer 54 **3217. Multi-Body-Model Method for Design of Mismatch-Insensitive SAR-Aware Parallel Transmit RF Pulses**

Mihir Pendse[1], Brian Rutt[1]
[1]Radiology, Stanford University, Stanford, CA, United States

Computer 55 **3218. Temperature Sensor Implant for Analysis of RF Safety of Active Implantable Medical Devices Under MRI**

Berk Silemek[1, 2], Volkan Acikel[1, 2], Ergin Atalar[1, 2]
[1]Bilkent University, Ankara, Turkey; [2]Umram, Ankara, Turkey

Computer 56 **3219. A Phantom Designed Specifically for Local SAR Validation**

Matthew Restivo[1], Ronald Mooiweer[1], C.A.T van den Berg[1], Alexander Raaijmakers[1], Frank Simonis[1], Peter Luijten[1], Hans Hoogduin[1]
[1]University Medical Center Utrecht, Utrecht, Netherlands

Computer 57 **3220. An Approach to Temperature-Based Virtual Observation Points for Safety Assurance and Pulse Design**

Giuseppe Carluccio[1, 2], Cem Murat Deniz[1, 2], Christopher Michael Collins[1, 2]
[1]Radiology, Center for Advanced Imaging Innovation and Research (CAI2R), New York University School of Medicine, New York, United States; [2]Radiology, Bernard and Irene Schwartz Center for Biomedical Imaging, New York University, New York, United States

Computer 58 **3221. Torque and Translational Force Estimation for Ferromagnetic Objects: The Saturation Effect**

Vahid Ghodrati[1], Abbas Nasiraei Moghaddam[1, 2]
[1]BME, Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran; [2]School of Cognitive Sciences, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran

Computer 59 **3222. Experiments and Analysis of Virtual Observation Points at 7T**

Yujuan Zhao[1], Tiejun Zhao[2], Tamer Ibrahim[1]
[1]University of Pittsburgh, Pittsburgh, PA, United States; [2]Siemens Medical Solutions USA, Pittsburgh, PA, United States

Computer 60 **3223.** **Breast Tissue Expanders with Magnetic Ports: Clinical Experience at 1.5-Tesla**
Nanda Deepa Thimmappa[1], Christina Y. Ahn[2], Silvina P. Dutruel[1], Joshua L. Levine[3], Srikanth Reddy Boddu[1], Martin R. Prince[1]
[1]Radiology, Weill Cornell Medical College, New York, NY, United States; [2]NY Langone Medical Center, Department of Plastic Surgery, New York, United States; [3]Department of Plastic Surgery, New York Eye and Ear Infirmary of Mount Sinai, New York, United States

Computer 61 **3224.** **An Algorithm for Maximum-SAR Targeted RF Hyperthermia**
Mihir Pendse[1], Brian Rutt[1]
[1]Radiology, Stanford University, Stanford, CA, United States

Computer 62 **3225.** **Effect of 3T MRI Noise on Adults Hearing Observed by the Dynamic Auditory Brainstem Response Test**
Huan Li[1], Yan An[1], Qinli Sun[1], Yanyan Li[1], Pan Cao[1], Miaomiao Wang[1], Jianxin Guo[1], Jian Yang[1]
[1]Department of Radiology, The First Affiliated Hospital of Medical College,Xi'an Jiaotong University, Xi'an, Shaanxi, China

Computer 63 **3226.** **RF-Induced Heating in MRI of Tissue Around an Aneurysm Clip Near the Middle Cerebral Artery at 7 T Under Consideration of the Pennes Bioheat Equation**
Yacine Noureddine[1, 2], Oliver Kraff[1], Mark E. Ladd[1, 3], Karsten Wrede[4], Gregor Schaefers[2], Andreas K. Bitz[3]
[1]Erwin L. Hahn Institute for MRI, University Duisburg-Essen, Essen, NRW, Germany; [2]MR:comp GmbH, MR Safety Testing Laboratory, Gelsenkirchen, NRW, Germany; [3]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, BW, Germany; [4]Clinic for Neurosurgery, University Hospital Essen, Essen, NRW, Germany

Computer 64 **3227.** **MRI Planning for SAR Management in PTx Systems**
Joaquin L. Herraiz[1], Yigitcan Eryaman, [12], Esra Abaci Turk[1], Angel Torrado-Carvajal, [13], Adrian Martin, [14], Emanuele Schiavi, [14], Bastien Guerin[5], Elfar Adalsteinsson, [16], Lawrence L. Wald[5], Juan A. Hernandez-Tamames, [13], Norberto Malpica, [13]
[1]Madrid-MIT M+Vision Consortium in RLE, Massachusetts Institute of Technology, Cambridge, MA, United States; [2]Center for Magnetic Resonance Research,Department of Radiology, University of Minnesota, Minneapolis, MN, United States; [3]Medical Image Analysis and Biometry Laboratory, Universidad Rey Juan Carlos, Madrid, Spain; [4]Dept. of Applied Mathematics, Universidad Rey Juan Carlos, Mostoles, Madrid, Spain; [5]Martinos Center for Biomedical Imaging, Dept. of Radiology, MGH, Charlestown, MA, United States; [6]Dept. of Electrical Engineering and Computer Science, Harvard-MIT Health Sciences and Technology, Massachusetts Institute of Technology, Cambridge, MA, United States

Computer 65 **3228.** **Fast, Thermal Dose-Based Exposure Safety Supervision**
Esra Neufeld[1], Manuel Murbach[1], Niels Kuster[1, 2]
[1]IT'IS Foundation for Research on Information Technologies in Society, Zurich, Switzerland; [2]Swiss Federal Institute of Technology (ETHZ), Zurich, Switzerland

Computer 66 **3229.** **Signal Changes in Dentate Nuclei with 10 or More Gadolinium-Based Contrast Administrations: Comparison of Linear Versus Macrocytic Contrast Agents**
Daisy Q. Huang[1], Martin Prince[1], George Shih[1], Yan Cao[1]
[1]Radiology, New York Presbyterian Hospital/Weill Cornell, NY, NY, United States

Computer 67 **3230.** **Radiofrequency-Induced Heating of Intracranial Stereo-EEG Electrodes During MRI: A Phantom Study**
Annie Papadaki[1, 2], David Carmichael[3], Mark James White[1, 2], Hoskote Chandrashekar[1], Tarek Yousry[1, 2], Beate Diehl[4, 5], Louis Lemieux[4], John Stephen Thornton[1, 2]
[1]Lysholm Department of Neuroradiology, National Hospital for Neurology and Neurosurgery, UCLH, London, United Kingdom; [2]Department of Brain Repair and Rehabilitation, UCL Institute of Neurology, London, United Kingdom; [3]Imaging and Biophysics Unit, UCL Institute of Child Health, London, United Kingdom; [4]Department of Clinical and Experimental Epilepsy, UCL Institute of Neurology, London, United Kingdom; [5]Department of Neurophysiology, National Hospital for Neurology and Neurosurgery, UCLH, London, United Kingdom

Computer 68 **3231.** **Trial of Safe Working Procedure Against Occupational SMF Exposure - Evaluation of Its Effectiveness in Occupational SMF Exposure Levels and Work Performances Among 3 T MRI System Users -**
Sachiko Yamaguchi-Sekino[1], Masaki Sekino[2], Toshiharu Nakai[3]
[1]National Institute of Occuaptional Safety and Health, Japan, Kawasaki, Kanagawa, Japan; [2]Graduate School of Engineering, The University of Tokyo, Tokyo, Japan; [3]Neuroimaging & Informatics,, National Center for Geriatrics and Gerontology, Aichi, Japan

Computer 69 **3232. Effect of Cranial Fixation Plates on Brain MR Imaging at 7T in Neurosurgical Patients**

Bixia Chen[1, 2], Tobias Schoemberg[1, 2], Oliver Kraff[1], Andreas K. Bitz[1, 3], Harald H. Quick[1, 4], Mark Edward Ladd[1, 3], Ulrich Sure[2], Karsten Henning Wrede[1, 2]
[1]Erwin L. Hahn Institute for Magnetic Resonance Imaging, University Duisburg-Essen, Essen, NRW, Germany; [2]Department of Neurosurgery, University Hospital Essen, University Duisburg-Essen, Essen, NRW, Germany; [3]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, BW, Germany; [4]High Field and Hybrid MR Imaging, University Hospital Essen, University Duisburg-Essen, Essen, NRW, Germany

Computer 70 **3233. RF Safety Assessment of a Bilateral 4-Channel Tx/Rx 7T Breast Coil**

Thomas M. Fiedler[1], Aaron S. Kujawa[1], Frank Resmer[2], Patrick Stein[2], Titus Lanz[2], Mark E. Ladd[1, 3], Andreas K. Bitz[1]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany; [2]RAPID Biomedical GmbH, Rimpar, Bavaria, Germany; [3]Erwin L. Hahn Institute for Magnetic Resonance Imaging, University Duisburg-Essen, Essen, Germany

Computer 71 **3234. Direct SAR Mapping by Thermoacoustic Imaging: Experimental Proof-Of-Concept**

Simone Angela Winkler[1], Paul Picot[2], Michael Thornton[2], Brian K. Rutt[1]
[1]Dept. of Radiology, Stanford University, Stanford, CA, United States; [2]Endra Inc., Ann Arbor, MI, United States

Computer 72 **3235. An Investigation on IEC Head SAR Limit on Orbit Heating**

Xin Chen[1], Charles Poole[2], Michael Steckner[1], Robert Brown[2]
[1]MR, Toshiba Medical Research Institute USA, Inc., Mayfield Village, OH, United States; [2]Department of Physics, Case Western Reserve University, Cleveland, OH, United States

Electronic Poster
Relaxometry-Technical Developments

Exhibition Hall Monday 16:30-17:30

Computer 1 **3236. MR Fingerprinting and B0 Inhomogeneities**

Thomas Christen[1], Wendy W. Ni[1], Samantha Holdsworth[1], Murat Aksoy[1], Roland Bammer[1], Michael Moseley[1], Greg Zaharchuk[1]
[1]Department of Radiology, Stanford University, Stanford, CA, United States

Computer 2 **3237. Isotropic T2 Mapping Using a 3D Radial FSE (Or TSE) Pulse Sequence**

ISMRM MERIT AWARD summa cum laude

Mahesh Bharath Keerthivasan[1], Ali Bilgin[1, 2], Diego R. Martin[2], Maria I. Altbach[2]
[1]Electrical and Computer Engineering, University of Arizona, Tucson, AZ, United States; [2]Medical Imaging, University of Arizona, Tucson, AZ, United States

Computer 3 **3238. MIRACLE: Motion-Insensitive RApid Configuration ReLaxomEtry**

Damien Nguyen[1], Oliver Bieri[1]
[1]Radiological Physics, Dep. of Radiology, University of Basel Hospital, Basel, Switzerland

Computer 4 **3239. Quantitative Assessment of Hematocrit, Hemoglobin Concentration and Oxygenation Effects on the Longitudinal Relaxation Time of Blood**

Wenbo Li[1, 2], Ksenija Grgac[1, 2], Alan Huang[1, 3], Qin Qin[1, 2], Nirbhay Yadav[1, 2], Peter Van Zijl[1, 2]
[1]Department of Radiology, Johns Hopkins University School of Medicine, Balitmore, MD, United States; [2]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States; [3]Current Address: Philips Healthcare, Best, Netherlands

Computer 5 **3240. Analytical Correction of Banding Artifacts in Driven Equilibrium Single Pulse Observation of T2 (DESPOT2)**

Jean-David Jutras[1], Keith Wachowicz[1, 2], Nicola DeZanche[1, 2]
[1]Oncology, University of Alberta, Edmonton, AB, Canada; [2]Medical Physics, Cross Cancer Institute, Edmonton, AB, Canada

Computer 6 **3241. Biexponential T_1 Relaxation at 7T: Characterization and Impact on T_1 Mapping**

James A. Rioux[1], Ives R. Levesque[1, 2], Brian K. Rutt[1]

[1]Radiology, Stanford University, Stanford, CA, United States; [2]Medical Physics Unit, and Research Institute of the McGill University Health Centre, McGill University, Montreal, QC, Canada

Computer 7 3242. Estimating Microvessel Spacing or Cell Sizes Using $R_{1\rho}$ Dispersion
John Thomas Spear[1, 2], Xiaoyong Zhang[2, 3], John Gore[2, 3]
[1]Physics and Astronomy, Vanderbilt University, Nashville, TN, United States; [2]Vanderbilt University Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [3]Department of Radiology, Vanderbilt University, Nashville, TN, United States

Computer 8 3243. Measurement and Theoretical Description of Spin-Echo T2 Anisotropy in the Human Brain
Michael John Knight[1], Bryony Wood[1], Elizabeth Coulthard[2], Risto Kauppinen[1]
[1]School of experimental psychology, University of Bristol, Bristol, Avon, United Kingdom; [2]Southmead Hospital, University of Bristol, Bristol, Avon, United Kingdom

Computer 9 3244. Differentiating Microscopic Field Inhomogeneity Induced Relaxation from R_2 and R_2* Relaxations with Magnetic Field Correlation Imaging
Chu-Yu Lee[1, 2], Xingju Nie[1, 2], Jens H. Jensen[1, 2], Vitria Adisetiyo[1, 2], Qingwei Liu[3], Joseph A. Helpern[1, 2]
[1]Department of Radiology and Radiology Science, Medical University of South Carolina, Charleston, SC, United States; [2]Center for Biomedical Imaging, Medical University of South Carolina, Charleston, SC, United States; [3]Neuroimaging research, Barrow Neurological Institute, Phoenix, AZ, United States

Computer 10 3245. Assessment of T1rho Sensitivity to PH and Glucose for Human Brain Imaging at 3T
Nana K. Owusu[1], Casey P. Johnson[2], William R. Kearney[2], John A. Wemmie[3, 4], Vincent A. Magnotta[2]
[1]Biomedical Engineering, University of Iowa, Iowa City, IA, United States; [2]Radiology, University of Iowa, Iowa City, IA, United States; [3]Psychiatry, University of Iowa, Iowa City, IA, United States; [4]Veterans Affairs Medical Center, Iowa City, IA, United States

Computer 11 3246. Monte Carol Modeling of the Non-Monoexponential CPMG Relaxation in Iron Overload
Chu-Yu Lee[1, 2], Jens H. Jensen[1, 2]
[1]Department of Radiology and Radiology Science, Medical University of South Carolina, Charleston, SC, United States; [2]Center for Biomedical Imaging, Medical University of South Carolina, Charleston, SC, United States

Computer 12 3247. B1 and B0 Sensitivity of Spin-Lock Preparation Pulses for Whole-Brain Quantitative T1rho Mapping
Casey P. Johnson[1], Vincent A. Magnotta[1]
[1]Radiology, University of Iowa, Iowa City, IA, United States

Computer 13 3248. B1+ Inhomogeneity Compensated MRF Using Simultaneous AFI
Taehwa Hong[1], Min-Oh Kim[1], Dongyeob Han[1], Dosik Hwang[1], Dong-Hyun Kim[1]
[1]Electrical & Electronic Engineering, Yonsei University, Seodamun-gu, Seoul, Korea

Computer 14 3249. Measurement of T2* and T1 of Bound and Pore Water in Cortical Bone Using UTE Sequences
Jun Chen[1], Michael Carl[2], Hongda Shao[1], Qun He[1], Eric Chang[1, 3], Christine B. Chung[1, 3], Graeme M. Bydder[1], Jiang Du[1]
[1]Radiology, University of California, San Diego, CA, United States; [2]GE Healthcare, San Diego, CA, United States; [3]Department of Radiology, VA San Diego Healthcare System, San Diego, CA, United States

Computer 15 3250. Variable Flip Angle T1 Mapping in the Human Brain with Reduced T2 Sensitivity Using Fast RF-Spoiled Gradient Echo Imaging
Rahel Heule[1], Carl Ganter[2], Oliver Bieri[1]
[1]Division of Radiological Physics, Department of Radiology, University of Basel Hospital, Basel, Switzerland; [2]Department of Radiology, Klinikum rechts der Isar, Technische Universität München, Munich, Germany

Computer 16 3251. Accurate T2-Mapping with CPMG Prepared Turbo-Flash Sequence
Kecheng Liu[1], Dan Ma[2], Tiejun Zhao[1], Mark Griswold[2]
[1]Siemens Medical Solutions USA, Inc., Malvern, PA, United States; [2]Case Western Reserved University, Cleveland, OH, United States

Computer 17 **3252. Fast and Robust 3D T1 Mapping Using Spiral Gradient Shape and Continuous Radio-Frequency Excitation at 7 T : Application on Cardiac Manganese Enhanced MRI (MEMRI) in Mice**
Charles Robert Castets[1], Emeline Julie Ribot[1], Aurélien Julien Trotier[1], William Lefrançois[1], Jean-Michel Franconi[1], Sylvain Miraux[1]
[1]RMSB - UMR5536, CNRS - Université de Bordeaux, Bordeaux, Aquitaine, France

Computer 18 **3253. Application of Acceleration Methods to Qmap and Synthetic MR Imaging**
Ken-Pin Hwang[1, 2], Kevin King[3], Peng Lai[3], Wolfgang Stefan[2], Christopher McClellan[2], Ersin Bayram[1], Ajit Shankaranarayanan[3]
[1]Global MR Applications and Workflow, GE Healthcare, Houston, TX, United States; [2]Department of Imaging Physics, The University of Texas MD Anderson Cancer Center, Houston, TX, United States; [3]Global MR Applications and Workflow, GE Healthcare, Waukesha, WI, United States

Computer 19 **3254. On the Motion-Robustness of TOWERS (T-One with Enhanced Robustness and Speed)**
Cihat Eldeniz[1], Jürgen Finsterbusch[2], Weili Lin[1], Hongyu An[1]
[1]University of North Carolina at Chapel Hill, Chapel Hill, NC, United States; [2]Universitätsklinikum Hamburg-Eppendorf, Hamburg, Germany

Computer 20 **3255. Efficient Maximum Likelihood Estimation of T_1, T_2*, and Flip Angle Error Using Variable-Length Echo Trains in Combined AFI and FLASH Experiments**
M. Dylan Tisdall[1, 2], André J. W. van der Kouwe[1, 2]
[1]Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States; [2]Radiology, Harvard Medical School, Boston, MA, United States

Computer 21 **3256. Efficient 2D MRI Relaxometry Via Compressed Sensing**
Ruiliang Bai[1, 2], Alexander Cloninger[3], Wojciech Czaja[4], Peter J. Basser[1]
[1]Section on Tissue Biophysics and Biomimetics, National Institutes of Health, Bethesda, MD, United States; [2]Biophysics Program, University of Maryland, College Park, Marland, United States; [3]Applied Mathematics Program, Yale University, New Haven, CT, United States; [4]Department of Mathematics, University of Maryland, College Park, MD, United States

Computer 22 **3257. Application of Compressed Sensing to 2D and 3D Relaxometry and Related Experiments**
Hasan Celik[1], Ariel Hafftka[2], Alexander Cloninger[3], Wojciech Czaja[2], Richard G. Spencer[1]
[1]National Institute on Aging, National Institutes of Health, Baltimore, MD, United States; [2]Department of Mathematics, University of Maryland, College Park, MD, United States; [3]Applied Mathematics Program, Yale University, New Haven, CT, United States

Computer 23 **3258. R2* Estimation Performance in Iron-Overloaded Livers: Fit First or Average First?**
Debra E. Horng[1, 2], Diego Hernando[1], Scott B. Reeder[1, 2]
[1]Radiology, University of Wisconsin-Madison, Madison, WI, United States; [2]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States

Computer 24 **3259. Explicit Modeling of SPGR Signals Using Extended Phase Graphs in DESPOT Style Relaxometry - A Dictionary Approach**
Rui Pedro A. G. Teixeira[1, 2], Shaihan J. Malik[1, 2], Joseph V. Hajnal[1, 2]
[1]Center for the Developing Brain, King's College London, London, United Kingdom; [2]Division of Imaging Sciences and Biomedical Engineering, King's College London, London, United Kingdom

Electronic Poster
Relaxometry Applications

Exhibition Hall Monday 16:30-17:30

Computer 25 **3260. Heat Induced Contrast Mechanisms in MRI: *In Vivo* Tissue Characterization by MR Thermal Response**
Matthew Tarasek[1], Oguz Akin[2], Jeannette Christine Roberts[3], Tom Foo[1], Desmond T.B. Yeo[1]
[1]MRI, GE Global Research, Niskayuna, NY, United States; [2]Radiology, MSKCC, New York, NY, United States; [3]Imaging & Physiology Lab, GE Global Research, Niskayuna, NY, United States

Computer 26 **3261.** **IR-MRI Layers of the Visual Cortex in Congenitally Blind Subjects**
Daniel Barazany[1, 2], Ella Striem-Amit[3], Shani Ben Amitay[1], Amir Amedi[3], Yaniv Assaf[1]
[1]Neurobiology, Tel Aviv University, Tel Aviv, Israel; [2]CUBRIC School of Psychology, Cardiff University, Cardiff, United Kingdom; [3]Medical Neurobiology, The Hebrew University of Jerusalem, Jerusalem, Israel

Computer 27 **3262.** **Quantification of Fluid Accumulation in IP Space of Mice Using Whole-Body NMR**
Lina Avancini Colucci[1], Matthew Li[1], Michael J. Cima[2]
[1]Health Sciences and Technology (HST), MIT, Cambridge, MA, United States; [2]Materials Science and Engineering, MIT, Cambridge, MA, United States

Computer 28 **3263.** **Synthetic MP-RAGE Anatomies with Pure T1-Weighting Improve the Detectability of Brain Tumors**
Ulrike Noeth[1], Elke Hattingen[2], Oliver Baehr[3], Julia Tichy[3], Ralf Deichmann[1]
[1]Brain Imaging Center (BIC), Goethe University Frankfurt/Main, Frankfurt/Main, Germany; [2]Institute of Neuroradiology, University Hospital Frankfurt/Main, Germany; [3]Dr Senckenberg Institute of Neurooncology, Goethe University Frankfurt/Main, Germany

Computer 29 **3264.** **MRI Properties of Cerebrospinal Fluid for Assessment in Neurodegenerative Diseases**
Alexia Daoust[1], Stephen Dodd[1], Govind Nair[1], Steven Jacobson[1], Daniel S. Reich[1], Alan Koretsky[1]
[1]NINDS, LFMI, NIH, Bethesda, MD, United States

Computer 30 **3265.** **Relaxation Rate Enhancement from 1.5T to 3T in Iron-Loaded Organs**
Kristin Toy[1], Eamon Doyle, [12], Thomas Coates[3], John C. Wood[1, 2]
[1]Cardiology, Children's Hospital of Los Angeles, Los Angeles, CA, United States; [2]Biomedical Engineering, University of Southern California, Los Angeles, CA, United States; [3]Hematology-Oncology, Children's Hospital of Los Angeles, Los Angeles, CA, United States

Computer 31 **3266.** **R1 Determination as an Iron Quantification Method at 3T**
Kristin Toy[1], Eamon Doyle[2], Thomas Coates[3], John C. Wood[1]
[1]Cardiology, Children's Hospital of Los Angeles, Los Angeles, CA, United States; [2]Biomedical Engineering, University of Southern California, Los Angeles, CA, United States; [3]Hematology-Oncology, Children's Hospital of Los Angeles, Los Angeles, CA, United States

Computer 32 **3267.** **Blood Serum Demonstrates Antioxidative Mechanism: A Magnetic Resonance Relaxation Studies**
Lech Wiktor Skorski[1], Dorota Wierzuchowska[2], Barbara Blicharska[1]
[1]Radiospectroscopy, Jagiellonian University, Krakow, Malopolskie, Poland; [2]Pedagogical University, Krakow, Malopolskie, Poland

Computer 33 **3268.** **Non-Linear Relationship Between Estimated Liver Iron Concentration and R2***
Erik M. Akkerman[1], Jurgen H. Runge[1], Marian A. Troelstra[1], Aart J. Nederveen[1], Jaap Stoker[1]
[1]Radiology, Academic Medical Centre, Amsterdam, North Holland, Netherlands

Computer 34 **3269.** **Corn-Starch Solution: A Phantom with a Short T2/T1 Ratio (T2*/T1)**
Roberto Salvati[1, 2], Eric Hitti[1, 2], Herve Saint-Jalmes[1, 2], Robert Mulkern[3, 4], Giulio Gambarota[1, 2]
[1]Université de Rennes 1, LTSI, Rennes, France; [2]INSERM, UMR 1099, Rennes, France; [3]Department of Radiology, Boston Children's, Boston, MA, United States; [4]Harvard Medical School, Boston, MA, United States

Computer 35 **3270.** **Comparison of Concentration-Dependent Signal Intensities of MRI Contrast Media Solutions Obtained at Different Pulse Sequences at 3T and 7T**
Thomas Frenzel[1], Pavol Szomolanyi[2], Iris Noebauer-Huhmann[2], Martin Rohrer[1], Gregor Jost[1], Siegfried Trattnig[2]
[1]Bayer Healthcare, Berlin, Germany; [2]High Field MR Centre, Department of Biomedical Imaging and Image-Guided Therapy, Medical University of Vienna / Vienna General Hospital, Vienna, Austria

Computer 36 **3271.** **Relationship Between Liver R1, R2, and R2* at 1.5T**
Kristin Toy[1], Eamon Doyle[2], Thomas Coates[3], John C. Wood[1]

[1]Cardiology, Children's Hospital of Los Angeles, Los Angeles, CA, United States; [2]Biomedical Engineering, University of Southern California, Los Angeles, CA, United States; [3]Hematology-Oncology, Children's Hospital of Los Angeles, Los Angeles, CA, United States

Computer 37 **3272. Correction for T1 Effects on MRI Estimation of Muscle Sodium Levels**
Ping Wang[1], Isaac V Manzanera Esteve[1], Charles Nockowski[2], John C. Gore[1]
[1]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States; [2]Philips Healthcare Technical Support at Vanderbilt, Nashville, TN, United States

Computer 38 **3273. Excretion Rate and Distribution Volumes in Common Marmoset Monkeys After Slow and Fast Injection of Gadobutrol**
Gunther Helms[1, 2], Christina Schlumbohm[3], Enrique Garea-Rodriguez[4, 5], Eberhard Fuchs[5]
[1]Medical Radiation Physics, Lund University, Lund, Scania, Sweden; [2]Cognitive Neurology, Göttingen University Medical Center, Göttingen, Lower Saxony, Germany; [3]Encepharm Inc., Göttingen, Lower Saxony, Germany; [4]Neuroanatomy, Albert-Ludwigs-University Freiburg, Freiburg, Badenia, Germany; [5]Clinical Neurobiology Group, German Primate Center, Göttingen, Lower Saxony, Germany

Computer 39 **3274. Riboflavin (Vitamin B2) May Be Used as a Potential Chelate in Wilson Disease: Magnetic Resonance Relaxation Study**
Lech Wiktor Skorski[1], Barbara Blicharska[2]
[1]Radiospectroscopy, Jagiellonian University, Krakow, Malopolskie, Poland; [2]Radiospectroscopy, Jagiellonian University, Malopolskie, Poland

Computer 40 **3275. Investigating the Properties of Silk Formation in Bombyx Mori Silkworms Using T1 and T2 Image Maps.**
Steven Reynolds[1], Peter R. Laity[2], Ben Curie[1], Chris Holland[2], Martyn N. Paley[1]
[1]Academic Unit of Radiology, University of Sheffield, Sheffield, South Yorkshire, United Kingdom; [2]Department Materials Science and Engineering, University of Sheffield, Sheffield, South Yorkshire, United Kingdom

Computer 41 **3276. Thyroid T1 Value Increase in Patients with Hypothyroidism**
Min Liu[1], Fangfang Yu[1], Guang Wang[2], Tianjing Zhang[3], Jing An[3]
[1]the department of Radiology, Beijing Chaoyang Hospital of Capital Medical University, Bei Jing, China; [2]the department of Endocrinology, Beijing Chaoyang Hospital of Capital Medical University, Bei Jing, China; [3]MR Collaborations NE Asia, Siemens Healthcare, Bei Jing, China

Computer 42 **3277. Myelin and More: McDESPOT Applied to Post Mortem Multiple Sclerosis Spinal Cord**
Amy R. McDowell[1], Tobias C. Wood[2], Natalia Petrova[1], Daniele Carassiti[1], Marc Miquel[3], David Thomas[4], Gareth J. Barker[2], Klaus Schmierer[5, 6]
[1]Blizard Institute, Queen Marys University of London, London, United Kingdom; [2]Neuroimaging, King's College London, London, United Kingdom; [3]Clinical Physics, Barts Health NHS Trust, London, United Kingdom; [4]UCL Institute of Neurology, London, United Kingdom; [5]Barts and The London School of Medicine & Dentistry, Blizard Institute, London, Greater London, United Kingdom; [6]Neurology, Barts Health NHS Trust, London, Greater London, United Kingdom

Computer 43 **3278. A Fast Method for T1 and T2 Mapping of Cerebrospinal Fluid at 7T**
Jolanda M. Spijkerman[1], Esben T. Petersen[1, 2], Peter Luijten[1], Jeroen Hendrikse[1], Jaco J. Zwanenburg[1]
[1]Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]Radiotherapy, University Medical Center Utrecht, Utrecht, Netherlands

Computer 44 **3279. High-Resolution T1 Mapping of the Mouse Brain Using MP2RAGE at 14.1T**
Nathalie Just[1], Luc Driancourt[1], Rolf Gruetter[1, 2]
[1]CIBM-AIT, EPFL, Lausanne, Switzerland; [2]Department of Radiology, Universities of Lausanne and Geneva, Lausanne and Geneva, NA, Switzerland

Computer 45 **3280. Quantification of Myelin Degeneration in Multiple Sclerosis Within Clinical Scan Times.**
L. Soustelle[1, 2], O. Commowick[1], E. Bannier[1, 3], C. Barillot[1]
[1]Unité VISAGES U746 INSERM-INRIA, IRISA UMR CNRS 6074, University of Rennes , Rennes, France; [2]Université de Strasbourg, CNRS, ICube, FMTS, Strasbourg, France; [3]Radiology Dept., University Hospital of Rennes, F-35043 Rennes, France

Computer 46 **3281. Quantitative T_2 and T_2* Relaxometry of Hippocampal Subfields**
Md Nasir Uddin[1], Yushan Huang[2], Nikolai V. Malykhin[1], [2], Alan H. Wilman[1]
[1]Biomedical Engineering, University of Alberta, Edmonton, Alberta, Canada; [2]Centre for Neuroscience, University of Alberta, Edmonton, Alberta, Canada

Computer 47 **3282. Reproducibility and Sensitivity of T_2* Measured in Patients with Squamous Cell Carcinoma of the Head and Neck at 3T**
Rafal Panek[1], Liam Welsh[1], Maria A. Schmidt[1], Alex Dunlop[1], Kate L. Newbold[1], Kee Wong[1], Angela M. Riddell[1], Dow-Mu Koh[1], Dualta Mcquaid[1], Shreerang A. Bhide[1], Kevin J. Harrington[2], Christopher M. Nutting[2], Georgina Hopkinson[3], Cheryl Richardson[3], Simon P. Robinson, Martin O. Leach[1]
[1]Royal Marsden NHS FT and Institute of Cancer Research, Sutton, Surrey, United Kingdom; [2]Royal Marsden NHS FT and Institute of Cancer Research, London, United Kingdom; [3]Royal Marsden NHS FT, London, United Kingdom

Computer 48 **3283. 3D Cine T1 Mapping Using a Stack-Of-Spirals Sampling Scheme and a Look-Locker Inversion Recovery Preparation at 7T : Application on Small Animal Cardiac Imaging.**
Charles Robert Castets[1], William Lefrançois[1], Aurélien Julien Trotier[1], Emeline Julie Ribot[1], Jean-Michel Franconi[1], Sylvain Miraux[1]
[1]RMSB - UMR5536, CNRS - Université de Bordeaux, Bordeaux, Aquitaine, France

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Electro-Magnetic Tissue Properties Mapping

Exhibition Hall Monday 16:30-17:30

Computer 49 **3284. Continuous Monitoring of Radiofrequency Ablation Using MR-Based Fast Conductivity Imaging Method**
ISMRM MERIT AWARD magna cum laude
Woo Chul Jeong[1], Saurav ZK Sajib[1], Ji Eun Kim[1], Hyung Joong Kim[1], Oh In Kwon[2], Eung Je Woo[1]
[1]Kyung Hee University, Yongin, Gyeonggi, Korea; [2]Konkuk University, Seoul, Korea

Computer 50 **3285. Simultaneous Dual-Frequency Range Conductivity Mapping MR Method for Tissue Characterization: *In Vivo* Canine Brain Disease Model Study**
ISMRM MERIT AWARD magna cum laude
Woo Chul Jeong[1], Min Oh Kim[2], Saurav ZK Sajib[1], Ji Eun Kim[1], Hyung Joong Kim[1], Oh In Kwon[3], Dong Hyun Kim[2], Eung Je Woo[1]
[1]Kyung Hee University, Yongin, Gyeonggi, Korea; [2]Yonsei University, Seoul, Korea; [3]Konkuk University, Seoul, Korea

Computer 51 **3286. Simultaneous Quantitative Imaging Method for Neuroimaging**
Sung-Min Gho[1], Jaewook Shin[1], Min-Oh Kim[1], Dongyeob Han[1], Dong-Hyun Kim[1]
[1]Electrical and Electronic Engineering, Yonsei University, Sinchon-dong, Seoul, Korea

Computer 52 **3287. Electrical Conductivity Images of Brain Metabolites Using MR-Based Tissue Property Mapping**
Saurav ZK Sajib[1], Ji Eun Kim[1], Woo Chul Jeong[1], Hyung Joong Kim[1], Oh In Kwon[2], Eung Je Woo[1]
[1]Kyung Hee University, Yongin, Gyeonggi, Korea; [2]Konkuk University, Seoul, Korea

Computer 53 **3288. Current-Controlled Alternating Reversed DESS MREIT for Joint Estimation of Tissue Relaxation and Electrical Properties**
Hyunyeol Lee[1], Jaeseok Park[2]
[1]Center for Neuroscience Imaging Research, Institute for Basic Science (IBS), Sungkyunkwan University, Suwon, Gyeonggi, Korea; [2]Department of Global Biomedical Engineering, Sungkyunkwan University, Suwon, Gyeonggi, Korea

Computer 54 **3289. Geometrical Shift Results in Erroneous Appearance of Low Frequency Tissue Eddy Current Induced Phase Maps: Theory, Simulations and Measurements**
S. Mandija[1], A.L.H.M.W. van Lier[1], P. Petrov[2], S.W.F. Neggers[2], P.R. Luijten[1], C.A.T. van den Berg[1]
[1]Imaging Division, UMC Utrecht, Utrecht, Netherlands; [2]Brain Center Rudolf Magnus, UMC Utrecht, Utrecht, Netherlands

Computer 55 **3290. Simulating Charge at Electrical Property Interfaces**
Eric Duggan Gibbs[1, 2], Chunlei Liu, [23]
[1]Biomedical Engineering, Duke University, Durham, NC, United States; [2]Duke University Medical Center, Brain Imaging and Analysis Center, Durham, NC, United States; [3]Department of Radiology, Duke University, Durham, NC, United States

Computer 56 **3291. Further Study of the Effects of a Time-Varying Gradient Fields on Phase Maps – Theory and Experiments**
Jiasheng Su[1], Bingwen Zheng[2], Sam Fong Yau Li[2], Shao Ying Huang[1]
[1]Singapore University of Technology and Design, Singapore, Singapore; [2]Department of Chemistry, National University of Singapore, Singapore

Computer 57 **3292. Water-Content-Map Assisted Electrical Properties Reconstruction of Brain Tissue at 3T**
Eric Michel[1], Daniel Hernandez[1], Min Hyoung Cho[1], Soo Yeol Lee[1]
[1]Kyung Hee University, Suwon, Gyeonggi-Do, Korea

Computer 58 **3293. *In Vivo* Reconstructed Conductivity Values of Cervical Cancer Patients Based on EPT at 3T MRI**
Edmond Balidemaj[1], Peter de Boer[1], Hans Crezee[1], Rob Remis[2], Lukas Stalpers[1], Aart Nederveen[3], Cornelis A.T. van den Berg[4]
[1]Radiotherapy, Academic Medical Center, Amsterdam, Netherlands; [2]Circuits and Systems Group, TU Delft, Delft, Netherlands; [3]Radiology, Academic Medical Center, Amsterdam, Netherlands; [4]Radiotherapy, UMC Utrecht, Utrecht, Netherlands

Computer 59 **3294. Effect of Ion Size on Conductivity Measurements of MR-Phase-Based Electric Properties Tomography.**
Jan Sedlacik[1], Ulrich Katscher[2], Jens Fiehler[1]
[1]University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Philips Research Europe, Hamburg, Germany

Computer 60 **3295. A Regularized Model-Based Approach to Phase-Based Conductivity Mapping**
Kathleen M. Ropella[1], Douglas C. Noll[1]
[1]Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States

Computer 61 **3296. On the Signal-To-Noise Ratio of MR-Based Electrical Properties Tomography**
Seung-Kyun Lee[1], Selaka Bandara Bulumulla[1], Ileana Hancu[1]
[1]GE Global Research, Niskayuna, NY, United States

Computer 62 **3297. Local Electrical Properties Tomography with Global Regularization by Gradient**
Jiaen Liu[1], Xiaotong Zhang[1], Yicun Wang[1], Pierre-Francois Van de Moortele[2], Bin He[1, 3]
[1]Biomedical Engineering, University of Minnesota, Minneapolis, MN, United States; [2]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States; [3]Institute for Engineering in Medicine, University of Minnesota, Minneapolis, MN, United States

Computer 63 **3298. Combination of Multichannel Receive Data for Local Cr-MREPT**
Necip Gurler[1], Omer Faruk Oran[1], Yusuf Ziya Ider[1]
[1]Department of Electrical and Electronics Engineering, Bilkent University, Ankara, Turkey

Computer 64 **3299. Low Pass Filter Based Electrical Property Tomography (EPT) Reconstruction**
Jaewook Shin[1], Min-oh Kim[1], Narae Choi[1], Dong-Hyun Kim[1]
[1]Electrical and Electronic Engineering, Yonsei University, Seodaemun-gu, Seoul, Korea

Computer 65 **3300. PDE Solution of Electrical Properties Tomography with Multi-Channel B1 Transmission**
Jiaen Liu[1], Yicun Wang[1], Xiaotong Zhang[1], Pierre-Francois Van de Moortele[2], Bin He[1, 3]
[1]Biomedical Engineering, University of Minnesota, Minneapolis, MN, United States; [2]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States; [3]Institute for Engineering in Medicine, University of Minnesota, Minneapolis, MN, United States

Computer 66 **3301. Minimum-Noise Laplacian Kernel for MR-Based Electrical Properties Tomography**
Seung-Kyun Lee[1]
[1]GE Global Research, Niskayuna, NY, United States

Computer 67 **3302. The Dielectric Properties of Brain Tissues: Variation in Electrical Conductivity with Tissue Sodium Concentration and Tissue Water Content at 3T/4T**
YuPeng Liao[1], Sandro Romanzetti[1], Vincent Gras[1], DengFeng Huang[1], N. Jon Shah[1, 2]
[1]Institute of Neuroscience and Medicine-4, Forschungszentrum Juelich, Juelich, Germany; [2]JARA-Faculty of Medicine, RWTH Aachen University, Aachen, Germany

Computer 68 **3303. Total Variance Constrained Electrical Properties Tomography Using a 16-Channel Transceiver Array Coil at 7T**
Yicun Wang[1], Xiaotong Zhang[1], Jiaen Liu[1], Pierre-Francois Van de Moortele[2], Bin He[1, 3]
[1]Department of Biomedical Engineering, University of Minnesota, Minneapolis, MN, United States; [2]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States; [3]Institute for Engineering in Medicine, University of Minnesota, Minneapolis, MN, United States

Computer 69 **3304. Calculation of Electromagnetic Field Distribution to Detect Liver Abnormalities Using MR-Based Electrical Impedance Tomography**
Ji Eun Kim[1], Saurav ZK Sajib[1], Woo Chul Jeong[1], Hyung Joong Kim[1], Oh In Kwon[2], Eung Je Woo[1]
[1]Kyung Hee University, Yongin, Gyeonggi, Korea; [2]Konkuk University, Seoul, Korea

Computer 70 **3305. Anisotropic Conductivity Distribution of Brain Using a Combination of DTI and MREIT**
Saurav ZK Sajib[1], Woo Chul Jeong[1], Ji Eun Kim[1], Hyung Joong Kim[1], Oh In Kwon[2], Eung Je Woo[1]
[1]Kyung Hee University, Yongin, Gyeonggi, Korea; [2]Konkuk University, Seoul, Korea

Computer 71 **3306. Investigating Breast Tumor Malignancy with Electric Conductivity Measurement**
Ulrich Katscher[1], Hiroyuki Abe[2], Marko K. Ivancevic[3], Jochen Keupp[1]
[1]Philips Research Europe, Hamburg, Germany; [2]Medical Center, University of Chicago, Chicago, IL, United States; [3]Philips Healthcare, Best, Netherlands

Computer 72 **3307. Correlation Between the Electric Conductivity Measured by MREPT and Apparent Diffusion Coefficient in Invasive Breast Cancer**
Min Jung Kim[1], Soo-Yeon Kim[1], Dong-Hyun Kim[2], Jaewook Shin[2], Eun-Kyung Kim[1]
[1]Yonsei University, Seoul, Korea; [2]Yonsei University, Korea

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Quantitative Susceptibility Mapping
Exhibition Hall Monday 16:30-17:30

Computer 73 **3308. COMbining Phased Array Data Using Offsets from a Short Echo-Time Reference Scan (COMPOSER)**
Simon Daniel Robinson[1], Wolfgang Bogner[1], Barbara Dymerska[1], Pedro Cardoso[1], Günther Grabner[1], Xeni Deligianni[2], Oliver Bieri[2], Siegfried Trattnig[1]
[1]High Field MR Centre, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria; [2]Division of Radiological Physics, Department of Radiology, University of Basel Hospital, Basel, Switzerland

Computer 74 **3309. Multi-Channel Data Combination with Linear Phase Baseline Correction**
Saifeng Liu[1], Yongquan Ye[2], Sagar Buch[3], E. Mark Haacke, [12]
[1]The MRI Institute for Biomedical Research, Waterloo, Ontario, Canada; [2]Department of Radiology, Wayne State University, Detroit, MI, United States; [3]School of Biomedical Engineering, McMaster University, Hamilton, Ontario, Canada

Computer 75 **3310. Multi-Echo Multi-Receiver MR Phase Reconstruction with Bipolar Acquisitions**
Joseph Dagher[1]
[1]Department of Medical Imaging, University of Arizona, Tucson, AZ, United States

Computer 76 **3311. The Impact of Background Removal Techniques on the Quantification of Magnetic Susceptibility in the Human Cortex**
Diana Khabipova[1], José P. Marques[1]
[1]CIBM, Lausanne, Vaud, Switzerland

Computer 77 **3312. DirEct Complex SignAl Fitting (DECAF) for Multi-Compartment Analysis in White Matter**
Yoonho Nam[1], Dong-Hyun Kim[2], Jongho Lee[1]
[1]Department of Electrical and Computer Engineering, Seoul National University, Seoul, Korea; [2]Department of Electrical and Electronic Engineering, Yonsei University, Seoul, Korea

Computer 78 **3313. iHARPERELLA: An Improved Method for Integrated 3D Phase Unwrapping and Background Phase Removal**
Wei Li[1, 2], Bing Wu[3], Chunlei Liu[4, 5]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Ophthalmology, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [3]GE Healthcare, Beijing, China; [4]Brain Imaging and Analysis Center, Duke University, Durham, NC, United States; [5]Radiology, Duke University, Durham, NC, United States

Computer 79 **3314. Quantitative Assessment of Background Field Removal Methods for Abdominal Imaging**
Debra E. Horng[1, 2], Samir D. Sharma[1], Diego Hernando[1], Scott B. Reeder[1, 2]
[1]Radiology, University of Wisconsin-Madison, Madison, WI, United States; [2]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States

Computer 80 **3315. Removal of Background Fields with Spatially Variable Kernel Radii Guided by the Frequency-Offset-Gradient (FOG) Magnitude**
PINAR SENAY ÖZBAY[1, 2], Cristina Rossi[1], Klaas Paul Prüssmann[3], Daniel Nanz[1]
[1]Department of Radiology, University Hospital Zürich, Zürich, Switzerland; [2]Institute of Biomedical Engineering, ETH Zürich, Zürich, Switzerland; [3]Institute of Biomedical Engineering, ETH Zürich, Zürich, Switzerland

Computer 81 **3316. regularized QSM with Instant Parameter Sweep and Reduced Streaking Artifacts in Seconds**
Job G. Bouwman[1], Peter R. Seevinck[1]
[1]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands

Computer 82 **3317. Quantitative Susceptibility Mapping of Intracranial Hemorrhage: Artifacts Reduction**
Hongfu Sun[1], Mahesh Kate[2], Laura C. Gioia[2], Derek J. Emery[3], Kenneth Butcher[2], Alan H. Wilman[1]
[1]Biomedical Engineering, University of Alberta, Edmonton, AB, Canada; [2]Neurology, U of Alberta, AB, Canada; [3]Radiology, U of Alberta, AB, Canada

Computer 83 **3318. Streaking Artifacts Reduction for QSM**
Hongjiang Wei[1], Wei Li[2], Nian Wang[1], Chunlei Liu[1, 3]
[1]Brain Imaging and Analysis Center, Duke University, Durham, NC, United States; [2]University of Texas Health Science Center at San Antonio, TX, United States; [3]Depatment of Radoilogy, School of Medicine, Duke University, Durham, NC, United States

Computer 84 **3319. Quantitative Susceptibility Mapping Using Adaptive Edge-Preserving Filtering**
Toru Shirai[1], Ryota Sato[1], Yo Taniguchi[1], Takenori Murase[2], Yoshitaka Bito[2], Hisaaki Ochi[1]
[1]Central Research Laboratory, Hitachi, Ltd., Kokubunji, Tokyo, Japan; [2]MRI system division, Hitachi Medical Corporation, Chiba, Japan

Computer 85 **3320. Enhancing K-Space Methods for Quantitative Susceptibility Mapping by Exploiting Consistency in Cone Data**
Yan Wen[1, 2], Yi Wang[2, 3], Tian Liu[1]
[1]MedImageMetric LLC, New York, United States; [2]Biomedical Engineering, Cornell University, Ithaca, NY, United States; [3]Radiology, Weill Cornell Medical College, New York, United States

Computer 86 **3321. Quantitative Susceptibility Mapping Using Segmentation-Enabled Dipole Inversion**
Jakob Meineke[1], Julien Senegas[1], Ulrich Katscher[1], Fabian Wenzel[1]

[1]Philips Research Europe, Hamburg, Germany

Computer 87 **3322. Structural Feature Based Collaborative Reconstruction for Quantitative Susceptibility Mapping**
Lijun Bao[1, 2], Zhong Chen[1], Peter C.M. van Zijl[2], Xu Li[2]
[1]Department of Electronic Science, Xiamen University, Xiamen, Fujian, China; [2]Department of Radiology,School of medicine, Johns Hopkins University, Baltimore, MD, United States

Computer 88 **3323. Distribution Specified Dipole Inversion for Quantitative Susceptibility Mapping**
Yilin Yang[1], Tian Liu[2], Jianwu Dong[3], Pascal Spincemaille[4], Yi Wang, [45]
[1]Department of Electronic Engineering, Tsinghua University, Beijing, China; [2]MedImageMetric, LLC, New York, NY, United States; [3]Department of Automation, Tsinghua University, Beijing, China; [4]Department of Radiology, Weill Medical College of Cornell University, New York, NY, United States; [5]Department of Biomedical Engineering, Cornell University, Ithaca, NY, United States

Computer 89 **3324. Quantitative Susceptibility Mapping Using Piecewise Gradient Weighting**
Zhiwei Zheng[1], Shuhui Cai[1], Congbo Cai[2], Zhong Chen[1]
[1]Department of Electronic Science, Xiamen University, Xiamen, Fujian, China; [2]Department of Communication Engineering, Xiamen University, Xiamen, Fujian, China

Computer 90 **3325. Quantitative Susceptibility Mapping with Superfast Dipole Inversion: Influence of Regularization Parameters on the Susceptibility of the Substantia Nigra and the Red Nucleus**
Olaf Dietrich[1], Seyed-Ahmad Ahmadi[2], Johannes Levin[2], Juliana Maiostre[2], Annika Plate[2], Armin Giese[3], Kai Bötzel[2], Maximilian F. Reiser[1], Birgit Ertl-Wagner
[1]Josef Lissner Laboratory for Biomedical Imaging, Institute for Clinical Radiology, LMU Ludwig Maximilian University of Munich, Munich, Germany; [2]Department of Neurology, LMU Ludwig Maximilian University of Munich, Munich, Germany; [3]Center for Neuropathology and Prion Research, LMU Ludwig Maximilian University of Munich, Munich, Germany

Computer 91 **3326. On the Feasibility of QSM in MR-Invisible Regions**
Diego Hernando[1], Debra E. Horng, [12], Samir D. Sharma[1], Scott B. Reeder[1, 2]
[1]Radiology, University of Wisconsin-Madison, Madison, WI, United States; [2]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States

Computer 92 **3327. On the Influence of Zero Padding on the Non Linear Operations of Quantitative Susceptibility Mapping**
Sarah Eskreis-Winkler[1], Dong Zhou[2], Tian Liu[3], Ajay Gupta[2], Susan Gauthier[2], Yi Wang[2], Pascal Spincemaille[2]
[1]Weill Cornell Medical College, New York, NY, United States; [2]Weill Cornell Medical College, NY, United States; [3]MedImageMetric, LLC, NY, United States

Computer 93 **3328. p-Space Imaging: Where Does the Contrast Come From?**
Sina Straub[1], Andreas Wetscherek[2], Mark E. Ladd[2], Frederik B. Laun[2]
[1]Medical Physics in Radiology , German Cancer Research Center (DKFZ), Heidelberg, Germany; [2]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

Computer 94 **3329. Compressed Sensing (CS) in Phase Imaging Requires Dedicated Reconstruction Strategies**
Ukash Nakarmi[1], Shruti Prasad[2], Leslie Ying[1, 3], Paul Polak[2], Robert Zivadinov[2, 4], Ferdinand Schweser[2, 5]
[1]Dept. of Electrical Engineering, State University of New York at Buffalo, Buffalo, NY, United States; [2]Buffalo Neuroimaging Analysis Center, Dept of Neurology, School of Medicine and Biomedical Sciences, State University of New York at Buffalo, NY, United States; [3]Dept. of Biomedical Engineering, State University of New York at Buffalo, NY, United States; [4]MRI Molecular and Translational Imaging Center , Buffalo CTRC, State University of New York at Buffalo, Buffalo, NY, United States; [5]MRI Molecular and Translational Imaging Center, Buffalo CTRC, State University of New York at Buffalo, Buffalo, NY, United States

Computer 95 **3330. Improved Accuracy in Susceptibility-Based OEF Measurements by Mitigation of Partial-Volume Effects Via Combined Magnitude and Phase Reconstruction**
Patrick McDaniel[1], Audrey Fan[2], Berkin Bilgic[3], Jeffrey N. Stout[4], Elfar Adalsteinsson[1, 4]
[1]Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA, United States; [2]Radiology, Richard M. Lucas Center for Imaging, Stanford University, Stanford, CA, United States; [3]A. A. Martinos Center for Imaging, Department of Radiology, Massachusetts General Hopsital, Charlestown, MA, United States; [4]Health Sciences and Technology, Harvard-MIT, Cambridge, MA, United States

Computer 96 **3331. On the Limitations of Brain Lesion Characterization by Direct Assessment of MRI Phase**
ISMRM MERIT AWARD magna cum laude
Paul Polak[1], Robert Zivadinov[1, 2], Ferdinand Schweser[1, 2]
[1]Department of Neurology, Buffalo Neuroimaging Analysis Center, State University of New York at Buffalo, Buffalo, NY, United States; [2]Molecular and Translational Imaging Center, MRI Center, Clincal and Translational Research Center, Buffalo, NY, United States

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CEST Technologies & Molecular Applications of CEST

Exhibition Hall Monday 17:30-18:30

Computer 1 **3332. Transfer Rate Edited Experiment for the Selective Detection of Chemical Exchange**
Ding Xia[1], Joshua I. Friedman[2], Jae-Seung Lee[1, 2], Ravinder R. Regatte[1], Alexej Jerschow[2]
[1]Department of Radiology, New York University Langone Medical Center, New York, NY, United States; [2]Department of Chemistry, New York University, New York, NY, United States

Computer 2 **3333. Slice Multiplexed Chemical Exchange Saturation Transfer**
Bing Wu[1], Han Ouyang[2], Zhenyu Zhou[1]
[1]GE healthcare China, Beijing, China; [2]China academy of sciences cancer hospital, Beijing, China

Computer 3 **3334. R_1 Correction for Quantitative Amide Proton Transfer Imaging**
Hua Li[1], Ke Li[1], Xiao-Yong Zhang[1], Zhongliang Zu[1], Moritz Zaiss[2], Daniel F. Gochberg[1], John C. Gore[1], Junzhong Xu[1]
[1]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [2]Department of Medical Physics in Radiology, DKFZ, Heidelberg, BW, Germany

Computer 4 **3335. A Length and Offset Varied Saturation (LOVARS) CEST MRI: A New Tool in Early Detecting Both Intracerebral Hemorrhage and Infarct**
Meiyun Wang[1], Erning Zhang[1], Carlos Torres[2], Yan Bai, Xiaowei He[3], Dapeng Shi, Panli Zuo[4], Michael T. McMahon[5], Benjamin Schmitt[6], Xiaolei Song[7]
[1]Department of Radiology, Henan Provincial People's Hospital, Zhengzhou, Henan, China; [2]Department of Radiology, The Ottawa Hospital, The University of Ottawa , Ottawa, ON, Canada; [3]School of Information Sciences and Technology, Northwest University, Xian, Shanxi, China; [4]Siemens Healthcare, Beijing, China; [5]Dept. of Radiology, The Johns Hopkins University School of Medicine, Baltimore, MD, United States; [6]Siemens Ltd Australia, Macquarie Park, Australia; [7]Department of Radiology, The Johns Hopkins University School of Medicine, Baltimore, MD, United States

Computer 5 **3336. Applying Variable RF-Power CEST (VCEST) to Detect Exchangeable Hydroxyl Protons in the Presence of MT at 3 Tesla**
Daniel James Clark[1, 2], Alex K. Smith[3, 4], Michael V. Knopp[1], Seth A. Smith[3, 4]
[1]Wright Center of Innovation, Department of Radiology, The Ohio State University, Columbus, OH, United States; [2]Department of Biomedical Engineering, The Ohio State University, Columbus, OH, United States; [3]VUIIS, Department of Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [4]Department of Biomedical Engineering, Vanderbilt University, Nashville, TN, United States

Computer 6 **3337. Improving Sensitivity to Hydroxyl Protons and Simultaneous Measurement of Amide and NOE Signals at 3T Using Variable Pre-Saturation Power CEST (VCEST)**
Daniel James Clark[1, 2], Alex K. Smith[3, 4], Michael V. Knopp[1], Seth A. Smith[3, 4]
[1]Wright Center of Innovation, Department of Radiology, The Ohio State University, Columbus, OH, United States; [2]Department of Biomedical Engineering, The Ohio State University, Columbus, OH, United States; [3]VUIIS, Department of Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [4]Department of Biomedical Engineering, Vanderbilt University, Nashville, TN, United States

Computer 7 **3338. Saturation Parameters Influence on SAFARI Performance**
Shu Zhang[1], Jochen Keupp[2], Zheng Liu[3], Robert E. Lenkinski[1, 4], Elena Vinogradov[1, 4]
[1]Radiology, UT Southwestern Medical Center, Dallas, TX, United States; [2]Philips Research, Hamburg, Germany; [3]Advanced Imaging Research Center, Oregon Health & Science University, Portland, OR, United States; [4]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States

Computer 8 **3339.** **Importance of Saturation Power Optimization in Improving the Estimation Accuracy of Chemical Exchange Rates with the Omega Plot: A Simulation Study**
Sha Sha Yang[1], Ke Jiang[1], Yin Wu[1]
[1]Paul C. Lauterbur Research Centre for Biomedical Imaging, Shenzhen Key Laboratory for MRI, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, Guangdong, China

Computer 9 **3340.** **Reduced FOV Chemical Exchange Transfer Saturation**
Bing Wu[1], Chunmei Li[2], Min Chen[2], Zhenyu Zhou[1]
[1]GE healthcare China, Beijing, China; [2]Beijing hospital, Beijing, China

Computer 10 **3341.** **Reduced FOV Amide Proton Transfer on Brain Tumor**
Chien-Yuan Eddy Lin[1, 2], Bing Wu[2], Zhongping Zhang[2], Zhenyu Zhou[2], Ai-Chi Chen[3], Chi-Ren Chen[3]
[1]GE Healthcare, Taipei, Taiwan; [2]GE Healthcare China, Beijing, China; [3]Department of Radiology, Taipei Medical University - Shuang Ho Hospital, New Taipei City, Taiwan

Computer 11 **3342.** **On the Selection of Reference Images Used for Registration in CEST Imaging**
Yi Zhang[1], Hye-Young Heo[1], Dong-Hoon Lee[1], Jinyuan Zhou[1, 2]
[1]Division of MR Research, Department of Radiolgoy, Johns Hopkins University, Baltimore, MD, United States; [2]F. M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States

Computer 12 **3343.** **A Robust Method to Estimate CEST MRI Parametric Maps *In Vivo*: Simultaneous Quantification of Concentration and Exchange Rate by Minimizing the Lp Norm**
Julio Cárdenas-Rodríguez[1], Mark D. Pagel[1]
[1]Biomedical Engineering, University of Arizona, Tucson, AZ, United States

Computer 13 **3344.** **SAS: Symmetric Analysis of Z-Spectra, a Method to Evaluate B0 Correction Techniques for CEST Data in Clinical Systems Using Non-Exchanging Phantoms**
James E M Fairney[1, 2], Guanshu Liu[3], Karin Shmueli[1], Xavier Golay[2]
[1]Department of Medical Physics & Biomedical Engineering, University College London, London, United Kingdom; [2]Department of Brain Repair and Rehabilitation, UCL Institute of Neurology, London, United Kingdom; [3]F.M.Kirby Center, Kennedy Krieger Institute, Department of Radiology, Johns Hopkins University, Baltimore, MD, United States

Computer 14 **3345.** **Lorentzian Fitting of the CEST Z-Spectra in Blood Red Cells**
Shaokuan Zheng[1], Guoxing Lin[2], Zhongliang Zu[3], Yansong Zhao[4], Matthew J. Gounis[1]
[1]Department of Radiology, UMASS Medical School, Worcester, MA, United States; [2]Gustav H. Carlson School of Chemistry, Clark University, Worcester, MA, United States; [3]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [4]Philips Healthcare, Cleveland, OH, United States

Computer 15 **3346.** **CEST Peak Extraction Method for Multi Peak Fitting**
Mitsuharu Miyoshi[1], Tsuyoshi Matsuda[1], Hiroyuki Kabasawa[1]
[1]Global MR Application and Workflow, GE Healthcare Japan, Hino, Tokyo, Japan

Computer 16 **3347.** **Matrix-Algebra-Based Modeling Approach to MT, NOE and CEST for an Arbitrary Number of Interacting Spin Pools**
Tobias Lenich[1], André Pampel[1], Harald E. Möller[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Saxony, Germany

Computer 17 **3348.** **Accurate Fitting of a Multi-Pool Proton Exchange System with *a Priori* Fitted Two-Pool MTC Information**
Hye-Young Heo[1], Yi Zhang[1], Dong-Hoon Lee[1], Xiaohua Hong[1], Jinyuan Zhou[1]
[1]Russell H Morgan Department of Radiology and Radiological Science, Johns Hopkins University, Baltimore, MD, United States

Computer 18 **3349.** ***In Vitro* Study of CEST Effects from Endogenous Metabolites at 3 T and 7 T**
Jae-Seung Lee[1, 2], Ding Xia[1], Alexej Jerschow[2], Ravinder R. Regatte[1]

[1]Department of Radiology, New York University, New York, NY, United States; [2]Department of Chemistry, New York University, New York, NY, United States

Computer 19 **3350. Mapping Glutamate in Mice Using Chemical Exchange Saturation Transfer at 9.4T**
Alex Li[1], Miranda Bellyou-Camilleri[1], Joseph Gati[1], Robert Bartha[1], Ravi Menon[1]
[1]Centre for Functional and Metabolic Mapping, The University of Western Ontario, London, ON, Canada

Computer 20 **3351. Combining CEST with CESL to Differentiate Slow Exchanging Pool from Fast Exchanging Pool: Mapping the Concentration of Glutamate and Amides Separately**
Olivier E. Mougin[1], Penny A. Gowland[1]
[1]Sir Peter Mansfield Imaging Centre, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

Computer 21 **3352. Separated Quantification of Creatine and Phosphocreatine Based on a Novel Proton MR Method Combing ^{1}H-MRS and CEST MRI**
Rong-Wen Tain[1, 2], Weiguo Li[3], Shaolin Yang[4], Xiaohong Joe Zhou[1, 2], Kejia Cai[1, 2]
[1]Radiology, College of Medicine, University of Illinois at Chicago, Chicago, IL, United States; [2]Center for MR Research, College of Medicine, University of Illinois at Chicago, Chicago, IL, United States; [3]Research Resource Center, University of Illinois at Chicago, IL, United States; [4]Psychiatry, College of Medicine, University of Illinois at Chicago, Chicago, IL, United States

Computer 22 **3353. *In Vivo* Measurement of Free Creatine and Phosphocreatine Kinetics in Lower Leg Muscle.**
Olusegun Adegbite[1], Prodromos Parasoglou[1], Lee Jae Seung[1], Ding Xia[1], Ravinder R. Regatte[1]
[1]Radiology, NYU, Langone Medical Centre, New York, United States

Computer 23 **3354. A Smart CEST Imaging Sensor Based on Thermo-Sensitive Micelle**
Xiaolei Zhu[1], Shizhen Chen[1], Qing Luo[1], Xin Zhou[1]
[1]National Center for Magnetic Resonance in Wuhan, Wuhan Institute of Physics and Mathematics, Wuhan, Hubei, China

Computer 24 **3355. Reconstituted HDL for PARACEST-Fluorescence Multimodal Imaging**
Qi Wang[1], Shizhen Chen[1], Qing Luo[1], Xin Zhou[1]
[1]National Center for Magnetic Resonance in Wuhan, Wuhan Institute of Physics and Mathematics, Wuhan, Hubei, China

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Magnetization Transfer & CEST

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Computer 25 **3356. Whole Brain Inhomogeneous MT Using an IhMT Prepared 3D GRE Sequence at 1.5T**
Olivier M. Girard[1], Arnaud Le Troter[1], Gopal Varma[2], Valentin H. Prevost[1], Maxime Guye[1, 3], Jean-Philippe Ranjeva[1, 3], David C. Alsop[2], Guillaume Duhamel[1]
[1]CRMBM UMR 7339, CNRS and Aix-Marseille University, Marseille, France; [2]Radiology Department, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, United States; [3]Pôle d'Imagerie Médicale, CEMEREM, APHM, Marseille, France

Computer 26 **3357. Extracting a Robust Inhomogeneous Magnetization Transfer (IhMT) Rate Parameter, IhMT-R_{ex}**
Gopal Varma[1], Olivier M. Girard[2], Valentin Prévost[2], Guillaume Duhamel[2], David C. Alsop[1]
[1]Radiology, Division of MR Research, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, United States; [2]CRMBM UMR 7339, CNRS and Aix-Marseille Université, Marseille, France

Computer 27 **3358. Rapid, Motion Robust, and Quiet Quantitative Magnetization Transfer (QMT) Imaging Using a Zero Echo Time (ZTE) Acquisition**
James H. Holmes[1], Alexey Samsonov[2], Pouria Mossahebi[3], Diego Hernando[2], Aaron S. Field[2, 4], Kevin M. Johnson[5]
[1]Global MR Applications and Workflow, GE Healthcare, Madison, WI, United States; [2]Radiology, University of Wisconsin-Madison, Madison, WI, United States; [3]Department of Medicine, University of Wisconsin-Madison, Madison, WI, United States; [4]Biomedical Engineering, University of Wisconsin-Madison, Madison, WI, United States; [5]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States

Computer 28 3359. Optimisation of Magnetisation Transfer Ratio Sequence Acquisition Parameters: Application to the Spinal Cord
Marco Battiston[1], James E M Fairney[2, 3], Marios C. Yiannakas[1], Claudia A M Wheeler-Kingshott[1], Rebecca S. Samson[1]
[1]NMR Research Unit, Department of Neuroinflammation, Queen Square MS Centre, UCL Institute of Neurology, London, England, United Kingdom; [2]Department of Medical Physics and Biomedical Engineering, UCL, London, England, United Kingdom; [3]Department of Brain Repair and Rehabilitation, UCL Institute of Neurology, London, England, United Kingdom

Computer 29 3360. Correction for Residual Effects of B1+ Inhomogeniety on MT Saturation in FLASH-Based Multi-Parameter Mapping of the Brain
Gunther Helms[1, 2]
[1]Medical Radiation Physics, Lund University, Lund, Scania, Sweden; [2]Cognitive Neurology, Göttingen University Medical Center, Göttingen, Lower Saxony, Germany

Computer 30 3361. Initial Investigation Into Effect of Radiation Damping on Magnetization Transfer Parameters Extracted from Inversion Recovery Experiments
Emily Willson[1], Heather Whitney[2]
[1]Wheaton College, Wheaton, IL, United States; [2]Physics, Wheaton College, Wheaton, IL, United States

Computer 31 3362. MT Spectra Asymmetry and NOE Studies in the Brachial Plexus
Zaid Bin Mahbub[1], Olivier Mougin[2], Penny Gowland[2]
[1]Arts & Sciences, Ahsanullah University of Science & Technology, Dhaka, Bangladesh; [2]SPMMRC, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

Computer 32 3363. Nuclear Overhauser Enhancement Imaging of Glioblastoma Patients at 7 Tesla: Region Specific Correlation with Diffusion Weighted MRI
Daniel Paech[1], Sina Burth[1], Johannes Windschuh[2], Jan Eric Meissner[2], Moritz Zaiss[2], Oliver Eidel[1], Philipp Kickingereder[1], Peter Bachert[2], Wolfgang Wick[3], Heinz Peter Schlemmer[4], Ralf Omar Floca[4], Mark Edward Ladd[2], Sabine Heiland[1], Martin Bendszus[1], Alexander Radbruch[1]
[1]Neuroradiology, University Hospital Heidelberg, Heidelberg, Baden-Württemberg, Germany; [2]Department of Medical Physics in Radiology, German cancer research center, Baden-Württemberg, Germany; [3]Neurooncology, University Hospital Heidelberg, Heidelberg, Baden-Württemberg, Germany; [4]Department of Radiology, German cancer research center, Baden-Württemberg, Germany

Computer 33 3364. Impaired Biophysical Integrity of Default Mode Network in Type 2 Diabetes Revealed by Magnetization Transfer Imaging
Shaolin Yang[1, 2], Minjie Wu[1], Olusola Ajilore[1], Anand Kumar[1]
[1]Department of Psychiatry, University of Illinois at Chicago, Chicago, IL, United States; [2]Department of Radiology, University of Illinois at Chicago, Chicago, IL, United States

Computer 34 3365. Magnetization Transfer Ratio (MTR) Imaging in the Presence of Fat
James H. Holmes[1], Kevin M. Johnson[2], Diego Hernando[3], Scott B. Reeder, [23], Alexey Samsonov[3]
[1]Global MR Applications and Workflow, GE Healthcare, Madison, WI, United States; [2]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States; [3]Radiology, University of Wisconsin-Madison, Madison, WI, United States

Computer 35 3366. Whole-Brain Amide Proton Transfer (APT) and Nuclear Overhauser Enhancement (NOE) Imaging in Glioma Patients Using Low-Power Steady State Pulsed CEST at 7T
Hye-Young Heo[1], Shruti Agarwal[2], Craig Jones[1, 3], Jun Hua[1, 3], Nirbhay Yadav[1, 3], Jinyuan Zhou[1, 3], Peter C.M van Zijl[1, 3], Jay J. Pillai[2]
[1]Division of MR Research, Russell H Morgan Department of Radiology and Radiological Science, Johns Hopkins University, Baltimore, MD, United States; [2]Division of Neuroradiology, Russell H Morgan Department of Radiology and Radiological Science, Johns Hopkins University, Baltimore, MD, United States; [3]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute , Baltimore, MD, United States

Computer 36 3367. On the Distribution of Pure Amide Proton Transfer and Pure Nuclear Overhauser Enhancement Signals in Gray and White Matter in the Human Brain at 7T
Vitaliy Khlebnikov[1], Jeroen Siero[1], Jannie Wijnen[1], Fredy Visser[2], Peter Luijten[1], Dennis Klomp[1], Hans Hoogduin[1]
[1]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]Philips Healthcare, Best, Netherlands

Computer 37 3368. Sufficiency of Two-Pool Model for Quantitative Magnetization Transfer Imaging in Tumors
Ke Li[1, 2], Hua Li[1, 3], Xiao-Yong Zhang[1, 2], Ashley M. Stokes[1, 2], Hakmook Kang[4], Zhongliang Zu[1, 2], Chad C. Quarles[1, 2], Daniel F. Gochberg[1, 2], John C. Gore[1, 2], Junzhong Xu[1, 2]
[1]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [2]Department of Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [3]Department of Physics and Astronomy, Vanderbilt University, Nashville, TN, United States; [4]Department of Biostatistics, Vanderbilt University, Nashville, TN, United States

Computer 38 3369. Oxidative Stress Sensitive Magnetization Transfer
Rong-Wen Tain[1, 2], Weiguo Li[3], Tibor Valyi-Nagy[4], Xiaohong Joe Zhou[1, 2], Kejia Cai[1, 2]
[1]Radiology, College of Medicine, University of Illinois at Chicago, Chicago, IL, United States; [2]Center for MR Research, College of Medicine, University of Illinois at Chicago, Chicago, IL, United States; [3]Research Resource Center, University of Illinois at Chicago, IL, United States; [4]Pathology, College of Medicine, University of Illinois at Chicago, IL, United States

Computer 39 3370. Characterization of the Optic Nerve *In-Vivo* Using High-Resolution APT-CEST
Alex K. Smith[1, 2], Lindsey M. Dethrage, [23], Samantha By[1, 2], Siddharama Pawate[4], Seth A. Smith[2, 3]
[1]Biomedical Engineering, Vanderbilt University, Nashville, TN, United States; [2]Vanderbilt University Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [3]Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [4]Neurology and Neuroimmunology, Vanderbilt University, Nashville, TN, United States

Computer 40 3371. Chemical Exchange Saturation Transfer on a Prototype Model of Neurodegeneration.
Eleni Demetriou[1], Andreia C. Silva[1], Marilena Rega[1], Francisco Torrealdea[1], James E M Fairney[1, 2], Mohamed Tachrount[1], Mark Farrow[3], Xavier Golay[1]
[1]Brain repair and rehabilitation, Institute of Neurology, London, United Kingdom; [2]Medical Physics &Biomedical engineering, University College of London, London, United Kingdom; [3]MRC prion unit, UCL Institute of Neurology , London, United Kingdom

Computer 41 3372. CEST MRI of Cortical Gray Matter in Multiple Sclerosis
Adrienne Dula[1], Siddharama Pawate[1], Lindsey M. Dethrage[1], Benjamin N. Conrad[1], Seth A. Smith[1]
[1]Vanderbilt University, Nashville, TN, United States

Computer 42 3373. Longitudinal CEST Imaging of Spinal Cord Injury in Monkeys: Fingerprints of Cyst
Feng Wang[1, 2], Zhongliang Zu[1, 2], Tung-Lin Wu[2], John C. Gore[1, 2], Li Min Chen[1, 2]
[1]Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [2]Institute of Imaging Sciences, Vanderbilt University, Nashville, TN, United States

Computer 43 3374. Age-Dependent GagCEST Effect in Human Lumbar Intervertebral Discs
Frithjof Wickrath[1], Anja Müller-Lutz[1], Christoph Schleich[1], Benjamin Schmitt[2], Tom Cronenberg[1], Rotem Shlomo Lanzman[1], Falk Miese[1], Hans-Jörg Wittsack[1]
[1]Department of Diagnostic and Interventional Radiology, University Dusseldorf, Medical Faculty, D-40225 Dusseldorf, NRW, Germany; [2]Healthcare Sector, Siemens Ltd. Australia, Australia

Computer 44 3375. Endogenous Urea CEST (UrCEST) for MRI Monitoring of Kidney Function
Elena Vinogradov[1, 2], Zheng Liu[3], Ananth Madhuranthakam[1, 2], Asghar Hajibeigi[1], Adrien Jump[4], Ivan Pedrosa[1, 2], Orson W. Moe[4], Robert E. Lenkinski[1, 2]
[1]Radiology, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [3]Advanced Imaging Research Center,Oregon National Primate Research Center, Oregon Health & Science University, Portland, OR, United States; [4]Internal Medicine, University of Texas Southwestern Medical Center, Dallas, TX, United States

Computer 45 3376. Chemical Exchange Saturation Transfer (CEST) MR Imaging of Rat Liver with Fasting or CCl4 Intoxication
Shuzhong Chen[1], Min Deng[1], Jing Yuan[2], Yi-Xiang Wang[1]
[1]Department of Imaging and Interventional Radiology, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong; [2]Medical Physics and Research Department, Hong Kong Sanatorium & Hospital, Happy Valley, Hong Kong

Computer 46 **3377. Can Brain Tumor Microenvironment and Associated Structures Be Probed by Amide Proton Transfer at 7T?**

Vitaliy Khlebnikov[1], Daniel Polders[2], Dennis Klomp[1], Jeroen Hendrikse[1], Piere Robe[3], Eduard Voormolen[3], Peter Luijten[1], Hans Hoogduin[1]

[1]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]Philips Healthcare, Best, Netherlands; [3]Brain Division, University Medical Center Utrecht, Utrecht, Netherlands

Computer 47 **3378. Z-Spectral Modeling for CEST-MRI of Bladder Cancer**

Ryan Nicholas Schurr[1], Huyen T. Nguyen[2], Kamal Pohar[3], Amir Mortazavi[4], Zarine Shah[2], Debra Zynger[5], Michael V. Knopp[2], Guang Jia[1]

[1]Department of Physics and Astronomy, Louisiana State University, Baton Rouge, LA, United States; [2]Department of Radiology, The Ohio State University, OH, United States; [3]Department of Urology, The Ohio State University, OH, United States; [4]Department of Internal Medicine, The Ohio State University, OH, United States; [5]Department of Pathology, The Ohio State University, OH, United States

Computer 48 **3379. Modulation and Regulation of Intracellular PH in Healthy Human Brain Studied by Means of Chemical Exchange Saturation Transfer (CEST) at 7T**

Vitaliy Khlebnikov[1], Alex Bhogal[1], Jeroen Siero[1], Michel Italiaander[2], Vincent Boer[1], Peter Luijten[1], Hans Hoogduin[1], Dennis Klomp[1]

[1]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]MR Coils BV, Drunen, Netherlands

Electronic Poster
MR Fingerprinting & Quantitative Imaging

Exhibition Hall Monday 17:30-18:30

Computer 49 **3380. Nonlinear Dimensionality Reduction for Magnetic Resonance Fingerprinting with Application to Partial Volume**

ISMRM MERIT AWARD magna cum laude

Debra McGivney[1], Anagha Deshmane[2], Yun Jiang[2], Dan Ma[2], Mark Griswold[1, 2]

[1]Radiology, Case Western Reserve University, Cleveland, OH, United States; [2]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States

Computer 50 **3381. A Bayesian Approach to the Partial Volume Problem in Magnetic Resonance Fingerprinting**

ISMRM MERIT AWARD magna cum laude

Debra McGivney[1], Anagha Deshmane[2], Yun Jiang[2], Dan Ma[2], Mark Griswold[1, 2]

[1]Radiology, Case Western Reserve University, Cleveland, OH, United States; [2]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States

Computer 51 **3382. MR Fingerprinting Based on Realistic Vasculature in Mice: Identifiability of Physiological Parameters**

Philippe Pouliot[1, 2], Louis Gagnon[3], Tina Lam[4], Pramod Avti[5], Michèle Desjardins[1], Ashok Kakkar[4], Sava Sakadzic[3], David Boas[3], Frédéric Lesage[1]

[1]Electrical Engineering, Ecole Polytechnique Montreal, Montreal, QC, Canada; [2]Research Centre, Montreal Heart Institute, Montreal, QC, Canada; [3]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Harvard Medical School, MA, United States; [4]Chemistry Department, McGill University, QC, Canada; [5]Montreal Heart Institute, QC, Canada

Computer 52 **3383. Uncertainty Volume Analysis - A Measure for Protocol Performance**

Cristoffer Cordes[1], Matthias Günther[1, 2]

[1]Fraunhofer MEVIS, Bremen, Germany; [2]MR-Imaging and Spectroscopy, University of Bremen, Bremen, Germany

Computer 53 **3384. Tier-Specific Weighted Echo Sharing Technique (WEST) for Extremely Undersampled Cartesian Magnetic Resonance Fingerprinting (MRF)**

Taejoon Eo[1], Jinseong Jang[1], Minoh Kim[1], Dong-hyun Kim[1], Dosik Hwang[1]

[1]Yonsei University, Seoul, Korea

Computer 54 **3385. 3D Balanced-EPI Magnetic Resonance Fingerprinting at 6.5 MT**

Mathieu Sarracanie[1, 2], Ouri Cohen[1], Matthew S. Rosen[1, 2]

[1]MGH/A.A. Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [2]Department of Physics, Harvard University, Cambridge, MA, United States

Computer 55 3386. Pulse Sequence Optimization for Improved MRF Scan Efficiency

ISMRM MERIT AWARD magna cum laude

Jesse Ian Hamilton[1], Katherine L. Wright[1], Yun Jiang[1], Luis Hernandez-Garcia[2], Dan Ma[1], Mark Griswold, [13], Nicole Seiberlich[1, 3]
[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States; [3]Radiology, Case Western Reserve University, Cleveland, OH, United States

Computer 56 3387. Multiple Preparation Magnetic Resonance Fingerprinting (MP-MRF): An Extended MRF Method for Multi-Parametric Quantification

ISMRM MERIT AWARD summa cum laude

Christian Anderson[1], Ying Gao[1], Chris Flask[1, 2], Lan Lu[2, 3]
[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Radiology, Case Western Reserve University, Cleveland, OH, United States; [3]Urology, Case Western Reserve University, Cleveland, OH, United States

Computer 57 3388. Quantitative Evaluation of the Effect of Reduction of Signal Acquisition Number in MR Fingerprinting

Te-Ming Lin[1], Su-Chin Chiu[1], Cheng-Chieh Cheng[1], Wen-Chau Wu[1, 2], Hsiao-Wen Chung[1]
[1]Graduate Institute of Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan; [2]Graduate Institute of Oncology, National Taiwan University, Taipei, Taiwan

Computer 58 3389. Kd-Tree for Dictionary Matching in Magnetic Resonance Fingerprinting

Nicolas Pannetier[1, 2], Norbert Schuff[1, 2]
[1]Radiology, UCSF, San Francisco, CA, United States; [2]VAMC, San Francisco, CA, United States

Computer 59 3390. Three-Dimensional MR Fingerprinting (MRF) and MRF-Music Acquisitions

Dan Ma[1], Eric Y. Pierre[1], Yun Jiang[1], Kawin Setsompop[2], Vikas Gulani[3], Mark A. Griswold[3]
[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]A.A Martinos Center for Biomedical Engineering, MGH, Harvard Medical School, Boston, MA, United States; [3]Radiology, Case Western Reserve University, Cleveland, OH, United States

Computer 60 3391. PET-MRF: One-Step 6-Minute Multi-Parametric PET-MR Imaging Using MR Fingerprinting and Multi-Modality Joint Image Reconstruction

Florian Knoll[1, 2], Martijn A. Cloos[1, 2], Thomas Koesters[1, 2], Michael Zenge[3], Ricardo Otazo[1, 2], Daniel K. Sodickson[1, 2]
[1]Center for Advanced Imaging Innovation and Research (CAI2R), NYU School of Medicine, New York, NY, United States; [2]Bernard and Irene Schwartz Center for Biomedical Imaging, Department of Radiology, NYU School of Medicine, New York, NY, United States; [3]Siemens Medical Solutions USA, Malvern, PA, United States

Computer 61 3392. Comparison of Accuracy and Reproducibility of MR Fingerprinting with Conventional T1 and T2 Mapping

Bernhard Strasser[1], Wolfgang Bogner[1], Peter Bär[1], Gilbert Hangel[1], Elisabeth Springer[1], Vlado Mlynarik[1], Mark A. Griswold[2, 3], Dan Ma[2], Yun Jiang[2], Mathias Nittka[4], Haris Saybasili[4], Siegfried Trattnig[1]
[1]MRCE, Department of Biomedical Imaging and Image-guided Therapy, University of Vienna, Vienna, Austria; [2]Department of Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [3]Radiology, Case Western Reserve University, Cleveland, OH, United States; [4]Siemens Healthcare USA, Inc., Chicago, IL, United States

Computer 62 3393. Lower Bound Signal-To-Noise Ratios and Sampling Durations for Accurate and Precise T1 and T2 Mapping with Magnetic Resonance Fingerprinting

Zhaohuan Zhang[1, 2], Zhe Wang[2, 3], Subashini Srinivasan[2, 3], Kyunghyun Sung[2, 3], Daniel B. Ennis[2, 3]
[1]Department of Physics & Astronomy, Shanghai Jiao Tong University, Shanghai, China; [2]Department of Radiological Sciences, University of California, Los Angles, CA, United States; [3]Department of Bioengineering, University of California, Los Angles, CA, United States

Computer 63 3394. Comparison of Different Approaches of Pattern Matching for MR Fingerprinting

Thomas Amthor[1], Mariya Doneva[1], Peter Koken[1], Jochen Keupp[1], Peter Börnert[1]
[1]Philips Research Europe, Hamburg, Germany

Computer 64 3395. Accuracy Analysis for MR Fingerprinting

Mariya Doneva[1], Thomas Amthor[1], Peter Koken[1], Jochen Keupp[1], Peter Börnert[1]
[1]Philips Research Europe, Hamburg, Germany

Computer 65 **3396. Undersampled High-Frequency Diffusion Signal Recovery Using Model-Free Multi-Scale Dictionary Learning**

ISMRM MERIT AWARD magna cum laude

Enhao Gong[1], Qiyuan Tian[1], John M. Pauly[1], Jennifer A. McNab[2]
[1]Electrical Engineering, STANFORD UNIVERSITY, Stanford, CA, United States; [2]Radiology, STANFORD UNIVERSITY, Stanford, CA, United States

Computer 66 **3397. Limitations of T2-Contrast 3D-Fast Spin Echo Sequences in the Differentiation of Radiation Fibrosis Versus Tumor Recurrence**

Andrea Vargas[1], Laurent Milot[2], Simon Graham[1], Philip Beatty[1]
[1]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [2]Sunnybrook Research Institute, Toronto, Canada

Computer 67 **3398. Optimization of Magnetization-Prepared Rapid Gradient-Echo (MP-RAGE) Sequence for Neonatal Brain MRI**

Lili He[1], Jinghua Wang[2], Mark Smith[3], Nehal A. Parikh[1, 4]
[1]Center for Perinatal Research, The Research Institute at Nationwide Children's Hospital, Columbus, OH, United States; [2]Center for Cognitive and Behavioral Brain Imaging, The Ohio State University, Columbus, OH, United States; [3]Radiology Department, Nationwide Children's Hospital, Columbus, OH, United States; [4]Department of Pediatrics, The Ohio State University College of Medicine, Columbus, OH, United States

Computer 68 **3399. T2 Shuffling: Multicontrast 3D Fast Spin Echo Imaging**

Jonathan I. Tamir[1], Weitian Chen[2], Peng Lai[2], Martin Uecker[1], Shreyas S. Vasanawala[3], Michael Lustig[1]
[1]Electrical Engineering and Computer Sciences, University of California, Berkeley, Berkeley, CA, United States; [2]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [3]Radiology, Stanford University, Stanford, CA, United States

Computer 69 **3400. High Contrast-To-Noise Ratio Brain Structural Images Using Magnetization Preparation and TrueFISP Acquisition**

Yi-Cheng Hsu[1], Ying-Hua Chu[1], Shang-Yueh Tsai[2], Wen-Jui Kuo[3], Fa-Hsuan Lin[1]
[1]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan; [2]Institute of Applied Physic, National Chengchi University, Taipei, Taiwan; [3]Institute of Neuroscience, National Yang Ming University, Taipei, Taiwan

Computer 70 **3401. Rapid Whole Brain T1 Rho Mapping**

Bing Wu[1], Nan Hong[2], Zhenyu Zhou[1]
[1]GE healthcare China, Beijing, China; [2]Peking university people's hospital, Beijing, China

Computer 71 **3402. Suppression of Artifacts in Simultaneous 3D T1 and T2*-Weighted Dual-Echo Imaging**

Won-Joon Do[1], Seung Hong Choi[2], Eung Yeop Kim[3], Sung-Hong Park[1]
[1]Korea Advanced Institute of Science and Technology, Daejeon, Korea; [2]Department of Radiology, Seoul National University College of Medicine, Seoul, Korea; [3]Department of Radiology, Gachon University Gil Medical Center, Incheon, Korea

Computer 72 **3403. 2D Reduced Field of View Spiral Inversion Recovery Sequence for High Resolution Multiple Inversion Time Imaging in a Single Breath Hold**

Galen D. Reed[1], Reeve Ingle[1], Ken O. Johnson[1], Juan M. Santos[1], Bob S. Hu[2], William R. Overall[1]
[1]Heartvista, Menlo Park, CA, United States; [2]Cardiology, Palo Alto Medical Foundation, Menlo Park, CA, United States

Electronic Poster
Reconstruction & Processing Algorithms

Exhibition Hall Monday 17:30-18:30

Computer 73 **3404. An Approach to Improve the Effectiveness of Wavelet and Contourlet Compressed Sensing Reconstruction**

Paniz Adipour[1], Michael R. Smith[1, 2]
[1]Electrical and Computer Engineering, University of Calgary, Calgary, Alberta, Canada; [2]Radiology, University of Calgary, Calgary, Alberta, Canada

Computer 74 **3405. Enhanced Reconstruction of Compressive Sensing MRI Via Cross-Domain Stochastically Fully-Connected Random Field Model**

Edward Li[1], Mohammad Javad Shafiee[1], Audrey Chung[1], Farzad Khalvati[2], Alexander Wong[1], Masoom A. Haider[3]

[1]Systems Design Engineering, University of Waterloo, Waterloo, Ontario, Canada; [2]Department of Medical Imaging, University of Toronto, Toronto, Ontario, Canada; [3]Sunnybrook Health Sciences Center, Toronto, Ontario, Canada

Computer 75 **3406. Overcoming the Image Position-Dependent Resolution Inherent in DFT and CS Reconstructions**
Michael R. Smith[1, 2], Jordan Woehr[1], Mathew E. MacDonald, [23], Paniz Adipour[1]
[1]Electrical and Computer Engineering, University of Calgary, Calgary, Alberta, Canada; [2]Radiology, University of Calgary, Calgary, Alberta, Canada; [3]Seaman MR Family Research Centre, University of Calgary, Calgary, Alberta, Canada

Computer 76 **3407. Simultaneuos Magnitude and Phase Regularization in MR Compressed Sensing Using Multi-Frame FREBAS Transform**
Satoshi Ito[1], Mone Shibuya[1], Kenji Ito[1], Yoshifumi Yamada[1]
[1]Utsunomiya University, Utsunomiya, Tochigi, Japan

Computer 77 **3408. Extended Phase Graphs: Understanding a Common Misconception of the Framework Which Leads to the Failure of Programming It Correctly**
Matthias Weigel[1]
[1]Radiological Physics, Dept. of Radiology and Nuclear Medicine, University of Basel Hospital, Basel, Switzerland

Computer 78 **3409. Acquisition Strategy for Limited Support Compressed Sensing**
Pavan Poojar[1], Bikkemane Jayadev Nutandev[1], Amaresha Sridhar Konar[1], Rashmi R. Rao[1], Ramesh Venkatesan[2], Sairam Geethanath[1]
[1]Medical Imaging Research Centre, Dayananda Sagar Institutions, Bangalore, Karnataka, India; [2]Wipro-GE Healthcare, Bangalore, Karnataka, India

Computer 79 **3410. MRI Constrained Reconstruction Without Tuning Parameters Using ADMM and Morozov's Discrepency Principle**
Weiyi Chen[1], Yi Guo[1], Ziyue Wu[2], Krishna S. Nayak[1, 2]
[1]Electrical Engineering, University of Southern California, Los Angeles, CA, United States; [2]Biomedical Engineering, University of Southern California, Los Angeles, CA, United States

Computer 80 **3411. A Fast Algorithm for Tight Frame-Based Nonlocal Transform in Compressed Sensing MRI**
Xiaobo Qu[1], Yunsong Liu[1], Jing Ye[1], Di Guo[2], Zhifang Zhan[1], Zhong Chen[1]
[1]Department of Electronic Science, Xiamen University, Xiamen, Fujian, China; [2]School of Computer and Information Engineering, Xiamen University of Technology, Xiamen, Fujian, China

Computer 81 **3412. A Novel Non Convex Sparse Recovery Method for Single Image Super-Resolution, Denoising and Iterative MR Reconstruction**
Nishant Zachariah[1], Johannes M. Flake[2], Qiu Wang[3], Boris Mailhe[3], Justin Romberg[1], Xiaoping Hu[4], Mariappan Nadar[3]
[1]Department of Electrical and Computer Engineering, Georgia Institute of Technoloy, Atlanta, GA, United States; [2]Department of Mathematics, Rutgers University, New Brunswick, NJ, United States; [3]Imaging and Computer Vision, Siemens Corporate Technology, Princeton, NJ, United States; [4]Department of Biomedical Engineering, Emory University and Georgia Institute of Technology, Atlanta, GA, United States

Computer 82 **3413. Momentum Optimization for Iterative Shrinkage Algorithms in Parallel MRI with Sparsity-Promoting Regularization**
Matthew J. Muckley[1], Douglas C. Noll[1], Jeffrey A. Fessler[2]
[1]Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States; [2]Electrical Engineering and Computer Science, University of Michigan, Ann Arbor, MI, United States

Computer 83 **3414. Parameter-Free Sparsity Adaptive Compressive Recovery (SCoRe)**
Rizwan Ahmad[1], Philip Schniter[1], Orlando P. Simonetti[2]
[1]Electrical and Computer Engineering, The Ohio State University, Columbus, OH, United States; [2]Internal Medicine and Radiology, The Ohio State University, Columbus, OH, United States

Computer 84 **3415. Graph-Based Compressed Sensing MRI Image Reconstruction: View Image Patch as a Vertex on Graph**
Zongying Lai[1, 2], Yunsong Liu[1], Di Guo[3], Jing Ye[1], Zhifang Zhan[1], Zhong Chen[1], Xiaobo Qu[1]
[1]Department of Electronic Science, Xiamen University, Xiamen, Fujian, China; [2]Department of Communication Engineering, Xiamen University, Fujian, China; [3]School of Computer and Information Engineering, Xiamen University of Technology, Xiamen, Fujian, China

Computer 85 **3416. MR Image Reconstruction with Optimized Gaussian Mixture Model for Structured Sparsity**
ISMRM MERIT AWARD magna cum laude
Zechen Zhou[1], Niranjan Balu[2], Rui Li[1], Jinnan Wang, [23], Chun Yuan[1, 2]
[1]Center for Biomedical Imaging Research, Department of Biomedical Engineering, School of Medicine, Tsinghua University, Beijing, China; [2]Vascular Imaging Lab, Department of Radiology, University of Washington, Seattle, WA, United States; [3]Philips Research North America, Briarcliff Manor, NY, United States

Computer 86 **3417. Partial Discreteness: A New Type of Prior Knowledge for MRI Reconstruction**
Gabriel Ramos-Llordén[1], Hilde Segers[1], Willem Jan Palenstijn[1], Arnold J. den Dekker[1, 2], Jan Sijbers[1]
[1]iMinds Vision-Lab, University of Antwerp, Antwerp, Belgium; [2]Delft Center for Systems and Control, Delft University of Technology, Delft, Netherlands

Computer 87 **3418. Novel Non-Local Total Variation Regularization for Constrained MR Reconstruction**
Andres Saucedo[1, 2], Stamatios Lefkimmiatis[3], Stanley Osher[3], Kyunghyun Sung[1, 2]
[1]Department of Radiological Sciences, David Geffen School of Medicine, University of California Los Angeles, Los Angeles, CA, United States; [2]Biomedical Physics Interdepartmental Graduate Program, University of California Los Angeles, Los Angeles, CA, United States; [3]Department of Mathematics, University of California Los Angeles, Los Angeles, CA, United States

Computer 88 **3419. Highly Undersampling MR Image Reconstruction Using Tree-Structured Wavelet Sparsity and Total Generalized Variation Regularization**
Ryan Wen Liu[1], Lin Shi[2], Simon C.H. Yu[1], Defeng Wang[1, 3]
[1]Department of Imaging and Interventional Radiology, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong; [2]Department of Medicine and Therapeutics, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong; [3]Department of Biomedical Engineering and Shun Hing Institute of Advanced Engineering, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong

Computer 89 **3420. META: Multiple Entangled Denoising and Thresholding Algorithms for Suppression of MR Image Reconstruction Artifacts**
Johannes F. M. Schmidt[1], Sebastian Kozerke[1, 2]
[1]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [2]Division of Imaging Sciences and Biomedical Engineering, King's College London, United Kingdom

Computer 90 **3421. Double Smoothing Method-Based Algorithm for MR Image Reconstruction with Partial Fourier Data**
Xiaohui Liu[1], Jinhong Huang[1], Wufan Chen[1], Yanqiu Feng[1]
[1]Guangdong Provincial Key Laborary of Medical Image Processing, School of Biomedical Engineering, Southern Medical University, Guangzhou, Guangdong, China

Computer 91 **3422. MR Image Reconstruction from Under-Sampled Measurements Using Local and Global Sparse Representations**
MingJian Hong[1], MengRan Lin[1], Feng Liu[2], YongXin Ge[1]
[1]ChongQing University, ChongQing, China; [2]ITEE, The University of Queensland, QLD, Australia

Computer 92 **3423. Balanced Sparse MRI Model: Bridge the Analysis and Synthesis Sparse Models in Compressed Sensing MRI**
Yunsong Liu[1], Jian-Feng Cai[2], Zhifang Zhan[1], Di Guo[3], Jing Ye[1], Zhong Chen[1], Xiaobo Qu[1]
[1]Department of Electronic Science, Xiamen University, Xiamen, Fujian, China; [2]Department of Mathematics, University of Iowa, Iowa City, IA, United States; [3]School of Computer and Information Engineering, Xiamen University of Technology, Xiamen, Fujian, China

Computer 93 **3424. Joint MR-PET Reconstruction Using Vector Valued Total Generalized Variation**
Florian Knoll[1, 2], Martin Holler[3], Thomas Koesters[1, 2], Daniel K. Sodickson[1, 2]
[1]Center for Advanced Imaging Innovation and Research (CAI2R), NYU School of Medicine, New York, NY, United States; [2]Bernard and Irene Schwartz Center for Biomedical Imaging, Department of Radiology, NYU School of Medicine, New York, United States; [3]Department of Mathematics and Scientific Computing, University of Graz, Graz, Austria

Computer 94 **3425.** **A New Region Based Volume Wised Method for PET-MR Imaging Using Artificial Neural Network**
ISMRM MERIT AWARD magna cum laude
Chenguang Peng[1], Rong Guo[1], Yicheng Chen[1], Yingmao Chen[2], Quanzheng Li[3], Georges El Fakhr[3], Kui Ying[1]
[1]Key Laboratory of Particle and Radiation Imaging, Ministry of Education, Department of Engineering, Beijing, China; [2]Department of Nuclear Medicine, The general hospital of Chinese People's Liberation, Beijing, China, Beijing, China; [3]Department of Radiology, Division of Nuclear Medicine and Molecular Imaging, Harvard Medical School, Boston, United States

Computer 95 **3426.** **Reliability of MR Sequences Used for Attenuation Correction in PET/MR**
Mathias Lukas[1], Anne Kluge[2], Jorge Cabello[1], Christine Preibisch[2,3], Stephan Nekolla[1]
[1]Department of Nuclear Medicine, Klinikum rechts der Isar, TU München, Munich, Germany; [2]Department of Neuroradiology, Klinikum rechts der Isar, TU München, Munich, Germany; [3]Department of Neurology, Klinikum rechts der Isar, TU München, Munich, Germany

Computer 96 **3427.** **PET Attenuation Correction for PET/MR by Combining MR Segmentation and Selective-Update Joint Estimation**
Lishui Cheng[1], Sangtae Ahn[1], Dattesh Shanbhag[2], Florian Wiesinger[3], Sandeep Kaushik[2], Ravindra Manjeshwar[1]
[1]GE Global Research, Niskayuna, NY, United States; [2]GE Global Research, Bangalore, India; [3]GE Global Research, Munich, Germany

Electronic Poster
Fetal & Pediatric Neuroimaging

Exhibition Hall Tuesday 10:00-11:00

Computer 1 **3428.** **Introducing MANTis: Morphological Adaptive Neonate Tissue Segmentation. Unified Segmentation for Neonates**
Richard Beare[1], Jian Chen[1], Dimitrios Alexopoulos[2], Christopher Smyser[2], Cynthia Rogers[2], Wai Yen Loh[1,3], Lillian Gabra Fam[1], Claire Kelly[1], Jeanie Cheong[1,4], Alicia Spittle[1], Peter Anderson[1,5], Lex Doyle[1,4], Terrie Inder[6], Jeff Neil[6], Marc Seal[1], Deanne Thompson[1]
[1]Murdoch Childrens Research Institute, Parkville, Victoria, Australia; [2]Washington University in St Louis, MO, United States; [3]Florey Institute of Neuroscience and Mental Health, Parkville, Victoria, Australia; [4]Royal Women's Hospital, Parkville, Victoria, Australia; [5]Paediatrics, University of Melbourne, Parkville, Victoria, Australia; [6]Brigham and Women's Hospital, Massachusettes, United States

Computer 2 **3429.** **Magnetic Resonance Fingerprinting for Fetal Imaging at 3T - Initial Results**
Borjan Gagoski[1], Huihui Ye[2], Stephen Cauley[2], Himanshu Bhat[3], Kawin Setsompop[2], Itthi Chatnuntawech[4], Adrian Martin[4,5], Yun Jiang[6], Mark Griswold[6], Elfar Adalsteinsson[4,7], P. Ellen Grant[1], Lawrence Wald[2,7]
[1]Fetal-Neonatal Neuroimaging & Developmental Science Center, Boston Children's Hospital, Harvard Medical School, Boston, MA, United States; [2]A.A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA, United States; [3]Siemens Medical Solutions USA Inc, Charlestown, MA, United States; [4]Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA, United States; [5]Applied Mathematics, Universidad Rey Juan Carlos, Madrid, Spain; [6]Biomedical Enginneering, Case Western Reserve University, Cleveland, OH, United States; [7]Harvard-MIT Health Sciences and Technology, Massachusetts Institute of Technology, Cambridge, MA, United States

Computer 3 **3430.** **Brain Network Modular Fingerprint of Premature Born Children**
Elda Fischi-Gomez[1,2], Alessandra Griffa[1,3], Emma Muñoz-Moreno[4], Lana Vasung[5], Cristina Borradori-Tolsa[5], François Lazeyras[6], Jean-Philippe Thiran[1,3], Petra Susan Hüppi[5]
[1]Signal Processing Laboratory 5, École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, (VD), Switzerland; [2]Division of Development and Growth. Department of Pediatrics, University of Geneva, Geneva, (GE), Switzerland; [3]Department of Radiology, University Hospital Center (CHUV) and University of Lausanne (UNIL), Lausanne, (VD), Switzerland; [4]Fetal and Perinatal Medicine Research Group, Institut d'Investigacions Biomediques August Pi i Sunyer, IDIBAPS, Barcelona, (B), Spain; [5]Division of Development and Growth. Department of Pediatrics , University of Geneva, Geneva, (GE), Switzerland; [6]Department of Radiology and Medical Informatics, Faculty of Medicine, University of Geneva, Geneva, (GE), Switzerland

Computer 4 **3431.** **Quantitative Analysis of Global Pattern of Early Cortical Folding in Polymicrogyria Fetal Brains**
Kiho Im[1], Alexandre Guimaraes[1], Borjan Gagoski[1], Caitlin Rollins[1], Edward Yang[1], P. Ellen Grant[1]
[1]Boston Children's Hospital, Harvard Medical School, Boston, MA, United States

Computer 5 **3432.** **Piecewise Diffusion Tensor Estimation for Fetal Imaging Application**
Uday Krishnamurthy[1,2], Ramtilak Gattu[1], Pavan Kumar Jella[1], Jaladhar Neelavalli[1,2], Ewart Mark Haacke[1,2]

[1]Department of Radiology, Wayne State University, Detroit, MI, United States; [2]Department of Biomedical Engineering, Wayne State University, Detroit, MI, United States

Computer 6 **3433. Sphingosin-1-Phosphate-Receptor Modulation Ameliorates Neonatal White Matter Damage and Improves Long-Term Cognitive Development**

Yohan van de Looij[1, 2], Meray Serdar[3], Petra S. Hüppi[1], Ursula Felderhoff-Müser[3], Ivo Bendix[3], Stéphane V. Sizonenko[1]
[1]Division of Child Growth and Development, University of Geneva, Geneva, Switzerland; [2]Laboratory for Functional and Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [3]Department of Pediatrics, University Hospital Essen, Essen, Germany

Computer 7 **3434. Abnormal Whiter Matter Connectivity Network Organization in Children with Autism Spectrum Disorder Using Diffusion Tensor Imaging**

Shijun Li[1], Yi Wang[2], Long Qian[3], Lin Ma[4]
[1]Department of Medical Instruments, PLA General Hospital, Beijing, China; [2]Department of Stomatology, PLA General Hospital, Beijing, China; [3]Department of Biomedical Engineering, Peking University, Beijing, China; [4]Department of Radiology, PLA General Hospital, Beijing, China

Computer 8 **3435. Impaired White Matter Cerebrovascular Reactivity in Sickle Cell Disease Is Associated with Decreased White Matter Structural Integrity**

Paula L. Croal[1], Junseok Kim[1], Jackie Leung[1], Andrea Kassner[1, 2]
[1]Physiology & Experimental Medicine, The Hospital for Sick Children, Toronto, Ontario, Canada; [2]Medical Imaging, University of Toronto, Toronto, Ontario, Canada

Computer 9 **3436. Differential Involvement of Long Versus Short Range WM Connections in CVI**

Corinna M. Bauer[1, 2], Bang-Bon Koo[3], Lauren Zajac[3], Lotfi B. Merabet[1, 2]
[1]Massachusetts Eye and Ear Infirmary, Boston, MA, United States; [2]Harvard Medical School, Boston, MA, United States; [3]Boston University School of Medicine, MA, United States

Computer 10 **3437. Different Genetic Mutations Are Associated with Different Abnormal Patterns of Language White Matter Pathways in Young Children with Global Developmental Delay**

JEONG-WON JEONG[1], Senthil Sundaram[1], Diane C. Chugani[1], Harry T. Chugani[1]
[1]Pediatrics and Neurology, Wayne State University, Detroit, MI, United States

Computer 11 **3438. Objective Differentiation of Pure Speech Delay from Global Developmental Delay in Young Children: DWI Tractography-Based Connectome Study**

JEONG-WON JEONG[1, 2], Senthil Sundaram[1, 2], Diane C. Chugani[1, 2], Harry T. Chugani[1, 2]
[1]Pediatrics and Neurology, Wayne State University, Detroit, MI, United States; [2]Translational Imaging Laboratory, Children's Hospital of Michigan, Detroit, MI, United States

Computer 12 **3439. Brain Connectivity Increases Concurrent with Functional Improvement: Evidence from Connectome MRI in Children with Cerebral Palsy During Therapy**

ISMRM MERIT AWARD magna cum laude

Zoe Englander[1, 2], Jessica Sun[3, 4], Laura Case[5], Mohamad Mikati[3], Joanne Kurtzberg[3, 6], Allen W. Song[1, 7]
[1]Brain Imaging and Analysis Center, Duke University, Durham, NC, United States; [2]Department of Biomedical Engineering, Duke University, Durham , NC, United States; [3]Department of Pediatrics, Duke University, Durham, NC, United States; [4]The Robertson Cell and Translational Therapy Center, Duke University, Durham , NC, United States; [5]Department of Physical Therapy, Duke University, Durham, NC, United States; [6]The Robertson Cell and Translational Therapy Center, Duke University, Durham, NC, United States; [7]Department of Radiology, Duke University, Durham , NC, United States

Computer 13 **3440. Minimum Spanning Trees Reveal the Development of Functional Connectivity in the Preterm Brain**

Gareth Ball[1], Ricardo P. Monti[2, 3], Paul Aljabar[1], Nora Tusor[1], Nazakat Merchant[1], Tomoki Arichi[1], Giovanni Montana[2, 3], Serena J. Counsell[1], A David Edwards[1]
[1]Centre for the Developing Brain, Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom; [2]Department of Biomedical Engineering, Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom; [3]Department of Mathematics, Imperial College London, London, United Kingdom

Computer 14 **3441. Resting State Network Development in Very Preterm Infants**
Lili He[1], Nehal A. Parikh[1, 2]
[1]Center for Perinatal Research, The Research Institute at Nationwide Children's Hospital, Columbus, OH, United States; [2]Department of Pediatrics, The Ohio State University College of Medicine, Columubs, OH, United States

Computer 15 **3442. Altered Intrinsic Anterior Insular Connectivity Underlying Social Improvements in Younger Children with Autism Spectrum Disorders**
Wenjuan Wei[1], Minghao Dong[2], Yan Bai[3], Wei Qin[2], Ruwei Dai[1], Meiyun Wang[3], Dapeng Shi[3], Jie Tian[1, 2]
[1]Key Laboratory of Molecular Imaging, Institute of Automation, Chinese Academy of Science, Beijing, China; [2]School of Life Sciences and Technology, Xidian University, Xi'an, Shanxi, China; [3]Department of Radiology, Henan Provincial People's Hospital, zhengzhou, Henan, China

Computer 16 **3443. A Longitudinal Resting State Functional MRI Study of Children with Hemiplegic Cerebral Palsy Treated with Constraint Therapy**
Kathryn Yvonne Manning[1], Darcy Fehlings[2], Ronit Mesterman[3], Jan Willem Gorter[4], Lauren Switzer[2], Craig Campbell[5], Ravi S. Menon[6]
[1]Medical Biophysics, University of Western Ontario, London, Ontario, Canada; [2]Department of Paediatrics, Holland Bloorview Kids Rehabilitation Hospital, Toronto, Ontario, Canada; [3]CanChild Centre for Childhood Disability Research, McMaster Children's Hospital, Hamilton, Ontario, Canada; [4]CanChild Centre for Childhood Disability Research, McMaster University, Hamilton, Ontario, Canada; [5]Department of Paediatrics, University of Western Ontario, London, Ontario, Canada; [6]Centre for Functional and Metabolic Mapping, University of Western Ontario, London, Ontario, Canada

Computer 17 **3444. Decrease in Functional Network Segregation in Infants with Congenital Heart Defects**
Vincent Jerome Schmithorst[1], Jodie Votava-Smith[2], Vincent Lee[1], Vidya Rajagopalan[2], Shaheda Suleiman[2], Lisa Paquette[2], Ashok Panigrahy[1]
[1]Radiology, Children's Hospital of Pittsburgh of UPMC, Pittsburgh, PA, United States; [2]Children's Hospital Los Angeles, Los Angeles, CA, United States

Computer 18 **3445. Global Structural Network Topology Mediates Neurocognitive Outcome in Children with Congenital Heart Defects**
Vincent Jerome Schmithorst[1], Ashok Panigrahy[1], Jessica Wisnowski[1], Chris Walsh[2], David Bellinger[2], Jane Newburger[2], Michael Rivkin[2]
[1]Radiology, Children's Hospital of Pittsburgh of UPMC, Pittsburgh, PA, United States; [2]Boston Children's Hospital, Boston, MA, United States

Computer 19 **3446. CSF Dynamic in a Population of Children with Intracranial CSF Increase**
Florine Dallery[1], Catherine Gondry-Jouet[1], Cyrille Capel[2], Anthony Fichten[2], Malek Makki[3], Bader Chaarani[4], Roger Bouzerar[4], Olivier Balédent[4]
[1]Radiology, Jules Verne University of Picardie and Amiens University Hospital, Amiens, Picardie, France; [2]Neurosurgery, Amiens University Hospital, Picardie, France; [3]MRI Research Center, University Children Hospital of Zurich, Zurich, Switzerland; [4]Imaging, Amiens University Hospital, Picardie, France

Computer 20 **3447. The Effect of Therapeutic Hypothermia on Cerebral Metabolism in Neonates with Hypoxic-Ischemic Encephalopathy**
Jessica L. Wisnowski[1], Aaron J. Reitman[1], Tai-Wei Wu[2], Jonathan M. Chia[3], Eugenia Ho[1], Claire McLean[1], Philippe Friedlich[1], Ashok Panigrahy[4], Stefan Bluml[1, 5]
[1]Children's Hospital Los Angeles/USC, Los Angeles, CA, United States; [2]Chang Gung Memorial Hospital, Lankou, Taiwan; [3]Philips Healthcare, Cleveland, OH, United States; [4]Children's Hospital of Pittsburgh, Pittsburgh, PA, United States; [5]Rudi Schulte Research Institute, Santa Barbara, CA, United States

Computer 21 **3448. Is Fetal Hypoxia a Precursor of Neonatal White Matter Changes in Congenital Heart Disease?**
Prakash Muthusami[1], Sujana Madathil[2], Susan Blaser[3], Edgar Jaeggi[2], Lars Grosse-Wortmann[2], Shi-Joon Yoo[1], John Kingdom[4], Edward Hickey[5], John Sled[6], Christopher Macgowan[6], Steven Miller[7], Mike Seed[2]
[1]Division of Cardiac Imaging, Department of Diagnostic Imaging, The Hospital for Sick Children, University of Toronto, Toronto, Ontario, Canada; [2]Division of Cardiology, Department of Pediatrics, The Hospital for Sick Children, University of Toronto, Toronto, Ontario, Canada; [3]Division of Neuroradiology, Department of Diagnostic Imaging, The Hospital for Sick Children, University of Toronto, Toronto, Ontario, Canada; [4]Department of Obstetrics and Gynaecology, Mount Sinai Hospital, Toronto, Ontario, Canada; [5]Department of Cardiovascular Surgery, The Hospital for Sick Children, University of Toronto, Toronto, Ontario, Canada;

[6]Department of Physiology & Experimental Medicine, The Hospital for Sick Children, University of Toronto, Toronto, Ontario, Canada; [7]Department of Neurology, The Hospital for Sick Children, University of Toronto, Toronto, Ontario, Canada

Computer 22 **3449. Maternal Obesity Negatively Affects Offspring's Brain White Matter Development**
Xiawei Ou[1], [2], Aline Andres, [3], Keshari M. Thakali, Kartik Shankar, [3], Thomas Badger, [3]
[1]Arkansas Children's Hospital Research Institute, Arkansas Children's Nutrition Center, Little Rock, AR, United States; [2]Radiology and Pediatircs, University of Arkansas for Medical Sciences, Little Rock, AR, United States; [3]University of Arkansas for Medical Sciences, AR, United States

Computer 23 **3450. The Effect of Weight Loss on Brain Microstructure in Obese Middle-Aged Women**
Clifford Chan[1], Heather Collins[1], Patrick M. O'Neil[2], Joshua Brown[2], Joseph A. Helpern[1], Andreana Benitez[1]
[1]Department of Radiology and Radiological Sciences, Medical University of South Carolina, Charleston, SC, United States; [2]Weight Management Center, Department of Psychiatry and Behavioral Sciences, Medical University of South Carolina, Charleston, SC, United States

Computer 24 **3451. Childhood Obesity Is Associated with Lower Grey Matter Volume in Children**
Xiawei Ou[1], [2], Aline Andres, [3], R.T. Pivik, [3], Mario Cleves, [3], Thomas Badger, [3]
[1]Arkansas Children's Hospital Research Institute, Arkansas Children's Nutrition Center, Little Rock, AR, United States; [2]Radiology and Pediatrics, University of Arkansas for Medical Sciences, Little Rock, AR, United States; [3]University of Arkansas for Medical Sciences, AR, United States

Electronic Poster
Normal Developing Brain

Exhibition Hall Tuesday 10:00-11:00

Computer 25 **3452. Inhomogeneous Magnetization Transfer: Developmental Changes During Childhood**
Alyssa Mah[1], R Marc Lebel[2], [3], David C. Alsop[4], Gopal Varma[4], Catherine Lebel[3]
[1]Biomedical Engineering Program, University of Calgary, Calgary, AB, Canada; [2]General Electric Healthcare Canada, Calgary, AB, Canada; [3]Radiology, University of Calgary, Calgary, AB, Canada; [4]Radiology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, United States

Computer 26 **3453. Investigating Cortical Myelination and Maturation Using Quantitative Myelin Water Fraction and Relaxation Time Imaging**
Sean Deoni[1], Justin Remer[1], Douglas Dean[1], Jonathan O'Muircheartaigh[2]
[1]Advanced Baby Imaging Lab, Brown University, Providence, RI, United States; [2]Neuroimaging, King's College London, London, England, United Kingdom

Computer 27 **3454. Validating a Cross-Sectional Brain Development Index with Longitudinal Brain Images**
Bo Cao[1], Benson Mwangi[1], Khader M. Hasan[2], Sudhakar Selvaraj[1], Giovana B. Zunta-Soares[1], Jair C. Soares[1]
[1]Psychiatry and Behavioral Sciences, University of Texas Health Science Center at Houston, Houston, TX, United States; [2]Department of Diagnostic & Interventional Imaging, University of Texas Health Science Center at Houston, Houston, TX, United States

Computer 28 **3455. Examining the Relationships Between Cortical Maturation and White Matter Myelination Throughout Early Childhood**
Elise Croteau-Chonka[1], Justin Remer[2], Jonathan O'Muircheartaigh[3], Holly Dirks[2], Doug Dean III[4], Sean Deoni[2]
[1]Advanced Baby Imaging Lab, Brown University, Providence, RI, United States; [2]Advanced Baby Imaging Lab, Brown University, RI, United States; [3]King's College London, England, United Kingdom; [4]Waisman Center, University of Wisconsin-Madison, WI, United States

Computer 29 **3456. Age-Related R2* Values Variation in Gray Matter from Birth to 5 Years Detected by Using an Atlas-Based Analysis**
Ning Ning[1], [2], Yajie Hu[1], [3], Xianjun Li[1], [3], Qinli Sun[1], Yanyan Li[1], Jian Yang[1], [3]
[1]Department of Radiology, The First Affiliated Hospital of Medical College, Xi'an Jiaotong University, Xi'an, Shaanxi, China; [2]Department of Nuclear medicine, The Second Affiliated Hospital of Medical College, Xi'an Jiaotong University, Xi'an, Shaanxi, China; [3]Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, Shaanxi, China

Computer 30 **3457. Regional Differences in CVR Developmental Patterns in Healthy Children**
Jackie Leung[1], Junseok Kim[2], Przemyslaw Kosinski[2], Andrea Kassner[1, 3]
[1]The Hospital for Sick Children, Toronto, Ontario, Canada; [2]Institute of Medical Science, University of Toronto, Toronto, Ontario, Canada; [3]Medical Imaging, University of Toronto, Toronto, Ontario, Canada

Computer 31 **3458. Investigating the Age Modulation of Functional Connectivity in a Pediatric Population Using Multi-Echo EPI**
Binjian Sun[1], Thomas G. Burns[1], Thaddeus Reece[1], Laura L. Hayes[1], Kamilah Hendrix[1], Richard A. Jones[1, 2]
[1]Children's Healthcare of Atlanta, Atlanta, GA, United States; [2]Emory University, Atlanta, GA, United States

Computer 32 **3459. The Influence of Birth Weight on Brain Network Construction in Neonates**
Yajie Hu[1, 2], Xianjun Li[1, 2], Mengye Lyu[1, 2], Yanyan Li[1], Huan Li[1], Miaomiao Wang[1], Jian Yang[1, 2]
[1]Department of Diagnostic Radiology, The First Hospital of Medical School, Xi'an Jiaotong University, Xi'an, Shaanxi, China; [2]Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, Shaanxi, China

Computer 33 **3460. Optimized Multi-Shell HARDI Acquisiton with Alternating Phase Encoding Directions for Neonatal DMRI**
ISMRM MERIT AWARD magna cum laude
Jana Hutter[1, 2], Jacques-Donald Tournier[1], Emer J. Hughes[1], Anthony N. Price[1], Lucilio Cordero-Grande[1, 2], Rita G. Nunes[1], Rui Pedro A. G. Teixeira[1, 2], Serena J. Counsell[1], Jesper L. R. Andersson[3], Daniel Rueckert[4], A. David Edwards[1, 2], Jo V. Hajnal[1, 2]
[1]Centre for the Developing Brain, King's College London, London, United Kingdom; [2]Division of Imaging Sciences and Biomedical Engineering, King's College London, London, United Kingdom; [3]FMRIB, Oxford, Oxfordshire, United Kingdom; [4]Biomedical Image Analysis Group, Department of Computing, Imperial College London, London, United Kingdom

Computer 34 **3461. High-Field Neurite Orientation Dispersion and Density Imaging of Sheep Brain Development**
Yohan van de Looij[1], Justin M. Dean[2], Alistair J. Gunn[2], Petra S. Hüppi[1], Stéphane V. Sizonenko[1]
[1]Division of Child Growth and Development, University of Geneva, Geneva, Switzerland; [2]Department of Physiology, University of Auckland, Auckland, New Zealand

Computer 35 **3462. How Does White Matter Microstructure Change in Human Early Development Based on WMTI and NODDI?**
Ileana O. Jelescu[1], Jelle Veraart[1], Vitria Adisetiyo[1], Sarah Milla[1], Dmitry S. Novikov[1], Els Fieremans[1]
[1]Center for Biomedical Imaging, Dept. of Radiology, NYU Langone Medical Center, New York, United States

Computer 36 **3463. NODDI Intra-Axonal Volume Fraction Shows Stronger Correlation with Developmental Age Than Fractional Anisotropy in Preterm Human Newborns**
Nicolas Kunz[1], Juliane Schneider[2], Lana Vasung[3], Hui Zhang[4], Patrick Hagmann[5], Anita C. Truttmann[2], François Lazeyras[6], Petra Susan Hüppi[3]
[1]CIBM-AIT, EPFL, Lausanne, Vaud, Switzerland; [2]Unit of Neonatology and Follow up, Department of Pediatrics, Centre hospitalier universitaire Vaudois (CHUV), Vaud, Switzerland; [3]Division of Development and Growth , Dept of Pediatrics , University of Geneva, Geneva, Switzerland; [4]Computer Science, University College London, London, United Kingdom; [5]Department of Radiology, Centre hospitalier universitaire Vaudois (CHUV), Vaud, Switzerland; [6]Department of Radiology-CIBM, Geneva University Hospitals (HUG), Geneva, Switzerland

Computer 37 **3464. White Matter Changes of Neurite Density and Fiber Orientation Dispersion During Human Brain Maturation**
Yi-Shin Chang[1], Julia P. Owen[1], Nicholas J. Pojman[1], Tony Thieu[1], Polina Bukshpun[1], Mari Wakahiro[1], Jeffrey Berman[2], Timothy Roberts[2], Srikantan Nagarajan[1], Elliott Sherr[1], Pratik Mukherjee[1]
[1]University of California in San Francisco, San Francisco, CA, United States; [2]Children's Hospital of Philadelphia, PA, United States

Computer 38 **3465. Improved High-Resolution Diffusion Spectrum Imaging in Young and Normal Aging Monkeys**
Zheng Wang[1], Qinying Jiang[1], Qiming Lv[1], Dazhi Yin[1], Zhuangming Shen[1]
[1]Institute of Neuroscience, Chinese Academy of Sciences, Shanghai, China

Computer 39 **3466. Combination of High Resolution *Ex Vivo* Diffusion Tensor Imaging and Tract-Based Spatial Statistics Serve as a Valuable User-Independent Method to Evaluate Long-Term Effects of an Inflammatory Exposure in the Neonatal Rat Brain**
Chen Jin[1], Alexandre Castonguay[2], Julie Tremblay[1], Philippe Pouliot[2, 3], Irene Londono[1], Frédéric Lesage[2, 3], Gregory A. Lodygensky[1, 3]
[1]Research Centre CHU Sainte-Justine, Montreal, Quebec, Canada; [2]École Polytechnique de Montréal, Montreal, Quebec, Canada; [3]Montreal Heart Institute, Montreal, Quebec, Canada

Computer 40 **3467. Birth Weight Influence White Matter Development in Neonates: A Diffusion Tensor Study Based on Tract-Based Spatial Statistics**
Yanyan Li[1], Xianjun Li, [12], Jie Gao[1], Qinli Sun[1], Huan Li[1], Jian Yang[1, 2]
[1]Department of radiology, the first affiliated hospital of medical college, Xi'an Jiaotong University, Xi'an, Shaanxi, China; [2]Department of Biomedical Engineering, School of Life Science and Technology, Xi' an Jiaotong University, Xi'an, Shaanxi, China

Computer 41 **3468. Comparison Between the Single-Compartment and Two-Compartment Parameters Derived from Diffusion Kurtosis Imaging in Assessing the Axon Growth**
Xianjun Li[1, 2], Jie Gao[1], Qinli Sun[1], Yanyan Li[1], Huan Li[1], Mingxi Wan[2], Jian Yang[1, 2]
[1]Radiology Department of the First Affiliated Hospital, Xi'an Jiaotong University, Xi'an, Shaanxi, China; [2]Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, Shaanxi, China

Computer 42 **3469. Exploring the Early Organization and Maturation of Linguistic Pathways in the Human Infant Brain**
Jessica Dubois[1, 2], Cyril Poupon[3], Bertrand Thirion, [24], Sofya Kulikova[5], François Leroy[1, 2], Lucie Hertz-Pannier[5], Ghislaine Dehaene-Lambertz[1, 2]
[1]Cognitive Neuroimaging Unit, INSERM, Gif-sur-Yvette, France; [2]NeuroSpin, CEA, Gif-sur-Yvette, France; [3]NeuroSpin, UNIRS, CEA, Gif-sur-Yvette, France; [4]Parietal, INRIA, Gif-sur-Yvette, France; [5]NeuroSpin, UNIACT, U1129, INSERM-CEA, Gif-sur-Yvette, France

Computer 43 **3470. The Role of Glial Fibers in Human Fetal Connectome with High Resolution Diffusion Tensor Imaging**
Virendra Mishra[1], Tina Jeon[2], Mihovil Pletikos[3], Nenad Sestan[3], Hao Huang[1]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, TX, United States; [3]Department of Neurobiology, Yale University, CT, United States

Computer 44 **3471. Sex Differences in the Frontal Lobe of the Developing Mouse Brain**
Da Shi[1, 2], Jiachen Zhuo[1, 2], Su Xu[1, 2], Jaylyn Waddell[3], Rao P. Gullapalli[1, 2]
[1]Core for Translational Research in Imaging at University of Maryland, University of Maryland School of Medicine, Baltimore, MD, United States; [2]Department of Diagnostic Radiology and Nuclear Medicine, University of Maryland School of Medicine, Baltimore, MD, United States; [3]Department of Pediatrics, University of Maryland School of Medicine, Baltimore, MD, United States

Computer 45 **3472. The Detection of Microstructural Changes in Cerebral Gray Matter Nuclei Between Healthy Neonates and Young Adults by Diffusional Kurtosis Imaging**
Qinli Sun[1], Xianjun Li[1, 2], Yanyan Li[1], Jie Gao[1], Huan Li[1], Jian Yang[1, 3]
[1]Department of Diagnostic Radiology, The First Hospital of Medical School, Xi'an Jiaotong University, Xi'an, Shaanxi, China; [2]Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, Shaanxi,, China; [3]Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, Shaanxi, China

Computer 46 **3473. Population-Averaged Age-Specific DTI Templates of Preterm Human Brain at 33, 36 and 39 Gestational Weeks**
Virendra Mishra[1], Kenichi Oishi[2], Hang Li[1, 3], Tina Jeon[1], Minhui Ouyang[1], Lina Chalak[4], Jonathan M. Chia[5], Yun Peng[3], Nancy Rollins[6], Susumu Mori[2], Hao Huang[7, 8]
[1]Advanced Imaging Research Center , University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Department of Radiology and Radiological Science, The Johns Hopkins University School of Medicine, Baltimore, MD, United States; [3]Department of Radiology, Beijing Children's Hospital Affiliated to Capital Medical University, Beijing, China; [4]Department of Pediatrics, University of Texas Southwestern Medical Center, Dallas, TX, United States; [5]Philips Medical Systems, Dallas, TX, United States; [6]Department of Radiology, Children's Medical Center at Dallas, Dallas, TX, United States; [7]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [8]Department of Radiology, University of Texas Southwestern Medical Center, Dallas, TX, United States

Computer 47 **3474. Comprehensive Assessment of the Regional Microstructure of the Preterm Human Brain Cerebral Cortex Using DKI and DTI**

Tina Jeon[1], Austin Ouyang[1], Virendra Mishra[1], Alejandra Perez[1], Lina Chalak[2], Jonathan Chia[3], Muraleedharan Sivarajan[2], Nancy Rollins[4], Hao Huang[1]
[1]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States; [2]Department of Pediatrics, UT Southwestern Medical Center, Dallas, TX, United States; [3]Philips Medical Systems, Dallas, TX, United States; [4]Department of Radiology, Children's Medical Center at Dallas, Dallas, TX, United States

Computer 48 **3475. White Matter Structural Development from Mid-Fetal Stage to Normal Time of Birth**

Austin Ouyang[1], Qiaowen Yu[2], Virendra Mishra[1], Lina Chalak[3], Tina Jeon[1], Jonathan M. Chia[4], Muraleedharan Sivarajan[3], Nancy Rollins[5], Shuwei Liu[2], Hao Huang[1, 6]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Research Center for Sectional and Imaging Anatomy, Shandong University School of Medicine, Shandong, China; [3]Department of Pediatrics, University of Texas Southwestern Medical Center, Dallas, TX, United States; [4]Philips Healthcare, Cleveland, OH, United States; [5]Department of Radiology, Children's Medical Center, Dallas, TX, United States; [6]Department of Radiology, University of Texas Southwestern Medical Center, TX, United States

Electronic Poster
Neuroanatomy & Tissue Characterization

Exhibition Hall Tuesday 10:00-11:00

Computer 49 **3476. Optimized Vascular Signal Reduction in Contrast Enhanced 3D T1 Turbo Spin Echo Imaging**

Neville D. Gai[1], John A. Butman[1]
[1]Radiology & Imaging Sciences, NIH, Bethesda, MD, United States

Computer 50 **3477. A 16-Channel Double-Row Microstrip Array for Human Head Parallel Imaging at Ultrahigh Fields**

Xinqiang Yan[1, 2], Jan Ole Pedersen[3], Long Wei[2], Xiaoliang Zhang[4], Rong Xue[1]
[1]State Key Laboratory of Brain and Cognitive Science, Beijing MRI Center for Brain Research, Institute of Biophysics, Chinese Academy of Sciences, Beijing, China; [2]Key Laboratory of Nuclear Analysis Techniques, Institute of High Energy Physics, Chinese Academy of Sciences, Beijing, China; [3]Sino-Danish Center, University of Chinese Acaemy of Sciences, Beijing, China; [4]Department of Radiology and Biomedical Imaging, University of California San Francisco and UCSF/UC Berkeley Joint Graduate Group in Bioengineering, San Francisco, CA, United States

Computer 51 **3478. Eight-Channel ICE-Decoupled Monopole RF Array for Ultrahigh Field Human Head MR Imaging**

Xinqiang Yan[1, 2], Long Wei[2], Rong Xue[1], Xiaoliang Zhang[3]
[1]State Key Laboratory of Brain and Cognitive Science, Beijing MRI Center for Brain Research, Institute of Biophysics, Chinese Academy of Sciences, Beijing, China; [2]Key Laboratory of Nuclear Analysis Techniques, Institute of High Energy Physics, Chinese Academy of Sciences, Beijing, China; [3]Department of Radiology and Biomedical Imaging, University of California San Francisco and UCSF/UC Berkeley Joint Graduate Group in Bioengineering, San Francisco, CA, United States

Computer 52 **3479. Optimized Processing for Various TEs for Generation of Angiography**

Uehwan Kim[1], Hyunwook Park[1]
[1]Department of Electrical Engineering, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea

Computer 53 **3480. Toward High Resolution Anatomical Imaging of Large *Ex Vivo* Brain Samples with Specialized 9.4T RF Coils**

Shubharthi Sengupta[1], Mark van Zandvoort[2], Dean Paes[2], Ralf Galuske[3], Rainer Goebel[1], Alard Roebroeck[1]
[1]Dept. of Cognitive Neuroscience, Maastricht University, Maastricht, Netherlands; [2]Maastricht University, Netherlands; [3]Fachbereich Biologie, Technische Universität Darmstadt, Germany

Computer 54 **3481. Construction of MRI 3D High Resolution Sheep Brain Templates and the Use of Optimized Prior Probability Maps to Extract Structures in the Central Nervous System**

Arsene Longin Ella[1], Matthieu Keller[1]
[1]Department of Reproductive Physiology and Behavior, INRA - Centre Val de Loire UMR 7247 - CNRS - University of Tours – IFCE, Nouzilly, Tours, France

Computer 55 3482. *In Vivo* Quantification of Human Hippocampal Subfields in Health and in Organic Amnesia Using 7.0-Tesla 0.4mm2 3-D Fast Spin Echo Imaging
Clive R. Rosenthal[1], Thomas D. Miller[1], Tammy W C Ng[2], Stuart Golodetz[3], Christopher Kennard[1], Penny A. Gowland[4]
[1]Clinical Neurosciences, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]Department of Anaesthesia, Univerisity College London Hospital, London, United Kingdom; [3]Computer Science, University of Oxford, Oxford, Oxfordshire, United Kingdom; [4]Sir Peter Mansfield Magnetic Resonance Centre, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

Computer 56 3483. MP2RAGE for Deep Gray Matter Measurement of the Brain: A Comparative Study with MPRAGE
Gosuke Okubo[1], Tomohisa Okada[1], Akira Yamamoto[1], Mitunori Kanagaki[1], Yasutaka Fushimi[1], Tsutomu Okada[1], Kaori Togashi[1]
[1]Department of Diagnostic Imaging and Nuclear Medicine, Kyoto University Graduate School of Medicine, Kyoto, Japan

Computer 57 3484. ExTracT: Extracting Tract Terminations Using Diffusion Imaging
Claude J. Bajada[1], Hamied A. Haroon[2], Hojjatollah Azadbakht[2], Geoff J. M. Parker[2], Matthew A. Lambon Ralph[1], Lauren L. Cloutman[1]
[1]Neuroscience and Aphasia Research Unit, School of Psychological Sciences, The University of Manchester, Manchester, United Kingdom; [2]Centre for Imaging Science, Institute of Population Health, The University of Manchester, Manchester, United Kingdom

Computer 58 3485. Imaging Macaque Cortical Myeloarchitecture
Frank Q. Ye[1], Xiaomin Yue[2]
[1]Neurophysiology Imaging Facility, National Institute of Mental Health, National Institutes of Health, Bethesda, MD, United States; [2]Laboratory of Brain Cognition, National Institute of Mental Health, National Institutes of Health, Bethesda, MD, United States

Computer 59 3486. Diffusion Tensor Tractography of Human Spinocerebellar, Cortico-Ponto-Cerebellar and Dentate-Rubro-Thalamo-Cortical Pathways
Khader M. Hasan[1], Zafer Keser[2], Arash Kamali[3], Nuray Yozbatiran[2], Gerard E. Francisco[2]
[1]Diagnostic and Interventional Imaging, University of Texas Health Science Center, Houston, TX, United States; [2]Physical Medicine and Rehabilitation, University of Texas Health Science Center and TIRR NeuroRecovery Research Center, Houston, TX, United States; [3]Department of Diagnostic Radiology, Division of Neuroradiology, Johns Hopkins University, MD, United States

Computer 60 3487. MR-Based Anatomical Covariance Predicts Brain Structural Connectivity in Mice
Yohan Yee[1, 2], Jacob Ellegood[2], Jason P. Lerch, [12]
[1]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [2]Mouse Imaging Centre, Hospital for Sick Children, Toronto, Ontario, Canada

Computer 61 3488. A Novel Method of G-Ratio Measurement in White Matter with Validation of Monte Carlo Simulation
ISMRM MERIT AWARD magna cum laude
Mu Lin[1], Hongjian He[1], Congyu Liao[1], Jianhui Zhong[1]
[1]Center for Brain Imaging Science and Technology, Zhejiang University, China, Hangzhou, Zhejiang, China

Computer 62 3489. A Population-Averaged Whole Brain Myelin Concentration Map Using ViSTa Myelin Water Imaging
Se-Hong Oh[1], Jiwon Nam[2], Joon Yul Choi[2], Jongho Lee[2]
[1]Imaging Institute, Cleveland Clinic Foundation, Cleveland, OH, United States; [2]Department of Electrical and Computer Engineering, Seoul National University, Seoul, Korea

Computer 63 3490. Corticospinal Tract Diffusivity Is Related to Motor Cortex Surface Area in Healthy Controls
Niels Bergsland[1, 2], Maria Marcella Laganà[1], Eleonora Tavazzi[1], Francesca Baglio[1], Paola Tortorella[1], Matteo Caffini[2], Mario Clerici[1], Giuseppe Baselli[2], Marco Rovaris[1]
[1]IRCCS, Fondazione Don Gnocchi, Milan, MI, Italy; [2]Dipartimento di Elettronica, Informatica e Bioingegneria, Politecnico di Milano, Milan, MI, Italy

Computer 64 3491. Prenatal Inflammation and Stress Impairs Neurodevelopmental Trajectories as Measured by T2-Relaxometry
J. Keiko McCreary[1], L. Sorina Truica[1], Ashlee Matkin[2], Albert R. Cross[3], David M. Olson[4], Gerlinde A. S. Metz[1]
[1]Neuroscience, University of Lethbridge, Lethbridge, Alberta, Canada; [2]Faculty of Medicine, University of Alberta, Alberta, Canada; [3]Departments of Physics and Neuroscience, University of Lethbridge, Alberta, Canada; [4]Departments of Obstetrics & Gynecology, Pediatrics and Physiology, University of Alberta, Alberta, Canada

Computer 65 **3492. The Effect of the Chemotherapy Agent Methotrexate on the Developing Brain**
Leigh Spencer Noakes[1], Brian J. Nieman[1, 2], Ellen van der Plas[3], Shoshana Spring[1], Russell Schachar[4]
[1]Mouse Imaging Centre, The Hospital for Sick Children, Toronto, Ontario, Canada; [2]Medical Biophysics , University of Toronto, Toronto, Ontario, Canada; [3]Psychiatry, The Hospital for Sick Children, Toronto, Ontario, Canada; [4]Psychiatry, University of Toronto, Toronto, Ontario, Canada

Computer 66 **3493. Decomposing the Hippocampus Into Anatomical Informative Shape Measures**
Jason P. Lerch[1, 2], Jan Scholz[1]
[1]Mouse Imaging Centre, The Hospital for Sick Children, Toronto, Ontario, Canada; [2]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada

Computer 67 **3494. Brodmann Revisited: Using Diffusion MRI to Characterize Functionally Distinct Gray Matter Regions in Development**
Kirsten Mary Lynch[1], Arthur Toga[1], Kristi Clark[1]
[1]Institute for Neuroimaging and Informatics, University of Southern California, Los Angeles, CA, United States

Computer 68 **3495. Viscoelasticity of the Mouse Hippocampus and the Influence of Enriched Environment**
Jing Guo[1], Tonia Munder[2], Charlotte Klein[2], Anna Pfeffer[2], Jürgen Braun[3], Barbara Steiner[2], Ingolf Sack[1]
[1]Radiology, Charité - Universitätsmedizin Berlin, Berlin, Germany; [2]Department of Neurology, Charité - Universitätsmedizin Berlin, Berlin, Germany; [3]Department of Medical Informatics, Charité - Universitätsmedizin Berlin, Berlin, Germany

Computer 69 **3496. Neuroprotective Effect of Lactoferrin Following Inflammatory Injury in the Developing Rat Brain Assessed by High-Field Neurite Orientation Dispersion and Density Imaging**
Yohan van de Looij[1, 2], Vanessa Ginet[1], Petra S. Hüppi[1], Stéphane V. Sizonenko[1]
[1]Division of Child Growth and Development, University of Geneva, Geneva, Switzerland; [2]Laboratory for Functional and Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland

Computer 70 **3497. Investigation of Brain Segmentation with FIRST by Using Different Hybrid Contrasts and Registrations**
ISMRM MERIT AWARD magna cum laude
Xiang Feng[1], Andreas Deistung[1], Ferdinand Schweser[2, 3], Daniel Guellmar[1], Juergen R. Reichenbach[1]
[1]Medical Physics Group, Institute of Diagnostic and Interventional Radiology, Jena University Hospital - Friedrich Schiller University Jena, Jena, Germany; [2]Buffalo Neuroimaging Analysis Center, Dept. of Neurology, School of Medicine and Biomedical Sciences, State University of New York at Buffalo, Buffalo, NY, United States; [3]MRI Molecular and Translational Imaging Center, Buffalo CTRC, State University of New York at Buffalo, Buffalo, NY, United States

Computer 71 **3498. BrainGPS: A Cloud-Based Platform for Neuroimage Analysis and Neuroradiological Studies**
Yue Li[1], Can Ceritoglu[2], Hangyi Jiang[3], Anthony E. Kolasny[2], Timothy J. A. Brown[2], Xiaoying Tang[2], Zifei Liang[3, 4], Andreia V. Faria[3], Marc Vaillant[5], Naveen Santhanam[5], Xin Li[3], Susumu Mori[3], Michael I. Miller[2]
[1]AnatomyWorks, LLC, Baltimore, MD, United States; [2]Center for Imaging Science, Johns Hopkins University, Baltimore, MD, United States; [3]Department of Radiology, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [4]Department of Electronics and Information Engineering, Sichuan University, Chengdu, Sichuan, China; [5]Animetrics, Inc, Conway, NH, United States

Computer 72 **3499. Interpolated Compressed Sensing MR Image Reconstruction in Phase Encoding for the Brain**
Yong Pang[1], Daniel B. Vigneron[1, 2], Xiaoliang Zhang[1, 2]
[1]Dept of Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [2]UCSF/UC Berkeley Joint Graduate Group in Bioengineering, San Francisco & Berkeley, CA, United States

Electronic Poster
Advanced Neuroanatomy & Morphometry
Exhibition Hall Tuesday 10:00-11:00

Computer 73 **3500. A Comparison of MP-RAGE Sequence Optimizations**
Jinghua Wang[1], Lili He[2], Zhong-Lin Lu[1]
[1]Center for Cognitive and Behavioral Brain Imaging, The Ohio State University, Columbus, OH, United States; [2]Center for Perinatal Research, The Research Institute at Nationwide Children's Hospital, OH, United States

Computer 74 **3501. SNR Improvement of MP2RAGE from Slice Encoding Acceleration.**
Wanyong Shin[1], Taehoon Shin[2], Sehong Oh[1], Mark J. Lowe[1]
[1]Imaging Institute, Cleveland Clinic Foundatoin, Cleveland, OH, United States; [2]Diagnostic Radiology and Nuclear Medicine, University of Maryland, Baltimore, MD, United States

Computer 75 **3502. Fluid-Attenuated Three-Dimensional Structural Brain MRI Using Inversion-Recovery-Prepared DANTE-FLASH (IR-DASH)**
Linqing Li[1], Moises Hernandez[1], Peter Jezzard[1]
[1]Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, United Kingdom

Computer 76 **3503. Robustness of a Fully Automated Brain Segmentation Tool for Multiple MRI Protocols: Test for Clinical Applications**
Zifei LIANG[1, 2], Xiaohai HE[1], Andreia V. Faria[2], Kenishi Oishi[2], Yue Li[3], Kinya Okada[2, 4], Can Ceritoglu[5], Xiaoying Tang[5], Michael Miller[5], Susumu Mori[2, 6]
[1]College of Electronics and Information Engineering, Sichuan University, Chengdu, Sichuan, China; [2]Johns Hopkins University School of Medicine, BALTIMORE, MD, United States; [3]AnatomyWorks,LLC, BALTIMORE, MD, United States; [4]MitsubishiTanabe Pharma Corporation, Kawagishi, Japan; [5]Center for Imaging Science, Johns Hopkins University, BALTIMORE, MD, United States; [6]Kennedy Krieger Institute, BALTIMORE, MD, United States

Computer 77 **3504. Cortical Layers One by One: The Visual Cortex in Advanced QMRI**
Ana-Maria Oros-Peusquens[1], Johannes Lindemeyer[1], N. Jon Shah[1]
[1]Institute of Neuroscience and Medicine (INM-4), Research Centre Juelich, Juelich, Germany

Computer 78 **3505. Cortical Thickness Measurements with MPRAGE and MP2RAGE at 3T**
Quentin Duché[1, 2], Parnesh Raniga[3], Gary F. Egan[3], Oscar Acosta[1], Pierrick Bourgeat[2], Vincent Doré[2], Hervé Saint-Jalmes[1], Olivier Salvado[2]
[1]LTSI, INSERM, Université de Rennes 1, Rennes, France; [2]CSIRO Digital productivity Flagship, Australian e-Health Research Centre, Herston, QLD, Australia; [3]Monash Biomedical Imaging, Monash University, VIC, Australia

Computer 79 **3506. An Algorithm and Quantitative Evaluation Framework for Registration of Multi-Modal Brain MRI**
ISMRM MERIT AWARD magna cum laude
Omar Ocegueda[1], Eleftherios Garyfallidis[2], Maxime Descoteaux[2], Mariano Rivera[1]
[1]Computer Science Department, Centro de Investigación en Matemáticas, Guanajuato, Mexico; [2]Sherbrooke Connectivity Imaging Lab (SCIL), Computer Science department, Université de Sherbrooke, Sherbrooke, Québec, Canada

Computer 80 **3507. Reducing EPI Distortion with Gradient Slew Rate of 700 T/m/s in Human Brain Imaging**
Ek T. Tan[1], Seung-Kyun Lee[1], Dominic Graziani[1], Matt A. Bernstein[2], John Huston[2], Yunhong Shu[2], Paul T. Weavers[2], Shengzhen Tao[3], Joshua D. Trzasko[3], Jean-Baptiste Mathieu[4], Christopher J. Hardy[1], John F. Schenck[1], Thomas KF Foo[1]
[1]GE Global Research, Niskayuna, NY, United States; [2]Radiology, Mayo Clinic, Rochester, MN, United States; [3]Biomedical Engineering, Mayo Clinic, Rochester, MN, United States; [4]GE Healthcare, Florence, SC, United States

Computer 81 **3508. *Ex-Vivo* MRI of the Brain: Longitudinal Effects of Formalin Exposure on Regional T1 Relaxation Times**
ISMRM MERIT AWARD magna cum laude
Mekala R. Raman[1], Yunhong Shu[2], Clifford R. Jack[2], Kejal Kantarci[2]
[1]Neurology, Mayo Clinic, Rochester, MN, United States; [2]Radiology, Mayo Clinic, Rochester, MN, United States

Computer 82 **3509. Opposing Effects on Parieto-Frontal White Matter Plasticity After Demanding and Undemanding Working Memory Training: A Multimodal MRI Approach.**
Claudia Metzler-Baddeley[1], Sonya Foley[2], Karen Caeyenberghs[3], Derek K. Jones[2]
[1]CUBRIC, School of Psychology, Cardiff University, Cardiff, Wales, United Kingdom; [2]Cardiff University, Wales, United Kingdom; [3]Gent University, Gent, Belgium

Computer 83 **3510. Reliability, Power, and Calibration for Multisite MRI Volumetric Studies**

Anisha Keshavan[1], Friedmann Paul[2], Mona Beyer[3], Rohit Bakshi[4], Phillip De Jager[4], Massimo Filippi[5], David Hafler[6], Hanne Harbo[3], Stephen Hauser[1], Ludwig Kappos[7], Filippo Martinelli[5], Daniel Pelletier[6], Maria Rocca[5], Till Sprenger[7], William Stern[1], Bernard Uitdehaag[8], Mike Wattjes[8], Howard Weiner[4], Jens Würfel[2], Alyssa Zhu[1], Jorge Oksenberg[1], Roland Henry[1]

[1]Neurology, UCSF, San Francisco, CA, United States; [2]Charité Universitätsmedizin, Germany; [3]Oslo University Hospital, Norway; [4]Brigham and Women's Hospital, MA, United States; [5]Scientific Institute Ospedale San Raffaele, Italy; [6]Yale University, CT, United States; [7]University Hospital, Basel, Switzerland; [8]Academic Hospital Vrije Universiteit, Netherlands

Computer 84 **3511. Association of Hippocampal Shape with Children's Cognitive Performance Analyzed Using Radial-Distance Mapping and Two Non-Rigid Registration Methods**

Peter T. Fwu[1], Elysia P. Davis[2], Claudia Buss[2], Muqing Lin[1], Kevin Head[2], Curt A. Sandman[2], Min-Ying Su[1]

[1]Tu&Yuen Center for Functional Onco-Imaging, University of California, Irvine, CA, United States; [2]Women and Children's Health and Well-Being Project, Department of Psychiatry & Human Behavior, University of California, Irvine, CA, United States

Computer 85 **3512. Visualization of Human Brainstem Structures at 3T Using 3D Inversion Recovery Sequences**

Zhe Zhang[1], Changcun Pan[2, 3], Xiaodong Ma[1], Jie Tang[3], Lihong Wang[1], Liwei Zhang, [23], Hua Guo[1]

[1]Center for Biomedical Imaging Research, Department of Biomedical Engineering, School of Medicine, Tsinghua University, Beijing, China; [2]Department of Neurosurgery, Medical Center, Tsinghua University, Beijing, China; [3]Department of Neurosurgery, Beijing Tiantan Hospital, Capital Medical University, Beijing, China

Computer 86 **3513. *In Vivo* Structural Template of Human Brainstem Nuclei Based on Multi-Contrast MRI at 7 Tesla**

Marta Bianciardi[1], Nicola Toschi[1, 2], Brian L. Edlow[3], Cornelius Eichner[1], Kawin Setsompop[1], Jonathan R. Polimeni[1], Emery N. Brown[4], Hannah C. Kinney[5], Bruce R. Rosen[1], Lawrence L. Wald[1]

[1]Department of Radiology, A.A. Martinos Center for Biomedical Imaging, MGH and Harvard Medical School, Boston, MA, United States; [2]Medical Physics Section, Department of Biomedicine and Prevention, Faculty of Medicine, University of Rome "Tor Vergata", Rome, Italy; [3]Department of Neurology, A. A. Martinos Center for Biomedical Imaging, MGH & Harvard Medical School, Boston, MA, United States; [4]Department of Anesthesia, Critical Care and Pain Medicine, MGH, Boston, MA, United States; [5]Department of Pathology, Boston Children's Hospital, Harvard Medical School, Boston, MA, United States

Computer 87 **3514. Structural Connectivity Mapping and Parcellation of the Human Subthalamic Nucleus Using Ultra-High Field Diffusion MRI**

Birgit Renske Plantinga[1, 2], Alard Roebroeck[3], Matteo Bastiani[3], Valentin Gereon Kemper[3], Maartje Melse[1], Kâmil Uludag[3], Mark Kuijf[4], Ali Jahanshahi[1], Bart ter Haar Romenij[2], Yasin Temel[1, 5]

[1]Department of Neuroscience, Maastricht University, Maastricht, Limburg, Netherlands; [2]Biomedical Image Analysis, Eindhoven University of Technology, Eindhoven, Noord-Brabant, Netherlands; [3]Department of Cognitive Neuroscience, Maastricht University, Maastricht, Limburg, Netherlands; [4]Department of Neurology, Maastricht University Medical Center, Maastricht, Limburg, Netherlands; [5]Department of Neurosurgery, Maastricht University Medical Center, Maastricht, Limburg, Netherlands

Computer 88 **3515. Ultra-High Field MR Microscopy of the Postmortem Human Brainstem**

Yosef Berlow[1], Mara Bahri[1], Laura McMahon[1], John Nutt[2], Susan Goelz[3], Ted Yednock[3], Wagner Zago[3], Randall Woltjer[4], C.Dirk Keene[5], William Rooney[1]

[1]Advanced Imaging Research Center, Oregon Health & Science University, Portland, OR, United States; [2]Department of Neurology, Oregon Health & Science University, Portland, OR, United States; [3]Prothena, CA, United States; [4]Department of Pathology, Oregon Health & Science University, Portland, OR, United States; [5]Department of Pathology, University of Washington, Seattle, WA, United States

Computer 89 **3516. Reproducibility Assessment of the First Principal Network Calculation: A Tool for Studying Anatomical Brain Connectivity**

Emma Biondetti[1], Jonathan D. Clayden[2], Alessandra Bertoldo[3], Declan T. Chard[4], Claudia A. M. Wheeler-Kingshott[4]

[1]UCL Department of Medical Physics and Biomedical Engineering, University College London, London, England, United Kingdom; [2]Developmental Imaging and Biophysics Section, UCL Institute of Child Health, University College London, London, England, United Kingdom; [3]Department of Information Engineering, University of Padova, Padova, Italy; [4]NMR Research Unit, Department of Neuroinflammation, Queen Square MS Centre, UCL Institute of Neurology, London, England, United Kingdom

Computer 90 **3517. Magnetic Resonance Elastography in the Brain: An in Silico Study on the Influence of Cranial Anatomy**

Deirdre M. McGrath[1, 2], Nishant Ravikumar[1], Alejandro F. Frangi[1], Iain D. Wilkinson[2], Zeike A. Taylor[1]

[1]CISTIB, Center for Computational Imaging & Simulation Technologies in Biomedicine, University of Sheffield, Sheffield, South Yorkshire, United Kingdom; [2]Academic Radiology, University of Sheffield, Sheffield, South Yorkshire, United Kingdom

Computer 91 **3518. Is 1T the New 9.4T? a Tool for Morphological Phenotyping and Regional Brain Volume Extraction**

Holly Elizabeth Holmes[1], Rajiv Ramasawmy[1], Da Ma[1, 2], Nicholas Powell[1, 2], Manuel Jorge Cardoso[2], Marc Modat[2], Simon Walker-Samuel[1], Sebastian Ourselin[2], Bernard Siow+[1, 2], Mark Lythgoe+[1]*
[1]Centre for Advanced Biomedical Imaging, University College London, London, Greater London, United Kingdom; [2]Centre for Medical Image Computing, University College London, London, Greater London, United Kingdom

Computer 92 **3519. Using Dimensionality Reduction to Explore Virtual Reality Lobectomies**

Allen Q. Ye[1], Olusola Ajilore[2], Alessandro Febretti[3], Andrew Johnson[3], Johnson GadElkarim[2], Shaolin Yang[2], Richard Magin[1], Anand Kumar[2], Alex D. Leow[2]
[1]Dept. of Bioengineering, University of Illinois at Chicago, Chicago, IL, United States; [2]Dept. of Psychiatry, University of Illinois at Chicago, Chicago, IL, United States; [3]Dept. of Computer Science, University of Illinois at Chicago, Chicago, IL, United States

Computer 93 **3520. Investigation of the Confounding Effects of Vasculature and Metabolism on Computational Anatomy Studies**

Christine Lucas Tardif[1], Christopher John Steele[1], Pierre-Louis Bazin[1], Arno Villringer[1], Claudine Joëlle Gauthier[1, 2]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Saxony, Germany; [2]Department of Physics, Concordia University, Montreal, Quebec, Canada

Computer 94 **3521. High Resolution 7T MRI Scanning of Human Cerebral Vascular Casts**

J.H.G. Helthuis[1], A.A. Harteveld[2], J. Hendrikse[2], R.L.A.W. Bleys[3], J.J.M. Zwanenburg[2, 4]
[1]Department of Neurosurgery, University Medical Center Utrecht, Utrecht, Netherlands; [2]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [3]Department of Anatomy, University Medical Center Utrecht, Utrecht, Netherlands; [4]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands

Computer 95 **3522. Acceleration-Selective Arterial Spin Labeling (AccASL) for Intracranial MR Angiography**

Makoto Obara[1], Osamu Togao[2], Masami Yoneyama[1], Tomoyuki Okuaki[3], Shuhei Shibukawa[4], Marc Van Cauteren[3]
[1]Philips Electronics Japan, Minato-ku, Tokyo, Japan; [2]Department of Clinical Radiology, Graduate School of Medical Science, Kyushu University, Fukuoka, Japan; [3]Philips Healthcare, Tokyo, Japan; [4]Department of Radiology, Tokai University Hospital, Kanagawa, Japan

Electronic Poster
Addiction, Drug Exposure, Pain, Sleep

Exhibition Hall Tuesday 11:00-12:00

Computer 1 **3523. White Matter Abnormalities in Alcohol Dependents Using Diffusion Tensor Imaging at 3T**

Hyeon-Man Baek[1, 2], Mirim Bang[1], Youngjae Jeon[1], Jooyun Kim[1]
[1]Center for MR Research, Korea Basic Science Institute, Ochang, Chungbuk, Korea; [2]Department of Bio-Analytical Science, Univerity of Science & Technology, Daejeon, Chungnam, Korea

Computer 2 **3524. Brain Metabolite Abnormalities in Alcohol Dependent Patients Using Proton MR Spectroscopy at 3T**

Hyeon-Man Baek[1, 2], Siekyeong Kim[3], Jeonghwan Lee[3], Youngjae Jeon[1], Jooyun Kim[1], Mirim Bang[1]
[1]Center for MR Research, Korea Basic Science Institute, Ochang, Chungbuk, Korea; [2]University of Science & Technology, Daejeon, Korea; [3]Department of Psychiatry, Chungbuk National University, Cheongju, Chungbuk, Korea

Computer 3 **3525. Altered Corticostriatal Functional Networks in Adolescents with Internet Addiction Disorder Revealed by Resting-State fMRI**

Fuchun Lin[1], Yasong Du[2], Yan Zhou[3], Jianrong Xu[3], Hao Lei[1]
[1]State Key Laboratory of Magnetic Resonance and Atomic and Molecular Physics, Wuhan Institute of Physics and Mathematics, Chinese Academy of Sciences, Wuhan, Hubei, China; [2]Shanghai Mental Health Center, Jiao Tong University Medical School, Shanghai, China; [3]RenJi Hospital, Jiao Tong University Medical School, Shanghai, China

Computer 4 **3526. The Lower White Matter Integrity Was Related to Relapse Propensity in Heroin Addicts Under Methadone Maintenance Treatment**

wei li[1], yarong wang[1], qiang li[1], jianjun ye[1], wei wang[1]
[1]Department of Radiology, Tangdu Hospital, The Fourth Military Medical University, Xi¡¯an, Shaanxi, China

Computer 5 **3527. A Combined Conventional ROI and Voxel Based T2 Relaxometry Analysis in Alcohol Use Disorders**
Deepika Bagga[1], Namita Singh[1], Shilpi modi[1], Prabhjot Kaur[1], Subash Khushu[1], Debajyoti Bhattacharya[2], Mohan lal Garg[3]
[1]INMAS, Delhi, India; [2]Base Hospital, Delhi, India; [3]Panjab University, Chandigarh, India

Computer 6 **3528. Prefrontal and Frontal Functional Connectivity Increases in Current Smokers Versus Non-Smokers**
Prantik Kundu[1], Valerie Voon[2]
[1]Depts. of Radiology and Psychiatry, Icahn School of Medicine at Mt. Sinai, New York, NY, United States; [2]Department of Psychiatry, University of Cambridge, Cambridgeshire, United Kingdom

Computer 7 **3529. Widespread White Matter Integrity Abnormalities in Cocaine Use Disorder Assessed by High Resolution DMRI and Tractography**
Rafael O'Halloran[1], Nelly Alia-Klein[2], Rita Z. Goldstein[2]
[1]Radiology, Icahn School of Medicine at Mt Sinai, New York, NY, United States; [2]Psychiatry, Icahn School of Medicine at Mt Sinai, NY, United States

Computer 8 **3530. Effects of Methadone MaintenanceTreatment in Heroin Addicts on Inhibitory Controla Longitudinal Observationof fMRI**
Jianjun Ye[1], Wei Wang[1], Wei Li[1], Dongsheng Zhang[1], Dandan Zheng[2]
[1]Department of Radiology, Tangdu Hospital, The Fourth Military Medical University, xi'an, shaanxi, China; [2]MR Advanced Application and Research Center, GE Healthcare China, Beijing, China

Computer 9 **3531. Cerebral Metabolite Differences and Correlations in Short-Term Binge Ethanol-Exposed Rats: A Study of *Ex Vivo* Proton Nuclear Magnetic Resonance Spectroscopy at 11.7-T**
Do-Wan Lee[1, 2], Bo-Young Choe[1]
[1]Department of Biomedical Engineering, and Research Institute of Biomedical Engineering, The Catholic University of Korea College of Medicine, Seoul, Korea; [2]Asan Institute for Life Sciences, Asan Medical Center, Seoul, Korea

Computer 10 **3532. Distribution of Temperature Changes and Neurovascular Coupling in Rat Brain Following 3,4-Methylenedioxymethamphetamine (MDMA,'ecstasy') Exposure**
Daniel Coman[1], Basavaraju G. Sanganahalli[1], Lihong Jiang[1], Fahmeed Hyder[1, 2], Kevin Behar[3]
[1]Diagnostic Radiology, Yale University, New Haven, CT, United States; [2]Biomedical Engineering, Yale University, New Haven, CT, United States; [3]Psychiatry, Yale University, New Haven, CT, United States

Computer 11 **3533. Neurological Study of Mouse Model of Fetal Alcohol Spectrum Disorders Using Advanced Imaging Techniques**
Van Nguyen[1], Suyinn Chong[2], Karine Mardon[1], Quang Tieng[1], Graham Galloway[1], Nyoman Kurniawan[1]
[1]Centre for Advanced Imaging, The University of Queensland, Brisbane, QLD, Australia; [2]Mater Research Institute, The University of Queensland, Brisbane, QLD, Australia

Computer 12 **3534. Monkeys with Six Months of Alcohol Self-Administration Have Disrupted White Matter Microstructure Indicated by Decreased Fractional Anisotropy**
Xiaojie Wang[1], Sarah Plat[1], Molly McGinnis[1], Kathleen A. Grant[1], Christopher D. Kroenke[1]
[1]Oregon National Primate Research Center, Oregon Health & Science University, Beaverton, OR, United States

Computer 13 **3535. Integration of Neural Networks Activated by Amphetamine in Females with Different Estrogen Levels: A Functional Imaging Study in Awake Rats.**
ISMRM MERIT AWARD summa cum laude
Dan Madularu[1], Jason R. Yee[2], William M. Kenkel[2], Kelsey A. Moore[2], Praveen Kulkarni[2], Waqqas M. Shams[1], Craig F. Ferris[2], Wayne G. Brake[1]
[1]Concordia University, Montreal, QC, Canada; [2]Northeastern University, Boston, MA, United States

Computer 14 **3536. Treatment Length Effects of Methadone Maintenance on Brain fMRI Response to Cue-Elicited Craving in Former Heroin Addicts**
Hanyue Wang[1, 2], Yarong Wang[3], Qiang Li[4], Dongsheng Zhang[4], Lina Wang[4], Jia Zhu[4], Wei Li[4], Chongjun Zhang[5], Jiajie Chen[4], Wei Wang[4]

[1]Radiology, Tangdu Hospital, the Fourth Military Medical University, Xi¡¯an, Shan Xi, China; [2]Clinic, Air Force Equipment Academy , Beijing, China; [3]Radiology, Tangdu Hospital, the Fourth Military Medical University,, Xi¡¯an, Shan Xi, China; [4]Radiology, Tangdu Hospital, the Fourth Military Medical University, Shan Xi, China; [5]Clinic, Air Force Equipment Academy, Beijing, China

Computer 15 **3537. Acute Effect of Methadone Maintenance Dose on Cerebral Blood Flow in Heroin Users Under Methadone Maintenance Treatment**

Chien-Yuan Eddy Lin[1, 2], I-Hsiao Yang[3, 4], Hsiu-Ling Chen[3, 4], Meng-Chang Tsai[5], Pei-Chin Chen[3, 4], Meng-Hsiang Chen[3, 4], Wei-Che Lin[3, 4]
[1]GE Healthcare, Taipei, Taiwan; [2]GE Healthcare China, Beijing, China; [3]Department of Diagnostic Radiology, Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan; [4]Chang Gung University College of Medicine, Kaohsiung, Taiwan; [5]Department of psychiatry, Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan

Computer 16 **3538. Reduction of Functional Connectivity in Adolescents Prenatally Exposed to Alcohol**

Bing Ji[1, 2], Zhihao Li[1, 3], Claire Coles[4], Julie A Kable[4], Renjie Zhang[2], Xiaoping Hu[1]
[1]Biomedical Engineering, Emory University & Georgia Institute of Technology, Atlanta, GA, United States; [2]School of Optical Electrical and Computer Engineering, University of Shanghai for Science & Technology, Shanghai, China; [3]Institute of affective and Social Neuroscience, Shenzhen University, Shenzhen, Guangdong, China; [4]Psychiatry and behavioral Science, Emory University, Atlanta, GA, United States

Computer 17 **3539. Longitudinal Changes of Functional Connectivity with Amygdala and Prefrontal Cortex in Adolescents Prenatally Exposed to Cocaine**

Zhihao Li[1, 2], Claire Coles[3], Mary Ellen Lynch[3], Xiaoping Hu[1]
[1]Biomedical Engineering, Emory University & Georgia Institute of Technology, Atlanta, GA, United States; [2]Institute of Affective and Social Neuroscience, Shenzhen University, Shenzhen, Guangdong, China; [3]Psychiatry and Behavioral Science, Emory University, Atlanta, GA, United States

Computer 18 **3540. Multivariate Classification of Placebo Versus Drug in Fibromyalgia Patients**

Scott Peltier[1], Eric Ichesco[2], Richard Harris[2]
[1]Functional MRI Laboratory, University of Michigan, Ann Arbor, MI, United States; [2]Anesthesiology, University of Michigan, Ann Arbor, MI, United States

Computer 19 **3541. Altered Brain Functional Connectivity in MC4R Rs12970134 Related Obesity in Young Chinese HAN Adults**

Baohui Lou[1, 2], Min Chen, [23], Xiaojie Luo[4]
[1]Graduate School of Peking Union Medical College, Beijing, China; [2]Beijing Institute of Geriatrics, Beijing Hospital, Beijing, China; [3]Graduate School of Peking Union Medical College, Beijing , China; [4]Department of Radiology, Beijing Hospital, Beijing, China

Computer 20 **3542. Mu-Opioid Receptor Related Changes in the Mouse Brain Connectome Mapped Via Resting-State Functional and Diffusion Weighted MRI**

ISMRM MERIT AWARD magna cum laude

Anna E. Mechling[1, 2], Tanzil Arefin[1, 3], Hsu-Lei Lee[1], Thomas Bienert[1], Marco Reisert[1], Sami Ben Hamida[4], Jürgen Hennig[1], Dominik v. Elverfeldt[1], Brigitte Kieffer[5], Laura-Adela Harsan[1]
[1]Medical Physics, University Medical Center Freiburg, Freiburg, B-W, Germany; [2]Faculty of Biology, University of Freiburg, Freiburg, B-W, Germany; [3]Bernstein Center for Computational Neuroscience, University of Freiburg, Freiburg, B-W, Germany; [4]Institut de Génétique et de Biologie Moléculaire et Cellulaire, Illkirch-Graffenstaden, Alsace, France; [5]Douglas Research Centre, Montreal, Quebec, Canada

Computer 21 **3543. Neurobiological Assessment of Stress-Induced Sleep Disturbance in a Rat Model Using *In Vivo* Proton Magnetic Resonance Spectroscopy at 9.4 T: Potential Relevance to Insomnia**

Do-Wan Lee[1, 2], Chul-Woong Woo[2], Sang-Tae Kim[2], Choong Gon Choi[3], Bo-Young Choe[1], Dong-Cheol Woo[2]
[1]Department of Biomedical Engineering, and Research Institute of Biomedical Engineering, The Catholic University of Korea College of Medicine, Seoul, Korea; [2]Asan Institute for Life Sciences, Asan Medical Center, Seoul, Korea; [3]Department of Radiology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

Computer 22 **3544. Altered Regional Brain and Subjective Sleep Deficits in Chronic Primary Insomnia:a Resting-State fMRI Study with ALFF**

Xi-Jian Dai[1, 2], Hong-Han Gong[2], De-Chang Peng[2], Li Pei[2], Yi-Xiang Wang[1]
[1]Department of Imaging and Interventional Radiology, Prince of Wales Hospital, The Chinese University of Hong Kong, Shatin, NT, Hong Kong; [2]Department of Radiology, The First Affiliated Hospital of Nanchang University, Nanchang, Jiangxi, China

Computer 23 3545. A Multimodal Approach to Identify and Localize Complex Pathological Processes Affecting Tissue Microstructure in Neuropsychiatric SLE
Ece Ercan[1], Carson Ingo[1], Cesar Magro Checa[2], Mark van Buchem, Andrew Webb[1], Itamar Ronen[1]
[1]C. J. Gorter Center for High Field MRI, Department of Radiology, Leiden University Medical Center, Leiden, Netherlands; [2]Department of Rheumatology, Leiden University Medical Center, Leiden, Netherlands

Electronic Poster
Psychosis

Exhibition Hall Tuesday 11:00-12:00

Computer 25 3546. ^{1}H MRS Study of Metabolic Alternations in Schizophrenia at 7T
ISMRM MERIT AWARD magna cum laude
Zhongxu An[1], Sandeep Ganji[1], Katherine Borner[1], Ana Stan[2], Subroto Ghose[2], Carol Tamminga[2], Changho Choi[1]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Psychiatry, University of Texas Southwestern Medical Center, Dallas, TX, United States

Computer 26 3547. Abnormal Bioenergetics in the 1st Episode Schizophrenia, Preliminary Studied by the Magnetization Transfer 31P-MRS
Fei Du[1], Cagri Yuksel[1], Scott Lukas[1], Bruce Cohen[1], Dost Ongur[1]
[1]McLean Hospital, Harvard Medical School, Belmont, MA, United States

Computer 27 3548. Three Shape Patterns of Subcortical Structures in Medication-Naïve First-Episode Schizophrenia Patients Revealed by Morphometric Descriptor and Cluster Analysis
Huaiqiang Sun[1], Su Lui[1], Haoyang Xing[1], Xiaoqi Huang[1], Qiyong Gong[1]
[1]Huaxi MR Research Center, West China Hospital of Sichuan University, Chengdu, China

Computer 28 3549. Enhanced Neurometabolic Activity and Neuroanatomical Changes in Visual Area of Rats Prenatally Exposed to MAM Parallel Schizophrenic Symptoms
Gen Kaneko[1], Daniel Coman[1], Basavaraju G. Sanganahalli[1], Helen Wang[1], Peter Herman[1], Lihong Jiang[1], Jyotsna Rao[1], Stephanie M. Groman[2], Jane R. Taylor[2], Robin A. de Graaf[1], Fahmeed Hyder[1, 3]
[1]Department of Diagnostic Radiology, Yale University, New Haven, CT, United States; [2]Department of Psychiatry, Yale University, New Haven, CT, United States; [3]Department of Biomedical Engineering, Yale University, New Haven, CT, United States

Computer 29 3550. Adolescent Olanzapine Treated Rats Cause Long Term Reductions in Glutamate and GABA Levels in the Nucleus Accumbens –*In Vivo* Proton Magnetic Resonance Spectroscopy Study
Su Xu[1, 2], Rao P. Gullapalli[1, 2], Douglas O. Frost[3, 4]
[1]Department of Diagnostic Radiology and Nuclear Medicine, University of Maryland School of Medicine, Baltimore, MD, United States; [2]Core for Translational Research in Imaging @ Maryland, University of Maryland School of Medicine, Baltimore, MD, United States; [3]Department of Pharmacology, University of Maryland School of Medicine, Baltimore, MD, United States; [4]Department of Psychiatry, University of Maryland School of Medicine, Baltimore, MD, United States

Computer 30 3551. Altered Cortical Microstructure in Schizophrenia: A Diffusional Kurtosis Imaging Study
Mariana Lazar[1], Fernando Boada[1], Laura Miles[1], Dolores Malaspina[1], Oded Gonen[1]
[1]New York University, New York, United States

Computer 31 3552. Combined Prenatal Immune Activation and Peri-Pubertal Stress Alters the Neurochemical Profile in the Mouse Cortex But Not Hippocampus
Alberto Corcoba[1, 2], Sandra Giovanoli[3], Mirko Schnider[2], Kim Q. Do[2], Rolf Gruetter[1, 4], Urs Meyer[3], Joao M.N. Duarte[1]
[1]LIFMET, EPFL, Lausanne, Vaud, Switzerland; [2]Center for Psychiatric Neuroscience, Department of Psychiatry, Lausanne University Hospital, Lausanne, Vaud, Switzerland; [3]Physiology and Behavior Laboratory, Swiss Federal Institute of Technology Zurich, Zurich, Switzerland; [4]Radiology, UNIL and UNIGE, Lausanne and Geneva, Vaud and Geneva, Switzerland

Computer 32 3553. Reduced Grey Matter Arteriolar Cerebral Blood Volume in Schizophrenia
Jun Hua[1, 2], SeungWook Lee[3], Nicholas I.S. Blair[3], Allison Brandt[4], Jaymin Patel[3], Andreia V. Faria[1], Issel Anne L. Lim[1, 2], James J. Pekar[1, 2], Peter C. M. van Zijl[1, 2], Christopher A. Ross[4, 5], Russell L. Margolis[4, 5]

[1]Neurosection, Div. of MRI Research, Dept. of Radiology, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States; [3]Department of Biomedical Engineering, Johns Hopkins University, Baltimore, MD, United States; [4]Department of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [5]Department of Neurology, Johns Hopkins University School of Medicine, Baltimore, MD, United States

Computer 33 **3554. Enhanced Functional Connectivity Between Sub-Regions in the Thalamus and Cortex in Schizophrenia Patients Measured by Resting State BOLD fMRI at 7T**

Jun Hua[1, 2], Nicholas I.S. Blair[3], Ann Choe[1, 2], Anita Barber[4, 5], Allison Brandt[6], Issel Anne L. Lim[1, 2], Feng Xu[1, 2], James J. Pekar[1, 2], Peter C. M. van Zijl[1, 2], Christopher A. Ross, [46], Russell L. Margolis, [46]

[1]Neurosection, Div. of MRI Research, Dept. of Radiology, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States; [3]Department of Biomedical Engineering, Johns Hopkins University, Baltimore, MD, United States; [4]Department of Neurology, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [5]Department of Neurology, Kennedy Krieger Institute, Baltimore, MD, United States; [6]Department of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, Baltimore, MD, United States

Computer 34 **3555. Disrupted Small-World Networks in Never Treated Schizophrenia Patients with Long Illness Duration**

Li Yao[1], Wei Deng[2], Wenjing Zhang[3], Yuan Xiao[3], Fei Li[3], Jieke Liu[3], John A. Sweeney[4], Qiyong Gong[3], Su Lui[3]

[1]Huaxi MR Research Center, Chengdu , Sichuan, China; [2]Department of Psychiatry, Stat Key Lab of Biotherapy, West China Hospital of Sichuan University, Sichuan, China; [3]Huaxi MR Research Center, Chengdu, Sichuan, China; [4]UT Southwestern Medical Center, TX, United States

Computer 35 **3556. Multi-Modal Pattern Recognition: An Application to Schizophrenia.**

Orla M. Doyle[1], Brandon Whitcher[2, 3], Steven C.R. Williams[1], Mitul A. Mehta[1], Stephen M. Lawrie[4]

[1]Dept of Neuroimaging, IoPPN, King's College London, London, United Kingdom; [2]Clinical & Translational Imaging, Pfizer, Cambridge, MA, United States; [3]Dept of Mathematics, Imperial College London, London, United Kingdom; [4]Division of Psychiatry, University of Edinburgh, Edinburgh, United Kingdom

Computer 36 **3557. Effects of DISC1 Genes on Clinical Symptoms and Thalamic Radiation in Patients with Schizophrenia: A Tract-Based Diffusion Spectrum Imaging Analysis**

Hsu-Hwa Tseng[1, 2], Su-Chun Huang[2], Chih-Min Liu[3], Tzung-Jeng Hwang[3], Hai-Gwo Hwu[3], Yung-Chin Hsu[2], Yu-Chun Lo[2], Yu-Jen Chen[2], Wen-Yih Isaac Tseng[2]

[1]School of Medicine, College of Medicine, National Taiwan University, Taipei, Taiwan; [2]Center for Optoelectronic Biomedicine, National Taiwan University College of Medicine, Taipei, Taiwan; [3]Department of Psychiatry, National Taiwan University Hospital, Taipei, Taiwan

Computer 37 **3558. Acute Impact of Antipsychotic Treatment on Patient with Schizophrenia: A Tract-Based Automatic Analysis (TBAA) with Diffusion Spectrum Imaging (DSI).**

Su-Chun Huang[1], Chih-Min Liu[2], Tzung-Jeng Hwang[2], Hai-Gwo Hwu[2], Yung-Chin Hsu[1], Yu-Chun Lo[1], Yu-Jen Chen[1], Wen-Yih Isaac Tseng[1, 3]

[1]Center for Optoelectronic Biomedicine, National Taiwan University College of Medicine, Taipei, Taiwan; [2]Department of Psychiatry, National Taiwan University Hospital, Taipei, Taiwan; [3]Molecular Imaging Center, National Taiwan University, Taipei, Taiwan

Computer 38 **3559. Widespread Decrease of Fractional Anisotropy in Never Treated Schizophrenia Patients with Disease Duration Over 5 Years**

Yuan Xiao[1], Wei Deng[2], Huaiqiang Sun[1], Wenjing Zhang[1], Li Yao[1], Jia Liu[1], Min Wu[1], Chandan Shah[1], Qiyong Gong[1], Su Lui[1]

[1]Department of Radiology, West China Hospital of Sichuan University, Huaxi Magnetic Resonance Research Ctr., Chengdu, Sichuan, China; [2]Department of Psychiatry, State Key Laboratory of Biotherapy, Chengdu, Sichuan, China

Computer 39 **3560. Elevated Levels of Myo-Inositol and Choline in the Associative Striatum of Antipsychotic-Naïve Patients with First Episode Psychosis**

Eric Plitman[1, 2], Camilo de la Fuente-Sandoval[3], Pablo León-Ortiz[3], Francisco Reyes-Madrigal[3], Gladys Gómez-Cruz[3], Shinichiro Nakajima[1, 4], Philip Gerretsen[1, 5], M Mallar Chakravarty[6, 7], Sofia Chavez[1, 5], Jun Ku Chung[1, 2], Fernando Caravaggio[1, 2], Yusuke Iwata[1, 4], Danielle Uy[1], Gary Remington[1, 5], Ariel Graff-Guerrero[1, 5]

[1]Centre for Addiction and Mental Health, Toronto, Ontario, Canada; [2]Institute of Medical Science, University of Toronto, Toronto, Ontario, Canada; [3]Instituto Nacional de Neurología y Neurocirugía, Mexico; [4]Neuropsychiatry, Keio University School of Medicine,

Japan; [5]Psychiatry, University of Toronto, Toronto, Ontario, Canada; [6]Douglas Mental Health University Institute, Montreal, Quebec, Canada; [7]Psychiatry, McGill University, Montreal, Quebec, Canada

Computer 40 **3561. Multi-Contrast Z-Score Comparison Discriminates Patients with Psychiatric Disorders from Controls**

Aziz M. Ulug[1, 2], Mehmed Ozkan[2], Peter B. Kingsley[3], Ivana De Lucia[1], Azim Celik[4], Pamela DeRosse[5, 6], Anil Malhotra[5, 6], Philip R. Szeszko[5, 6]

[1]Center for Neurosciences, Feinstein Institute for Medical Research, Manhasset, NY, United States; [2]Institute of Biomedical Engineering, Bogazici University, Istanbul, Turkey; [3]North Shore University Hospital, Manhasset, NY, United States; [4]GE Healthcare, Antalya, Turkey; [5]Center for Psychiatric Neuroscience, Feinstein Institute for Medical Research, Manhasset, NY, United States; [6]Psychiatry Research, Zucker Hillside Hospital, North Shore-LIJ Health System, , NY, United States

Computer 41 **3562. Lower Glutathione Levels in the Anterior Cingulate Cortex of Patients with Schizophrenia: A Preliminary 3T 1H-MRS Study**

Napapon Sailasuta[1], Yusuke Iwata[1], Shinichiro Nakajima[1], Sofia Chavez[1], Fernando Caravaggio[1], Eric Plitman[1], Vincenzo De Luca[1], Jun Ku Chung[1], Philip Gerretsen[1], Gary Remington[1], Ariel Graff-Guerrero[1]

[1]The Centre for Addiction and Mental Health, toronto, ON, Canada

Computer 42 **3563. Lateralization of Glx and GABA Metabolic Changes in Anterior Cingulate for Ultra High Risk Schizophrenia Patients.**

Petr Menschikov[1], Natalia Semenova[1, 2], Maxim Ublinskii[3], Dmitry Kupriyanov[4], Irina Lebedeva[5], Maria Omelchenko[5], Tolibjon Akhadov[3]

[1]N.N. Semenov Institute of Chemical Physics of the Russian Academy of Sciences, Moscow, Russian Federation; [2]N.M. Emanuel Institute of Biochemical Physics of the Russian Academy of Sciences, Moscow, Russian Federation; [3]Children's Clinical and Research Institute of Emergency Surgery and Trauma, Moscow, Russian Federation; [4]Philips Healthcare Russia, Moscow, Russian Federation; [5]National Mental Health Research Centre of the Russian Academy of Medical Sciences, Moscow, Russian Federation

Computer 43 **3564. N-Acetyl-Aspartyl-Glutamate in First-Episode Psychosis**

Anouk Marsman[1], Subechhya Pradhan[1], Candice Ford[2], Ashley Lloyd[2], Teppei Tanaka[2], Akira Sawa[2], Peter B. Barker[1]

[1]Russell H. Morgan Department of Radiology and Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Department of Psychiatry, Johns Hopkins University School of Medicine, Baltimore, MD, United States

Computer 44 **3565. Altered White Matter Tract Integrity in Drug-Naïve and Chronic Schizophrenia Patients: A Study Using Automatic Tract-Specific Analysis of the Whole Brain**

Chen-Hao Wu[1, 2], Yu-Jen Chen[2], Yun-Chin Hsu[2], Yu-Chun Lo[2], Tzung-Jeng Hwang[3], Hai-Gwo Hwu[3], Chung-Ming Chen[1], Wen-Yih Isaac Tseng[1, 2]

[1]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan, Taiwan; [2]Center for Optoelectronic Medicine, National Taiwan University College of Medicine, Taipei, Taiwan; [3]Department of Psychiatry, National Taiwan University Hospital, Taipei, Taiwan

Computer 45 **3566. Intrinsic Brain Abnormalities in Violent Offenders with Schizophrenia: A Resting-State Functional MRI Study**

Ming Zhou[1], Xinyu Hu[1], Junmei Hu[2], Qi Liu[1], Lizhou Chen[1], Qiyong Gong[1], Xiaoqi Huang[1]

[1]West China Hospital of Sichuan University, Huaxi MR Research Center, Chengdu, Sichuan, China; [2]Sichuan University, School of Basic Science and Forensic Medicine, Sichuan, China

Computer 46 **3567. Shared and Distinct Functional Network Connectome Abnormality in Deficit and Non-Deficit Schizophrenia**

Miao Yu[1], Xiangrong Zhang[1, 2], Xiaowei Tang[3], Zhengjia Dai[4], Xiang Wang[5], Xiaobin Zhang[3], Weiwei Sha[3], Shuqiao Yao[5], Yong He[4], Zhijun Zhang[1]

[1]Department of Neuropsychiatry Affiliated ZhongDa Hospital of Southeast University, Nanjing, JiangSu, China; [2]Department of Geriatric Psychiatry, Nanjing Brain Hospital Affiliated to Nanjing Medical University , JiangSu, China; [3]Department of Psychiatry, Wutaishan Hospital of Yangzhou, JiangSu, China; [4]State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China; [5]Medical Psychological Institute of the Second Xiangya Hospital, Central South University, HuNan, China

Computer 47 **3568. Clinical Correlations of Fornix Are Disparate in First Episode and Chronic Patients with Schizophrenia: A Tract-Based Diffusion Spectrum Imaging Analysis**

Yan-Lin Chiu[1, 2], Su-Chun Huang[2], Chih-Min Liu[3], Tzung-Jeng Hwang[3], Hai-Gwo Hwu[3], Yung-Chin Hsu[2], Yu-Chun Lo[2], Yu-Jen Chen[2], Wen-Yih Isaac Tseng[2, 4]

[1]School of Medicine, College of Medicine, National Taiwan University, Taipei, Taiwan; [2]Center for Optoelectronic Biomedicine, National Taiwan University College of Medicine, Taipei, Taiwan; [3]Department of Psychiatry, National Taiwan University Hospital, Taipei, Taiwan; [4]Molecular Imaging Center, National Taiwan University, Taipei, Taiwan

Computer 48 **3569.** **Corticostriatal Connectivity in Violent Offenders with Schizophrenia**

Xinyu Hu[1], Yi Liao[2], Lizhou Chen[2], Lei Li[2], Ming Zhou[2], Qi Liu[2], Junmei Hu[3], Qiyong Gong[2], Xiaoqi Huang[2]
[1]Huaxi MR Research Center (HMRRC), Department of Radiology,West China Hospital of Sichuan University, Chengdu, Sichuan , China; [2]Huaxi MR Research Center (HMRRC), Department of Radiology,West China Hospital of Sichuan University, Chengdu, Sichuan, China; [3]School of Basic Science and Forensic Medicine, Sichuan University, Chengdu, Sichuan, China

Electronic Poster
Neurovascular - Stroke

Exhibition Hall Tuesday 11:00-12:00

Computer 49 **3570.** **Hypertension Induced Change of Retina and Optic Tract in SHR**

Qian Wang[1, 2], Yunxia Li[1, 3], Eric R. Muir[1], Qiang Shen[1], Shiliang Huang[1], Timothy Q. Duong[1]
[1]Research Imaging Institute, The University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Xiang Ya School of Medicine, Central South University, Changsha, China; [3]Department of Neurology, Tongji Hospital, Tongji University, Shanghai, China

Computer 50 **3571.** **Task-Dependent Neurovascular Uncoupling in Moyamoya Disease**

Erin L. Mazerolle[1], Yuhan Ma[2], David Sinclair[2], G Bruce Pike[1]
[1]University of Calgary, Calgary, Alberta, Canada; [2]McGill University, Montreal, Quebec, Canada

Computer 51 **3572.** **Influence of a Severe Internal Carotid Artery Stenosis on Diffusion and Perfusion Values in Acute Stroke Patients**

Philipp Kaesemann[1], Götz Thomalla[2], Bastian Cheng[2], Andras Treszl[3], Jens Fiehler[4], Nils Daniel Forkert[5]
[1]Department of Computational Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Department of Neurology, University Medical Center Hamburg-Eppendorf, Germany; [3]Department of Medical Biometrics and Epidemiology, University Medical Center Hamburg-Eppendorf, Germany; [4]Department of Diagnostic and Interventional Neuroradiology, University Medical Center Hamburg-Eppendorf, Germany; [5]Department of Radiology and Hotchkiss Brain Institute, University of Calgary, Calgary, Alberta, Canada

Computer 52 **3573.** **To Study Chronic Hypobaric Hypoxia Induced Metabolic Alteration in Rat Brain Using High Resolution NMR Spectroscopy**

Sunil Koundal[1, 2], Sonia Gandhi[1], Tanzeer kaur[2], Subash Khushu[1]
[1]NMR Research Centre, Institute of Nuclear Medicine and Allied Sciences (INMAS), New Delhi, Delhi, India; [2]Department of Biophysics, Panjab University, Chandigarh, India

Computer 53 **3574.** **Understanding the Interplay Different MRI Methods Have as White Matter Changes Longitudinally in the Cuprizone Mouse Model**

Vanessa L. Palmer[1], Sheryl L. Herrera[2], Jonathan D. Thiessen[3, 4], Shenghua Zhu[5], Richard Buist[6], Xin-Min Li[7], Marc R. Del Bigio[8], Melanie Martin[9, 10]
[1]Biomedical Engineering, University of Manitoba, Winnipeg, Manitoba, Canada; [2]Physics & Astronomy, University of Mantioba, Winnipeg, Manitoba, Canada; [3]Imaging Program, Lawson Health Research Institute, London, Ontario, Canada; [4]Medical Biophysics, Western University, London, Ontario, Canada; [5]Pharmacology & Therapeutics, University of Mantioba, Winnipeg, Manitoba, Canada; [6]Radiology, University of Mantioba, Winnipeg, Manitoba, Canada; [7]Psychiatry, University of Alberta, Edmonton, Alberta, Canada; [8]Pathology, University of Mantioba, Winnipeg, Manitoba, Canada; [9]Physics, University of Winnipeg, Winnipeg, Manitoba, Canada; [10]Biomedical Engineering, Physics &Astronomy, Pharmacology &Therapeutics, Radiology, University of Mantioba, Winnipeg, Manitoba, Canada

Computer 54 **3575.** **Imaging of Saccular Intracranial Aneurysms with T1W-VISTA Black-Blood Sequence**

Haikun Qi[1], Peng Liu[2], Hansen Li[1], Huijun Chen[1]
[1]Department of Biomedical Engineeing, School of Medicine, Tsinghua University, Beijing, China; [2]Department of Neurosurgical, Beijing Neurosurgical Institute and Beijing Tiantan Hospital, Beijing, China

Computer 55 **3576. Transgenic Mouse Model Recapitulates Brain Pathophysiology of Sickle Cell Disease**

Lisa M. Gazdzinski[1], Lindsay S. Cahill[1], Yu-Qing Zhou[1], Albert KY Tsui[2, 3], Gregory MT Hare[2, 3], Andrea Kassner[4, 5], John G. Sled[1, 6]

[1]Mouse Imaging Centre, Hospital for Sick Children, Toronto, Ontario, Canada; [2]Department of Anaesthesia, St. Michael's Hospital, Toronto, Ontario, Canada; [3]Keenan Research Centre for Biomedical Science, University of Toronto, Ontario, Canada; [4]Department of Medical Imaging, University of Toronto, Ontario, Canada; [5]Department of Physiology and Experimental Medicine, Hospital for Sick Children, Toronto, Ontario, Canada; [6]Department of Medical Biophysics, University of Toronto, Ontario, Canada

Computer 56 **3577. Diffusion Lesion Characteristics After Thrombolysis Treatment in Ischemic Stroke**

Venkata Veerendra Nadh Chebrolu[1], Dattesh Shanbhag[1], Patrice Hervo[2], Marc-Antoine Labeyrie[3], Catherine Oppenheim[3], Rakesh Mullick[4]

[1]Medical Image Analysis Lab, GE Global Research, Bangalore, Karnataka, India; [2]GE Healthcare, Buc, France; [3]Centre Hospitalier, Sainte-Anne, Paris, France; [4]Diagnostics & Biomedical Technologies, GE Global Research, Bangalore, Karnataka, India

Computer 57 **3578. A Study on Brain-Behaviour Functional Relations in Areas Affected Due to Ischemic Stroke Using Diffusion MRI**

J. Mitra[1], P. Bourgeat[1], J. Fripp[1], O. Salvado[1], B. Campbell[2], S. Palmer[3], P. Goodin[3], A. Connelly[3, 4], S. Rose[1], L. Carey[3, 4], the START Program Team[5]

[1]Australian e-Health & Research Centre, CSIRO Digital Productivity Flagship, Herston, QLD, Australia; [2]Department of Radiology, The Melbourne Brain Centre at the Royal Melbourne Hospital, VIC, Australia; [3]The Florey Institute of Neuroscience and Mental Health, Parkville, VIC, Australia; [4]La Trobe University, Bundoora, VIC, Australia; [5]http://www.START.csiro.au, VIC, Australia

Computer 58 **3579. Vessel Wall Edge Enhancement in High Resolution 3D Turbo Spin Echo Imaging**

Sinyeob Ahn[1], Henrik Haraldsson[2, 3], Chengcheng Zhu[2, 3], John Grinstead[4], David Saloner[2, 3], Gerhard Laub[1]

[1]Siemens Healthcare, San Francisco, CA, United States; [2]Radiology, Veterans Affairs Medical Center, San Francisco, CA, United States; [3]Radiology and Biomedical Imaging, University of California, San Francisco, CA, United States; [4]Siemens Healthcare, Portland, OR, United States

Computer 59 **3580. Middle Cerebral Artery Plaques in Recent Small Subcortical Infarction on 3D High-Resolution Black Blood MRI at 3.0T**

Lei Zhang[1], Jianping Jia[2], Yiu-Cho Chung[1], Qi Yang[3], Xin Liu[1], Ying Han[2], Xiaodong Zou[2]

[1]Paul C. Lauterbur Center for Biomedical Imaging, Shenzhen Institutes of Advanced Technology, Chinese Academic of Sciences, Shenzhen, Guangdong, China; [2]Neurology, Xuanwu Hospital, Capital Medical University, Beijing, China; [3]Radiology, Xuanwu Hospital, Capital Medical University, Beijing, China

Computer 60 **3581. Aberrant Regional Homogeneity Related to Cognitive Impairment in Subcortical Stroke Patients: A Resting-State fMRI Study**

Cheng-Yu Peng[1], Ying Cui[1], Deng-Ling Zhao[1], Yun Jiao[1], Shenghong Ju[1], Gao-Jun Teng[1]

[1]Jiangsu Key Laboratory of Molecular and Functional Imaging, Department of Radiology, Zhongda Hospita, Nanjing, Jiangsu, China

Computer 61 **3582. Characterization of Carotid Plaque Composition Using *Ex-Vivo* Magnetic Resonance Imaging at 7T and Histopathology**

Rosario Lopez-Gonzalez[1], Sin Yee Foo[2], William M. Holmes[3], William Stewart[4], Keith Muir[5], Barrie Condon, George Welch[6], Kirsten Forbes[7]

[1]Clinical Physics and Bioengineering, NHS, Glasgow, United Kingdom; [2]School of Medicine, University of Glasgow, Glasgow, United Kingdom; [3]GEMRIC, Institute of Neuroscience and Psychology, Glasgow, United Kingdom; [4]Neuropathology, NHS, Glasgow, United Kingdom; [5]Division of Clinical Neurosciences, University of Glasgow, Glasgow, United Kingdom; [6]Vascular Surgery, NHS, Glasgow, United Kingdom; [7]Institute of Neurological Sciences, NHS, Glasgow, United Kingdom

Computer 62 **3583. Accurately Measured Collateral Perfusion in Stroke Patients Using Multi-TI Arterial Spin-Labeling**

Tianyi Qian[1], Zhiwei Zuo[2], Josef Pfeuffer[3], Yuehua Pu[4], Penggang Qiao[2], Liping Liu[4], Gongjie Li[2]

[1]MR Collaborations NE Asia, Siemens Healthcare, Beijing, China; [2]Radiology, Affiliated hospital of Academy of Military Medical Sciences, Beijing, China; [3]Application Development, Siemens Healthcare, Erlangen, Germany; [4]Neurology, Beijing Tiantan Hospital, Capital Medical University, Beijing, China

Computer 63 **3584. The Dynamics of Cerebrovascular Reactivity Shown with Transfer Function Analysis**

James Duffin[1, 2], Olivia Sobczyk[3], David J. Mikulis[3, 4], Joseph A. Fisher[1, 2]

[1]Department of Physiology, University of Toronto, Toronto, Ontario, Canada; [2]Department of Anaesthesia and Pain Management, University Health Network, Toronto, Ontario, Canada; [3]Institute of Medical Sciences, University of Toronto, Toronto, Ontario, Canada; [4]Joint Department of Medical Imaging and the Functional Neuroimaging Laboratory, University Health Network, Toronto, Ontario, Canada

Computer 64 **3585. Investigation of Global Effect of Ischemic Stroke Based on Oxygen Extraction Fraction Estimation**
Lijuan Zhang[1], Caiyun Shi[1], Chunxiang Jiang[1], Li Yi[2], Guoxi Xie[1], Xiaojing Long[1], Yang Liu[2]
[1]SIAT, Chinese Academy of Sciences, Shenzhen, Guangdong, China; [2]Peiking University Shenzhen Hospital, Guangdong, China

Computer 65 **3586. Assessment of Cerebral Perfusion in Ischemia Patients Using Multi-TI ASL and DSC**
Liu Chunming[1], Xu Liang[1], Dong Longchun[1], Zuo Panli[2], Pfeuffer Josef[3], Liu Jun[1]
[1]Department of radiology, Tianjin union medicine centre, Tianjin, China; [2]Siemens Healthcare, MR Collaborations NE Asia, Beijing, China; [3]Siemens Healthcare, Application Development, Berlin, Germany

Computer 66 **3587. Quantitative Study of Oedema in Acute Stroke: A Protocol for Water Content Mapping**
Ana-Maria Oros-Peusquens[1], Omid Nikoubashman[2], Johannes Lindemeyer[1], Markus Zimmermann[1], Martin Wiesmann[2], N. Jon Shah[1]
[1]Institute of Neuroscience and Medicine (INM-4), Research Centre Juelich, Juelich, Germany; [2]Faculty of Medicine, Department of Neurology, RWTH Aachen University, Aachen, Germany

Computer 67 **3588. Non-Enhanced Hybrid Arterial Spin Labeling MRA for Assessment of the Cervical Carotid and Vertebral Arteries in Patients with Suspected/ Known Cerebral Ischemia: Preliminary Clinical Experience**
Dinesh Gooneratne[1], Yuliya Perchyonok[1, 2], Greg Fitt[1], Andrew Kemp[3], Tim Spelman[4], Shivraman Giri[5], Davide Piccini[6], Robert R. Edelman[7], Marion Simpson[8], Helen Dewey[8, 9], Geraldine Ng[8], Ioannis Koktzoglou[7], Ruth P. Lim[1, 2]
[1]Radiology department, Austin Hospital, Melbourne, Victoria, Australia; [2]Melbourne University, Victoria, Australia; [3]Austin Hospital, Victoria, Australia; [4]Burnet Institute, Victoria, Australia; [5]Siemens Healthcare USA, PA, United States; [6]Advanced Clinical Imaging Technology, Siemens Healthcare IM BM PI, Lausanne, Switzerland; [7]NorthShore University HealthSystem, IL, United States; [8]Neurology Department, Austin Hospital, Victoria, Australia; [9]Neurology Department, Eastern Health, Victoria, Australia

Computer 68 **3589. Cerebral Amyloid Angiopathy Patients Exhibit Cortical Gray Matter Atrophy But Not Hypoperfusion**
Randall B. Stafford[1, 2], Cheryl R. McCreary, [23], Anna Charlton[1], Angela Zwiers[1], X Rachel Wang[1, 2], Ikreet Cheema, [24], Saima Batool[1, 2], Zahinoor Ismail[1, 5], Bradley G. Goodyear, [23], Richard Frayne, [23], Eric E. Smith[1, 3]
[1]Clinical Neurosciences, University of Calgary, Calgary, AB, Canada; [2]Seaman Family MR Research Centre & Hotchkiss Brain Institute, University of Calgary, Calgary, AB, Canada; [3]Radiology, University of Calgary, Calgary, AB, Canada; [4]Neuroscience, University of Calgary, Calgary, AB, Canada; [5]Mathison Centre for Mental Health Research & Education, Hotchkiss Brain Institute, University of Calgary, Calgary, AB, Canada

Computer 69 **3590. Correlation of Quantitative Susceptibility Mapping in Cerebral Cavernous Malformations with Clinical Features**
Huan Tan[1], Abdul Ghani Mikati[1], Lingjiao Zhang[1], Tian Liu[2], Yi Wang[3], Robert R. Edelman[4, 5], Gregory A. Christoforidis[1], Issam A. Awad[1]
[1]Surgery, University of Chicago, Chicago, IL, United States; [2]MedImageMetric LLC, New York, NY, United States; [3]Weill Cornell Medical College, New York, NY, United States; [4]NorthShore University HealthSystem, Evanston, IL, United States; [5]Northwestern University Feinberg School of Medicine, Chicago, IL, United States

Computer 70 **3591. Exercise Intensity Modulates the Change in Cerebral Blood Flow Following Aerobic Exercise in Chronic Stroke: A PCASL Study**
Andrew D. Robertson[1], David E. Crane[1], A. Saeed Rajab[1, 2], Walter Swardfager[1, 3], Susan Marzolini[1, 3], Laura E. Middleton, [34], Bradley J. MacIntosh[1, 2]
[1]Heart & Stroke Foundation Canadian Partnership for Stroke Recovery, Sunnybrook Research Institute, University of Toronto, Toronto, ON, Canada; [2]Department of Medical Biophysics, University of Toronto, Toronto, ON, Canada; [3]Toronto Rehabilitation Institute, University Health Network, University of Toronto, Toronto, ON, Canada; [4]University of Waterloo, Department of Kinesiology, Waterloo, ON, Canada

Computer 71 **3592. MRI Characterizations of Region Specific White Matter Hyperintensities and Vertebral Artery Stenosis**
Liya Wang[1, 2], Adrian Lam[3], John Oshinski[2], Xiaodong Zhong[4], Chad A. Holder[2], Felicia Goldstein[5], Diana Ge[2], Hui Mao[1, 2]

[1]Laboratory of Functional-Molecular Imaging and Nanomedicine, Emory University School of Medicine, Atlanta, GA, United States; [2]Radiology and Imaging Sciences, Emory University School of Medicine, Atlanta, GA, United States; [3]Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA, United States; [4]MR R&D Collaborations, Siemens Healthcare, Atlanta, GA, United States; [5]Neurology, Emory University School of Medicine, Atlanta, GA, United States

Computer 72 **3593. Reduced Visual Cortex Perfusion Without Volume Loss in Mild to Moderate Hypertension**
Diandian Huang[1], Jing Zhang[1], Ting Wang[1], Yanhua Li[2], Bensheng Qiu[3], Xiaoxuan He[3], Zhenyu Zhou[4], Bing Wu[4], Lin Ma[1], Xin Lou[1]
[1]Department of Radiology, Chinese PLA General Hospital, Beijing, China; [2]Department of cardiology, Chinese PLA General Hospital, Beijing, China; [3]Department of Electronic Science and Technology, University of Science and Technology of China, Anhui, China; [4]MR Research Center, GE Health care, Beijing, China

Electronic Poster
Neurovascular Disease

Exhibition Hall Tuesday 11:00-12:00

Computer 73 **3594. Connectivity and Perfusion Analyses with Simultaneous MultiSlice (SMS) Resting-State fMRI**
Thomas Christen[1], Samantha Holdsworth[1], Hesamoddin Jahanian[1], Hua Wu[2], Kangrong Zhu[3], Adam Kerr[3], Matthew J. Middione[4], Robert F. Dougherty[2], Michael Moseley[1], Greg Zaharchuk[1]
[1]Department of Radiology, Stanford University, Stanford, CA, United States; [2]Center for Cognitive and Neurobiological Imaging, Stanford University, Stanford, CA, United States; [3]Department of Electrical Engineering, Stanford University, Stanford, CA, United States; [4]Applied Sciences Laboratory West, GE Healthcare, Menlo Park, CA, United States

Computer 74 **3595. Quantification of Local Blood Oxygen Saturation by MRI to Distinguish Ischemic Core from Penumbra in Experimental Stroke**
ISMRM MERIT AWARD magna cum laude
Ligia SIMOES BRAGA BOISSERAND[1, 2], Benjamin LEMASSON[1], Lydiane HIRSCHLER[1, 2], Violaine HUBERT[1], Anaïck MOISAN[1], Emmanuel BARBIER[1, 2], Chantal REMY[1, 2], Olivier DETANTE[1, 2]
[1]Inserm U836, Grenoble, -, France; [2]Université Grenoble Alpes, Grenoble, -, France

Computer 75 **3596. Clinical Value of Post-Contrast Vessel Wall Imaging with MSDE for Patients with Cerebral Arteriovenous Malformation**
Akira Kunimatsu[1], Yasushi Watanabe[2], Mitsuharu Miyoshi[3], Kouhei Kamiya[1], Masaki Katsura[2], Harushi Mori[1], Hiroyuki Kabasawa[3], Kuni Ohtomo[1]
[1]Department of Radiology, The University of Tokyo, Tokyo, Japan; [2]Department of Radiology, The University of Tokyo Hospital, Tokyo, Japan; [3]GE Healthcare, Tokyo, Japan

Computer 76 **3597. Neuroplasticity for Spontaneous Functional Recovery After Neonatal Hypoxic Ischemic Injury**
Won Beom Jung[1, 2], Geun Ho Im[1, 2], Sun Young Chae[3], Yong Hee Han[1, 2], Jung Hee Lee[1, 3]
[1]Department of Radiology Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea; [2]Center for Molecular and Cellular Imaging Samsung Biomedical Research Institute, Seoul, Korea; [3]Samsung Advanced Institute of Health Science and Technology Sungkyunkwan University, Seoul, Korea

Computer 77 **3598. Cerebral Blood Flow and Vascular Reactivity in Progressive Hypertension**
Yunxia Li[1, 2], Qiang Shen[1], Shiliang Huang[1], Wei Li[1], Eric R. Muir[1], Justin Alexander Long[1], Timothy Q. Duong[1]
[1]Research Imaging Institute, The University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Department of Neurology, Tongji Hospital, Tongji University, Shanghai, China

Computer 78 **3599. A Simultaneous Acquisition Method for T2* Weighted and PC-MRA Images**
Yeji Han[1], Eung Yeop Kim[2], Yeon Chul Ryu[3], Jun-Young Chung[1]
[1]Department of Biomedical Engineering, Gachon University, Incheon, Korea; [2]Radiology, Gachon University Gil Medical Center, Incheon, Korea; [3]Neuroscience Research Institute, Gachon University, Incheon, Korea

Computer 79 **3600. MRI Investigation of Cerebrovascular Reactivity and Neurovascular Coupling in Chronic Hypertension**
Yunxia Li[1, 2], Shiliang Huang[1], Qiang Shen[1], Eric R. Muir[1], Timothy Q. Duong[1]
[1]Research Imaging Institute, The University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Department of Neurology, Tongji Hospital, Tongji University,, Shanghai, China

Computer 80 3601. Measuring the Time Characteristic of the BOLD Cerebrovascular Reactivity Response to a Step Hypercapnic Stimulus.
Julien Poublanc[1], Adrian Crawley[1], Olivia Sobczyk[2], Gaspard Montandon[1], Kevin Sam[1], Daniel Mandell[1], Lakshmikumar Venkatraghavan[3], James Duffin[3], David Mikulis[1], Joseph Fisher[3]
[1]Joint Department of Medical Imaging, University Health Network, Toronto, Ontario, Canada; [2]Institute of Medical Sciences, Ontario, Canada; [3]Department of Anaesthesia and Physiology, University Health Network, Toronto, Ontario, Canada

Computer 81 3602. The Alterations of Functional Brain Network and Its Relationship to Cognitive Decline in Patients with Carotid Stenosis: A Resting-State fMRI Study
Pei-Shan Ho[1, 2], Ting-Yu Chang[3], Meng-Yang Ho[4], Chang-Wei Wu[5], Kuo-Lun Huang[3], Ho-Fai Wong[6], Tsong-Hai Lee[3], Ho-Ling Liu[7, 8]
[1]Department of Medical Imaging and Radiological Sciences, Chang Gung University, Taoyuan, Taiwan; [2]Department of Biological Science and Technology, National Chiao Tung University, Hsinchu, Taiwan; [3]Department of Neurology and Stroke Center, Chang Gung Memorial Hospital, and Chang Gung University College of Medicine, Taoyuan, Taiwan; [4]Department of Occupational Therapy, Chang Gung University, Taoyuan, Taiwan; [5]Graduate Institute of Biomedical Engineering, National Central University, Taoyuan, Taiwan; [6]Department of Medical Imaging and Intervention, Chang Gung Memorial Hospital, Taoyuan, Taiwan; [7]Department of Imaging Physics, The University of Texas M. D. Anderson Cancer Center, Houston, TX, United States; [8]Department of Medical Imaging and Radiological Sciences,, Chang Gung University, Taoyuan, Taiwan

Computer 82 3603. Hybridized Arterial Spin Labeled MR Angiography in the Evaluation of Carotid Artery Stenosis in Patients with Suspected Stroke: Preliminary Analysis and Comparison to Gadolinium-Enhanced MR Angiography
Kai Xu[1], LeRoy Stromberg[1], David Rusinak[1], Stephen Futterer[1], Shivraman Giri[1], James Carr[1], Robert Edelman[1], Ioannis Koktzoglou[2], Jeremy Collins[1]
[1]Radiology, Northwestern University, Chicago, IL, United States; [2]Radiology, NorthShore University HealthSystem, Evanston, IL, United States

Computer 83 3604. Perfusion Imaging: Bolus Truncation Alters Penumbral Status of Acute Stroke Patients. Using a Vascular Model Reduces This Effect
Irene Klærke Mikkelsen[1], Lars Riisgaard Ribe[1], Leif Østergaard[1]
[1]Center for functionally integrative neuroscience, Aarhus University, Aarhus, Denmark

Computer 84 3605. Optimization of Tuning Parameters for NESTA Algorithm in Reconstruction of 3D TOF-MRA
Yasutaka Fushimi[1], Koji Fujimoto[1], Tomohisa Okada[1], Akira Yamamoto[1], Takayuki Yamamoto[1], Tai Akasaka[1], Kei Sano[2], Toshiyuki Tanaka[2], Kaori Togashi[1]
[1]Kyoto University Graduate School of Medicine,, Kyoto, Japan; [2]Department of Systems Science, Kyoto University Graduate School of Informatics, Kyoto, Japan

Computer 85 3606. Accelerating TOF MRA in Clinical Practice Using Sparse MRI with Variable Poisson Density Sampling
Aurelien F. Stalder[1], Yutaka Natsuaki[2], Michaela Schmidt[1], Xiaoming Bi[2], Michael O. Zenge[3], Mariappan Nadar[4], Peter Speier[1], Peter Schmitt[1], Gerhard Laub[2]
[1]Siemens Healthcare, Erlangen, Germany; [2]Siemens Healthcare, CA, United States; [3]Siemens Healthcare, NY, United States; [4]Siemens Corporate Technology, NJ, United States

Computer 86 3607. Association of Middle Cerebral Artery Steno-Occlusion with Intraplaque Hemorrhage with Acute Cerebral Infarction: A Magnetic Resonance Imaging Study
Huilin Zhao[1], Jinnan Wang[2], Xiaosheng Liu[1], Xihai Zhao[3], Chun Yuan[4], Jianrong Xu[1]
[1]Radiology, Renji hospital, Shanghai Jiaotong University, Shanghai, China; [2]Philips Research North America, NY, United States; [3]Biomedical Engineering & Center for Biomedical Imaging Research,Tsinghua University, Beijing, China; [4]University of Washington, WA, United States

Computer 87 3608. Snapshot MR-OEF for Simultaneous Imaging of Tissue Oxygenation and CVR
Charles G. Cantrell[1], Parmede Vakil[1], Timothy J. Carroll[1]
[1]Biomedical Engineering, Northwestern University, Chicago, IL, United States

Computer 88 3609. Quantitative MRI of Brain Perivascular Space
Kejia Cai[1, 2], Rongwen Tain[1, 2], Sandhitsu Das[3], Frederick C. Damen[1, 2], Yi Sui[2, 4], Shika Dammala[5], Paul Yushkevich[3], Tibor Valyi-Nagy[6], Mark A. Elliott[3], X. Joe Zhou[1, 2]

[1]Radiology, College of Medicine, University of Illinois at Chicago, Chicago, IL, United States; [2]Center for MR Research, College of Medicine, University of Illinois at Chicago, Chicago, IL, United States; [3]Radiology, School of Medicine, University of Pennsylvania, Philadelphia, PA, United States; [4]Bioengineering, University of Illinois at Chicago, Chicago, IL, United States; [5]Biology, University of Illinois at Chicago, Chicago, IL, United States; [6]Neuropathology, College of Medicine, University of Illinois at Chicago, Chicago, IL, United States

Computer 89 **3610. Hemodynamic Etiology of Stroke Risk in Children with Sickle Cell Anemia**

Przemyslaw Kosinski[1], Paula Croal[2], Jackie Leung[2], Andrea Kassner, [23]
[1]Institute of Medical Science, The University of Toronto, Toronto, Ontario, Canada; [2]Physiology & Experimental Medicine, The Hospital for Sick Children, Ontario, Canada; [3]Medical Imaging, The University of Toronto, Toronto, Ontario, Canada

Computer 90 **3611. Predicting Recovery from Stroke Using Baseline Imaging Biomarkers of Structural Connectome Disruption**

Amy Kuceyeski[1], Babak B. Navi[2], Hooman Kamel[2], Norman Relkin[2], Ashish Raj[3], Joan Toglia[4], Costantino Iadecola[2], Michael O'Dell[4]
[1]Radiology and the Brain and Mind Research Institute, Weill Cornell Medical College, New York, NY, United States; [2]Neurology and the Brain and Mind Research Institute, Weill Cornell Medical College, NY, United States; [3]Radiology and the Brain and Mind Research Institute, Weill Cornell Medical College, NY, United States; [4]Rehabilitation Medicine, Weill Cornell Medical College, NY, United States

Computer 91 **3612. The Effects of Methylene Blue on Autophagy and Apoptosis in MRI-Defined Normal Tissue, Ischemic Penumbra and Ischemic Core**

Zhao Jiang[1], Lora Talley Watts[1], Shiliang Huang[1], Pavel Rodriguez[1], Qiang Shen[1], Timothy Duong[1]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

Computer 92 **3613. pH-Weighted Imaging in Diabetes Mellitus Suffering Acute Cerebral Ischemic Stroke**

Zhuozhi Dai[1, 2], Yanlong Jia[2], Gen Yan[2], Fei Duan[2], Gang Xiao[3], Zhiwei Shen[4], Hongfu Sun[1], Alan H. Wilman[1], Renhua Wu[2, 4]
[1]Biomedical Engineering, University of Alberta, Edmonton, Alberta, Canada; [2]Medical Imaging, 2nd Affiliated Hospital, Shantou University Medical College, Shantou, Guangdong, China; [3]Math and Information Technology, Hanshan Normal University, Guangdong, China; [4]Provincial Key Laboratory of Medical Molecular Imaging, Guangdong, China

Computer 93 **3614. 3-Tesla MRI Non-Contrast Vessel Wall Imaging in Young, Healthy Adults and Moyamoya Patients**

Daniel F. Arteaga[1], Manus J. Donahue[1, 2], Carlos C. Faraco[1], Taylor L. Davis[1], Jeroen Hendrikse[3], Lori C. Jordan[2], Jeroen C.W. Siero[3], Allison O. Scott[1], Megan K. Strother[1]
[1]Radiology, Vanderbilt University, Nashville, TN, United States; [2]Neurology, Vanderbilt University, Nashville, TN, United States; [3]University Medical Center Utrecht, Utrecht, Netherlands

Computer 94 **3615. Non-Invasive Identification of Crossed Cerebellar Diaschisis Following Cerebral Ischemic Stroke Using Combined Measures of Cerebrovascular Reactivity, Cerebral Blood Flow, and Wallerian Degeneration**

Carlos C. Faraco[1], Manus J. Donahue[1, 2], Cari L. Buckingham[1], Fei Ye[3], Lori C. Jordan[2], Daniel F. Arteaga[1], Megan K. Strother[1]
[1]Radiology and Radiological Sciences, Vanderbilt University School of Medicine, Nashville, TN, United States; [2]Department of Neurology, Vanderbilt University Medical Center, Nashville, TN, United States; [3]Center for Quantitative Sciences, Vanderbilt University School of Medicine, Nashville, TN, United States

Computer 95 **3616. Compromised Cerebrovascular Reactivity Is Reversible in Patients with Carotid Artery Stenosis: A BOLD MRI Study**

Jian Hui-Shan[1, 2], Chang Ting-Yu[1], Huang Kuo-Lun[1], Chang Yeu-Jhy[1], Chang Chien-Hung[1], Wai Yau-Yau[3], Yeh Chih-Hua[3], Lee Tsong-Hai[1], Liu Ho-Ling[4, 5]
[1]Department of Neurology and Stroke Center, Chang Gung Memorial Hospital, Taoyuan, Taiwan; [2]Departiment of Biomedical Engineering and Environmental Sciences, Tsing Hua University, Hsinchu, Taiwan; [3]Department of Medical Imaging and Intervention, Chang Gung Memorial Hospital, Taoyuan, Taiwan; [4]Department of Medical Imaging and Radiological Sciences, Chang Gung University, Taoyuan, Taiwan; [5]Department of Imaging Physics, The University of Texas M. D. Anderson Cancer Center, Houston, TX, United States

Computer 96 **3617. GRE Vs. PWI for Hemorrhage and Intravascular Clot Detection: A Retrospective Analysis of the DEFUSE2, EPITHET and SENSE 3 Datasets**
Shalini A. Amukotuwa[1, 2], Fernando Calamante[2], Stephen M. Davis[3], Gregory W. Albers[4], Roland Bammer[1, 5]
[1]Department of Radiology, Stanford University, Stanford, CA, United States; [2]The Florey Institute of Neuroscience and Mental Health, University of Melbourne, Parkville, VIC, Australia; [3]Department of Neurology, Royal Melbourne Hospital, Parkville, VIC, Australia; [4]Department of Neurology, Stanford University, Stanford, CA, United States; [5]on behalf of the EPITHET, , DEFUSE2, and SENSE3 investigators, United States

Electronic Poster
Non-Cartesian, Multiband & Parallel Imaging
Exhibition Hall Tuesday 13:30-14:30

Computer 1 **3618. Self-Calibrated Radial Sampling Parallel Imaging Reconstruction with Iterative K-X Estimation**
Yi-Cheng Hsu[1], Ying-Hua Chu[1], Fa-Hsuan Lin[1]
[1]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan

Computer 2 **3619. Effective Rank for Automated Parallel Imaging Regularization**
Stephen F. Cauley[1, 2], Kawin Setsompop[1, 2], Lawrence Wald[1, 2], Jonathan R. Polimeni[1, 2]
[1]Athinoula A. Martinos Center for Biomedical Imaging, MGH/HST, Charlestown, MA, United States; [2]Dept. of Radiology, Harvard Medical School, Boston, MA, United States

Computer 3 **3620. Squashing the G-Factor: Ultra High Scan Acceleration Factors in Reduced Field of Excitation Imaging**
Ronald Mooiweer[1], Alessandro Sbrizzi[1], Alexander Raaijmakers[1], Cornelis A. T. van den Berg[1], Peter R. Luijten[1], Hans Hoogduin[1]
[1]UMC Utrecht, Utrecht, Netherlands

Computer 4 **3621. Accelerated CEST MRI Using Parallel Imaging Acquisition of Golden-Angle Radial Ordering Scheme and Compressed Sensing Reconstruction**
Jinsuh Kim[1], Casey P. Johnson[2], Dingxin Wang[3], Philip Zhe Sun[4]
[1]University of Iowa, Iowa City, IA, United States; [2]University of Iowa, IA, United States; [3]Siemens Medical Solutions USA, Inc., Minneapolis, MN, United States; [4]Martinos Center for Biomedical Imaging, MGH, Charlestown, MA, United States

Computer 5 **3622. kp-GRAPPA: A Self-Calibrated Reconstruction Scheme for 3D Multi-Phase Respiratory Cine**
Cihat Eldeniz[1], Wolfgang Rehwald[2], Brian Dale[3], Yasheng Chen[1], Hongyu An[1]
[1]University of North Carolina at Chapel Hill, Chapel Hill, NC, United States; [2]Siemens Healthcare, Malvern, PA, United States; [3]Siemens Healthcare, Cary, NC, United States

Computer 6 **3623. Pyramidal Representation of Block Hankel Structured Low Rank Matrix (PRESTO) for High Performance Parallel MRI**
Kyong Hwan Jin[1], Dongwook Lee[1], Jong Chul Ye[1]
[1]Dept. of Bio and Brain Engineering, KAIST, Daejeon, Korea

Computer 7 **3624. An Image Domain Low Rank Model for Calibrationless Reconstruction of Images with Slowly Varying Phase**
ISMRM MERIT AWARD magna cum laude
Evan Levine[1, 2], Brian Hargreaves[2]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Radiology, Stanford University, Stanford, CA, United States

Computer 8 **3625. Parallel Imaging Acceleration Beyond Coil Limitation Using a K-Space Variant Low-Rank Constraint on Correlation Matrix**
Yu Y. Li[1]
[1]Radiology, Imaging Research Center, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States

Computer 9 **3626. GRAPPA-Accelerated Coronary MRA Benefits from an Outer Volume Suppressing 2D-T_2-Prep**
Andrew J. Coristine[1, 2], Jérôme Yerly, [23], Matthias Stuber, [23]

[1]Department of Radiology,, University Hospital (CHUV) and University of Lausanne (UNIL), Lausanne, VD, Switzerland; [2]CardioVascular Magnetic Resonance (CVMR) research centre, Centre for Biomedical Imaging (CIBM), Lausanne, VD, Switzerland; [3]Department of Radiology, University Hospital (CHUV) and University of Lausanne (UNIL), Lausanne, VD, Switzerland

Computer 10 **3627. CASI-SENSE: A Novel Reconstruction Strategy for 3D Single Breath-Hold Isotropic Cine Imaging**

Nils Nothnagel[1], Rodrigo Fernandez-Jiménez[2], Gonzalo Lopez-Martin[2], Manuel Desco[3], Valentin Fuster[2], Borja Ibañez[2], Javier Sánchez-González[1]
[1]Philips Healthcare Spain, Madrid, Spain; [2]Atherothrombosis in Experimental Imaging, Centro Nacional de Investigaciones Cardiovasculares (CNIC), Madrid, Spain; [3]Departamento de Bioingeniería e Ingeniería Aerospacial, Universidad Carlos III, Madrid, Spain

Computer 11 **3628. Pseudo-Polar Trajectories Achieve High Acceleration Rates with High Image Fidelity: Experiments at 3T and 7T**

Ali Ersoz[1], L Tugan Muftuler[2, 3]
[1]Department of Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Department of Neurosurgery, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Center for Imaging Research, Medical College of Wisconsin, Milwaukee, WI, United States

Computer 12 **3629. UTE MRI Versus Dual-Energy CT for Imaging Different Kidney Stones Types**

El-Sayed H. Ibrahim[1, 2], Robert Pooley[2], Mellena Bridges[2], Joseph Cernigliaro[2], James Williams[3], William Haley[2]
[1]University of Michigan, Ann Arbor, MI, United States; [2]Mayo Clinic, Jacksonville, FL, United States; [3]Indiana Unicersity, IN, United States

Computer 13 **3630. SAR Reduced Neuro-Imaging at 7T Using Radial GRASE**

Melisa Okanovic[1], Robert Trampel[2], Martin Blaimer[1], Felix Breuer[1], Peter Michael Jakob[1, 3]
[1]MRB Research Center for Magnetic-Resonance-Bavaria, Würzburg, Bavaria, Germany; [2]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Saxony, Germany; [3]Experimental Physics 5, University of Würzburg, Würzburg, Bavaria, Germany

Computer 14 **3631. Fast Isotropic Banding-Free BSSFP Imaging Using 3D Dynamically Phase-Cycled Radial BSSFP (3D DYPR-SSFP)**

Thomas Benkert[1], Philipp Ehses[2, 3], Martin Blaimer[1], Peter Jakob, [14], Felix Breuer[1]
[1]Research Center Magnetic Resonance Bavaria, Würzburg, Bavaria, Germany; [2]Department for Neuroimaging, University of Tübingen, Tübingen, Baden-Württemberg, Germany; [3]High-Field MR Center, Max Planck Institute for Biological Cybernetics, Tübingen, Baden-Württemberg, Germany; [4]Experimental Physics 5, University of Würzburg, Bavaria, Germany

Computer 15 **3632. A Self-Calibrated Through-Time Radial GRAPPA Method**

ISMRM MERIT AWARD magna cum laude

Ozan Sayin[1], Haris Saybasili[2], M. Muz Zviman[3], Mark Griswold[4, 5], Nicole Seiberlich[5], Daniel A. Herzka[6]
[1]Department of Biomedical Engineering , Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Siemens Healthcare USA, Inc., Chicago, IL, United States; [3]Department of Medicine, Cardiology, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [4]Department of Radiology, Case Western Reserve University, Cleveland, OH, United States; [5]Department of Biomedical Engineering , Case Western Reserve University, Cleveland, OH, United States; [6]Department of Biomedical Engineering, Johns Hopkins University School of Medicine, Baltimore, MD, United States

Computer 16 **3633. Random Delayed Spirals for Compressive Sensing Cine MRI**

Giuseppe Valvano[1, 2], Nicola Martini[2], Dante Chiappino[2], Luigi Landini[1, 2], Maria Filomena Santarelli, [23]
[1]Department of Information Engineering, University of Pisa, Pisa, PI, Italy; [2]Fondazione G. Monasterio CNR-Regione Toscana, Massa, MS, Italy; [3]Institute of Clinical Physiology, CNR, Pisa, PI, Italy

Computer 17 **3634. Navigator Echo Collection for Sliding Interleaved Cylinder Acquisition**

Kie Tae Kwon[1], Adam B. Kerr[1], Dwight G. Nishimura[1]
[1]Stanford University, Stanford, CA, United States

Computer 18 **3635. 3D MP-RAGE with Distributed Spirals**

Dinghui Wang[1], Zhiqiang Li[1], James G. Pipe[1]
[1]Neuroimaging Research, Barrow Neurological Institute, Phoenix, AZ, United States

Computer 19 3636. Modulo-Prime Spoke (MoPS) Interleaving for K-Space Segmented Radial Acquisition Strategies
Keigo Kawaji[1], Hui Wang[2], Sui-Cheng Wang, [13], Akiko Tanaka[4], Takeyoshi Ota[4], Roberto M. Lang[1], Amit R. Patel[1]
[1]Medicine, Section of Cardiology, The University of Chicago, Chicago, IL, United States; [2]Philips Medical Systems, Cleveland, OH, United States; [3]Biomedical Engineering, Northwestern University, Evanston, IL, United States; [4]Surgery, The University of Chicago, Chicago, IL, United States

Computer 20 3637. A Simple BOLD Contrast Model Based on Functional Activation Pattern and K-Space Trajectory
Vimal Singh[1], David Ress[2]
[1]Electrical Engineering, University of Texas at Austin, Austin, TX, United States; [2]Neuroscience, Baylor College of Medicine, Hosuton, TX, United States

Computer 21 3638. Tiny Golden Angles: A Small Surrogate for the Radial Golden Angle Profile Order
ISMRM MERIT AWARD magna cum laude
Stefan Wundrak[1, 2], Jan Paul[1], Johannes Ulrici[2], Erich Hell[2], Volker Rasche[1]
[1]Ulm University, Ulm, Baden-Württemberg, Germany; [2]Sirona Dental Systems, Bensheim, Hessen, Germany

Computer 22 3639. Fast Non-Cartesian Reconstruction with Pruned Fast Fourier Transform
Frank Ong[1], Martin Uecker[1], Wenwen Jiang[2], Michael Lustig[1]
[1]Electrical Engineering and Computer Sciences, University of California, Berkeley, Berkeley, CA, United States; [2]Bioengineering, UC Berkeley/UCSF, Berkeley, CA, United States

Computer 23 3640. Accelerated Multiband SSFP Imaging with Controlled Aliasing in Parallel Imaging and Integrated-SSFP (CAIPI-ISSFP)
Thomas Boyd Martin[1, 2], Yi Wang[2], Steen Moeller[3], Kyung Sung[4], Danny JJ. Wang[2]
[1]Biomedical Physics Interdepartmental Program, University of California Los Angeles, Los Angeles, CA, United States; [2]Neurology, University of California Los Angeles, Los Angeles, CA, United States; [3]Center for Magnetic Resonance Research, University of Minnesota, MN, United States; [4]Radiological Sciences, University of California Los Angeles, Los Angeles, CA, United States

Computer 24 3641. *In-Vivo* Fully Phase-Encoded Magnetic Resonance Imaging in the Presence of Metal Using Multiband RF Excitation
ISMRM MERIT AWARD magna cum laude
Nathan S. Artz[1, 2], Curtis N. Wiens[1], Matthew R. Smith[1], Diego Hernando[1], Alexey Samsonov[1], Scott B. Reeder[1, 3]
[1]Department of Radiology, University of Wisconsin, Madison, WI, United States; [2]Department of Radiological Sciences, Saint Jude Children's Research Hospital, Memphis, TN, United States; [3]Department of Medical Physics, University of Wisconsin, Madison, WI, United States

Electronic Poster
Fat Water Separation

Exhibition Hall Tuesday 13:30-14:30

Computer 25 3642. Can High-Resolution T1W 3-Dimensional (3D) Gradient Recalled Echo (GRE) with 2-Point Dixon Derived Fat-Water Separation (FLEX) Replace Conventional T1W Turbo Spin-Echo (TSE) Imaging for Assessment of Prostate Cancer?
Karim B. Samji[1, 2], Abdulmohsen Alrashed[1, 2], Wael M. Shabana[1, 2], Matthew DF McInnes[1, 2], Nicola Schieda[1, 2]
[1]Department of Medical Imaging, The Ottawa Hospital, Ottawa, ON, Canada; [2]University of Ottawa, Ottawa, ON, Canada

Computer 26 3643. Water-Fat Separation with a Dual-Echo Two-Point Dixon Technique for Pencil Beam Navigator Echo
Yuji Iwadate[1], Kunihiro Miyoshi[2], Masanori Ozaki[2], Hiroyuki Kabasawa[1]
[1]Global MR Applications and Workflow, GE Healthcare Japan, Hino, Tokyo, Japan; [2]MR Engineering, GE Healthcare Japan, Tokyo, Japan

Computer 27 3644. Hepatic Fat Quantification for Suspected NAFLD Patients Using 3 Different Methods: HISTO, 3D Multi-Echo GRE DIXON and Invasive Liver Biopsy
Wei Wang[1], Xiuzhong Yao[1], Hongmei Yan[2], Hua Bian[2], Xiaodong Zhong[3], Radhouene Neji[4], Caixia Fu[5], Hui Liu[6], Dehe Weng[5], Ignacio Vallines[6], Mengsu Zeng[1]
[1]Radiology Department, Zhongshan Hospital, Fudan University, Shanghai, China; [2]Endocrinology Department, Zhongshan Hospital, Fudan University, Shanghai, China; [3]MR collaborations, Siemens Healthcare, Atlanta, GA, United States; [4]MR collaborations,

Siemens Healthcare, Frimley,, Camberley, United Kingdom; [5]Application Department, Siemens Shenzhen Magnetic Resonance Ltd., Shenzhen, Guangdong, China; [6]MR collaborations, Siemens Healthcare, Shanghai, China

Computer 28 **3645.** **Two-Point Dixon with Single Species Domination Assumption**
Kang Wang[1], Ken-Pin Hwang[2], Zachary Slavens[3], Ersin Bayram[2]
[1]Global Applications and Workflow, GE Healthcare, Madison, WI, United States; [2]Global Applications and Workflow, GE Healthcare, Houston, TX, United States; [3]MR Engineering, GE Healthcare, Waukesha, WI, United States

Computer 29 **3646.** **Robust Two-Point Dixon Water/fat Separation Using Graph Cut Algorithm**
Dong Zhou[1], Jianwu Dong[2], Pascal Spincemaille[1], Ashish Raj[1], Martin Prince[1], Yi Wang[1]
[1]Weill Cornell Medical College, New York, NY, United States; [2]Tsinghua University, Beijing, China

Computer 30 **3647.** **Olefinic Fat Suppression in Skeletal Muscle DTI with Combined 6- And 2-Point Dixon**
Jedrzej Burakiewicz[1], Melissa T. Hooijmans[1], Erik H. Niks[2], Jan J.G.M. Verschuuren[2], Andrew G. Webb[1], Hermien E. Kan[1]
[1]Department of Radiology, Leiden University Medical Center, Leiden, Zuid Holland, Netherlands; [2]Department of Neurology, Leiden University Medical Center, Leiden, Zuid Holland, Netherlands

Computer 31 **3648.** **Dixon Imaging with Golden Angle Stack of Stars Acquisition**
Jan Hendrik Wülbern[1], Mariya Doneva[1], Holger Eggers[1], Christian Stehning[1], Peter Börnert[1]
[1]Philips Research Europe, Hamburg, Germany

Computer 32 **3649.** **A Novel Partial Averaging Approach for Reducing Motion Ghosting in Dixon TSE**
Gabriele Beck[1], Alan Huang[1], Gert van Ijperen[1], Lars van Loon[1], Marko Ivancevic[1]
[1]Philips Healthcare, Best, Netherlands

Computer 33 **3650.** **Dixon Fat Suppression for Off-Resonant Water Imaging of Superparamagnetic Iron Oxide Nanoparticles**
Dirk Krüger[1], Silvia Lorrio González[1], René M. Botnar[1]
[1]Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom

Computer 34 **3651.** **A Fast Water-Fat Separation Method Using Multi Echo Time Encoding and Nonlinear Least Squares Estimation**
JaeJin Cho[1], Changheun Oh[2], Kinam Kwon[2], HyunWook Park[2]
[1]Department of Electrical Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Chungcheong,, Korea; [2]Department of Electrical Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Chungcheong, Korea

Computer 35 **3652.** **Water-Fat Separation Using a Locally Low-Rank Enforcing Reconstruction**
Felix Lugauer[1], Dominik Nickel[2], Jens Wetzl[1], Berthold Kiefer[2], Joachim Hornegger[1]
[1]Pattern Recognition Lab, Department of Computer Science, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany; [2]Siemens AG, Healthcare, Imaging & Therapy Systems, Magnetic Resonance, Erlangen, Germany

Computer 36 **3653.** **Multi-Scale Graph Cut Algorithm for Water/fat Separation**
Johan Berglund[1]
[1]Karolinska Institutet, Stockholm, Sweden

Computer 37 **3654.** **Chemical Shift Encoding-Based Water-Fat Imaging of Skeletal Muscle in the Presence of Fat Resonance Shift and Phase Errors**
Stefan Ruschke[1], Holger Eggers[2], Hendrik Kooijman[3], Pia M. Jungmann[1], Axel Haase[4], Ernst J. Rummeny[1], Thomas Baum[1], Dimitrios C. Karampinos[1]
[1]Department of Diagnostic and Interventional Radiology, Technische Universität München, Munich, Bayern, Germany; [2]Philips Research, Hamburg, Germany; [3]Philips Healthcare, Hamburg, Germany; [4]Zentralinstitut für Medizintechnik, Technische Universität München, Garching, Bayern, Germany

Computer 38 **3655.** **Accelerating Water-Fat Separation for Intragastric Fat Distribution with a Signal Model-Based Dictionary**
Dian Liu[1], Jelena Curcic[1, 2], Andreas Steingoetter[1, 2], Sebastian Kozerke[1]
[1]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [2]Division of Gastroenterology and Hepatology, University Hospital Zurich, Zurich, Switzerland

Computer 39 **3656.** **Fat Water Separation and Field Map Estimation with Multiresolution Region Growing Algorithm**
Chuanli Cheng[1, 2], Chao Zou[1], Hairong Zheng[1], Xin Liu[1]
[1]Paul C. Lauterbur Biomedical Imaging Research Center, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, Guangdong, China; [2]University of Chinese Academy of Sciences, Beijing, China

Computer 40 **3657.** **Addressing Phase Errors in Quantitative Water-Fat Imaging at 3 T Using a Time-Interleaved Multi-Echo Gradient-Echo Acquisition**
ISMRM MERIT AWARD magna cum laude
Stefan Ruschke[1], Holger Eggers[2], Hendrik Kooijman[3], Thomas Baum[1], Marcus Settles[1], Axel Haase[4], Ernst J. Rummeny[1], Dimitrios C. Karampinos[1]
[1]Department of Diagnostic and Interventional Radiology, Technische Universität München, Munich, Bayern, Germany; [2]Philips Research, Hamburg, Germany; [3]Philips Healthcare, Hamburg, Germany; [4]Zentralinstitut für Medizintechnik, Technische Universität München, Garching, Bayern, Germany

Computer 41 **3658.** **Time-Domain Calibration of Fat Signal Dephasing from Multi-Echo STEAM Spectroscopy for Multi-Gradient-Echo Imaging Based Fat Quantification**
M. Dominik Nickel[1], Stephan A.R. Kannengiesser[1], Berthold Kiefer[1]
[1]MR Applications Development, Siemens Healthcare, Erlangen, Germany

Computer 42 **3659.** **An Efficient Chemical-Shift Encoded Imaging for Liver Fat Quantification**
Abraam S. Soliman[1, 2], Charles A. McKenzie, [13]
[1]Biomedical Engineering, University of Western Ontario, London, Ontario, Canada; [2]Robarts Research Institute, Imaging Research Laboratories, London, Ontario, Canada; [3]Medical Biophysics, University of Western Ontario, London, Ontario, Canada

Computer 43 **3660.** **Spectrally-Presaturated Modulation (SPM): An Efficient Fat Suppression Technique for STEAM-Based Cardiac Imaging Sequences**
Ahmed Fahmy[1], El-Sayed H. Ibrahim[2], Nael Osman[3]
[1]Cairo University, Cairo, Egypt; [2]University of Michigan, Ann Arbor, MI, United States; [3]Johns Hopkins University, Baltimore, MD, United States

Computer 44 **3661.** **T1 Corrected Fat Quantification Using a Dual Flip Angle Acquisition and Joint Fit Reconstruction**
Xiaoke Wang[1], Diego Hernando[2], Scott B. Reeder[2, 3]
[1]Biomedical Engineering, University of Wisconsin, Madison, WI, United States; [2]Radiology, University of Wisconsin, Madison, WI, United States; [3]Medical Physics, University of Wisconsin, Madison, WI, United States

Computer 45 **3662.** **Self-Navigated 3D Whole Heart Coronary MRI with VARPRO Fat-Water Separation**
Davide Piccini[1, 2], Peter Kellman[3], Diego Hernando[4], Simone Coppo[2], Gabriele Bonanno[2], Matthias Stuber[2]
[1]Advanced Clinical Imaging Technology, Siemens Healthcare, Lausanne, Switzerland; [2]Department of Radiology, University Hospital (CHUV) and University of Lausanne (UNIL) / Center for Biomedical Imaging (CIBM), Lausanne, Switzerland; [3]Laboratory of Cardiac Energetics, National Institutes of Health/NHLBI, Bethesda, MD, United States; [4]Department of Radiology, University of Wisconsin-Madison, Madison, WI, United States

Computer 46 **3663.** **Thermal Noise Propagation in Water-Fat Imaging and Fat Fraction Measurement**
Weiyi Chen[1], Krishna S. Nayak[1]
[1]Electrical Engineering, University of Southern California, Los Angeles, CA, United States

Computer 47 **3664.** **Rapid Isotropic Shoulder MRI Using 3D SPACE with Incoherent Undersampling and Iterative Reconstruction**
Esther Raithel[1], Gaurav Thawait[2], Shadpour Demehri[2], Shivani Ahlawat[2], Heiko Meyer[1], Wesley Gilson[3], Jan Fritz[2]
[1]Healthcare Sector, Siemens AG, Erlangen, Bavaria, Germany; [2]Russell H. Morgan Department of Radiology and Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [3]Siemens Healthcare USA, Baltimore, MD, United States

Computer 48 **3665. Triglyceride Content and Fatty Acid Composition in Mice: Quantification with 7.0T MRI**
Benjamin Leporq[1], Simon Auguste Lambert[1, 2], Francois Cauchy[1, 3], Imane Boucenna[4], Pierre Colinart[4], Maxime Ronot[1, 5], Valerie Vilgrain[1, 5], Valerie Paradis[1, 6], Bernard Edgar Van Beers[1, 5]
[1]Center of research on inflammation, Paris 7 University; INSERM U1044, Paris, France; [2]BHF Centre of Excellence, Division of Imaging Sciences and Biomedical Engineering, King's College London King's Health Partners, St. Thomas' Hospital, London, United Kingdom; [3]Department of HPB and liver transplantation, Beaujon University hospital Paris Nord , Clichy, France; [4]Matière et systèmes complexes, Paris 7 University; CNRS UMR 7057, Paris, France; [5]Department of Radiology, Beaujon University hospital Paris Nord, Clichy, France; [6]Department of Pathology, Beaujon University hospital Paris Nord, Clichy, France

Electronic Poster
Motion Correction

Exhibition Hall Tuesday 13:30-14:30

Computer 49 **3666. Reverse Retrospective Motion Correction**
Benjamin Zahneisen[1], Aditya Singh[2], Michael Herbst[2], Thomas Ernst[2]
[1]Stanford University, Stanford, CA, United States; [2]University of Hawaii, HI, United States

Computer 50 **3667. Non Rigid-Body Motion Detection Using Single 6-DOF Data from Skin Based Markers for Brain Imaging**
Aditya Singh[1], Brian Keating[1], Benjamin Zahneisen[1], Michael Herbst[1], Thomas Ernst[1]
[1]John A. Burns School of Medicine, University of Hawaii, Honolulu, HI, United States

Computer 51 **3668. Evaluation of TrackDOTS Potential to Perform Motion Tracking and Dynamic Shimming**
José P. Marques[1], Daniel Gallichan[1]
[1]CIBM, EPFL, Lausanne, Vaud, Switzerland

Computer 52 **3669. Camera Placement for Optical Prospective Motion Correction: Mechanical Tolerance Analysis**
Julian Maclaren[1], Murat Aksoy[1], Benjamin Zahneisen[1], Roland Bammer[1]
[1]Department of Radiology, Stanford University, Stanford, CA, United States

Computer 53 **3670. Tracking Motion and Resulting Field Fluctuations Using ^{19}F NMR Field Probes**
Martin Eschelbach[1], Yu-Chun Chang[1], Jonas Handwerker[2], Jens Anders[2], Anke Henning[1, 3], Klaus Scheffler[1]
[1]High-Field Magnetic Resonance Center, Max Planck Institute for Biological Cybernetics, Tuebingen, BW, Germany; [2]Institute of Microelectronics, University of Ulm, Ulm, BW, Germany; [3]Institute for Biomedical Engineering, ETH Zürich, Zurich, Switzerland

Computer 54 **3671. Motion Estimation from Noise Intrinsic Correlation Between RF Channels (MECHANICS)**
Enhao Gong[1], Qiyuan Tian[1], Jennifer A. McNab[2], John Pauly[1]
[1]Electrical Engineering, STANFORD UNIVERSITY, Stanford, CA, United States; [2]Radiology, STANFORD UNIVERSITY, Stanford, CA, United States

Computer 55 **3672. Optimizing a Highly-Accelerated FatNav for High-Resolution Motion-Correction**
Daniel Gallichan[1], José P. Marques[2], Rolf Gruetter[1, 3]
[1]CIBM, EPFL, Lausanne, Vaud, Switzerland; [2]Dept. of Radiology, University of Lausanne, Vaud, Switzerland; [3]Depts. of Radiology, Universities of Lausanne and Geneva, Vaud, Switzerland

Computer 56 **3673. Quantitative Framework for Prospective Motion Correction Evaluation**
Nicolas Pannetier[1, 2], Theano Stavrinos[2], Peter Ng[2], Michael Herbst[3, 4], Maxim Zaitsev[4], Karl Young[1], Gerald Matson, [12], Norbert Schuff[1, 2]
[1]Radiology, UCSF, San Francisco, CA, United States; [2]VAMC, San Francisco, CA, United States; [3]Radiology, JABSOM, Honolulu, HI, United States; [4]Radiology, University Medical Center Freiburg, Freiburg, Germany

Computer 57 **3674. Motion Navigation Using Non-Linear Gradient Fields**
Emre Kopanoglu[1], Gigi Galiana[1], Robert Todd Constable[1]
[1]Diagnostic Radiology, Yale University, New Haven, CT, United States

Computer 58 **3675.** **Removal of EPI Ghosts in the Presence of Prospective Motion Correction**
Murat Aksoy[1], Julian Maclaren[1], Eric Peterson[1], Roland Bammer[1]
[1]Radiology, Stanford University, Stanford, CA, United States

Computer 59 **3676.** **Simultaneous MPRAGE and Non-Contrast MRA with Prospective Motion Correction Using Volumetric Navigators**
John W. Grinstead[1], Himanshu Bhat[2], M. Dylan Tisdall[3], Andre van der Kouwe[3], William Rooney[4], Gerhard Laub[2]
[1]Siemens Healthcare, Portland, USA, United States; [2]Siemens Healthcare, USA, United States; [3]A.A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, MA, United States; [4]Advanced Imaging Research Center, Oregon Health & Science University, Portland, OR, United States

Computer 60 **3677.** **A Novel Profile/View Ordering (NINJA-STAR) for High-Resolution 3D Volumetric T1 Mapping**
Sui-Cheng Wang[1, 2], Amit R. Patel[2], Akiko Tanaka[3], Hui Wang[4], Xiang Zhu[5], Dianwen Zhang[6], Takeyoshi Ota[3], Roberto M. Lang[2], Keigo Kawaji[2]
[1]Biomedical Engineering, Northwestern University, Evanston, IL, United States; [2]Medicine, Section of Cardiology, The University of Chicago, Chicago, IL, United States; [3]Surgery, The University of Chicago, Chicago, IL, United States; [4]Philips Medical Systems, Cleveland, OH, United States; [5]College of Information and Electrical Engineering, and College of Economics & Management, China Agricultural University, Beijing, China; [6]Imaging Technology group, Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana-Champaign, Urbana, IL, United States

Computer 61 **3678.** **MRI of the Moving TMJ Using Contour Fitting in the Correlation Matrix (CoFi-CoMa)**
Stefan Wundrak[1, 2], Jan Paul[1], Johannes Ulrici[2], Erich Hell[2], Margrit-Ann Geibel[1], Volker Rasche[1]
[1]Ulm University, Ulm, Baden-Württemberg, Germany; [2]Sirona Dental Systems, Bensheim, Hessen, Germany

Computer 62 **3679.** **Estimating Dynamic 3D Abdominal Motion for Radiation Dose Accumulation Mapping Using a PCA-Based Model and 2D Navigators**
Bjorn Stemkens[1], Rob HN Tijssen[1], Baudouin Denis de Senneville[2, 3], Jan JW Lagendijk[1], Cornelis A.T. van den Berg[1]
[1]Department of Radiotherapy, UMC Utrecht, Utrecht, Netherlands; [2]Image Science Institute, UMC Utrecht, Utrecht, Netherlands; [3]IMB, UMR 5251 CNRS/University of Bordeaux, Bordeaux, France

Computer 63 **3680.** **Prospective Respiratory Motion Gating Using a Flexible External Tracking Device**
Robin Simpson[1], Benjamin Knowles[1], Marius Menza[1], Michael Herbst[1, 2], Cris Lovell-Smith[1], Maxim Zaitsev[1], Bernd Jung[3]
[1]Medical Physics, University Medical Centre, Freiburg, Germany; [2]John A. Burns School of Medicine, HI, United States; [3]University Hospital of Bern, Switzerland

Computer 64 **3681.** **Motion Detection Improvement of Pencil Beam Navigator Echo with Gradient Reversal Method**
Yuji Iwadate[1], Kunihiro Miyoshi[2], Masanori Ozaki[2], Hiroyuki Kabasawa[1]
[1]Global MR Applications and Workflow, GE Healthcare Japan, Hino, Tokyo, Japan; [2]MR Engineering, GE Healthcare Japan, Tokyo, Japan

Computer 65 **3682.** **Motion Robust Abdominal Imaging with Complementary Poisson-Disc Sampling and Retrospectively Reduced View-Sharing**
Evan Levine[1, 2], Shreyas Vasanawala[2], Brian Hargreaves[2], Manojkumar Saranathan[2]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Radiology, Stanford University, Stanford, CA, United States

Computer 66 **3683.** **5DMRI of Moving Organs**
Zarko Celicanin[1], Oliver Bieri[1]
[1]Radiological Physics, University of Basel Hospital, Basel, Switzerland

Computer 67 **3684.** **Free-Breathing, Self-Navigated RUFIS Lung Imaging with Motion Compensated Image Reconstruction**
Anne Menini[1], Vladimir Golkov[1, 2], Florian Wiesinger[1]
[1]DIBT, GE Global Research, Garching b. München, Germany; [2]Department of Computer Science, Technical University Munich, Garching b. München, Germany

Computer 68 **3685. Improved Motion Compensated Reconstruction for 3D Abdominal MRI Using a Self-Navigated Non-Rigid Motion Model**
Gastao Cruz[1], David Atkinson[2], Tobias Schaeffter[1], Claudia Prieto[1]
[1]Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom; [2]Centre for Medical Imaging, University College London, London, United Kingdom

Computer 69 **3686. Simple Motion Correction Strategy Reduces Respiratory-Induced Motion Artifacts for K-T Accelerated CMR Perfusion Imaging**
Wei Huang[1], Yang Yang[2], Xiao Chen[2], Michael Salerno[1, 3]
[1]Medicine, University of Virginia, Charlottesville, VA, United States; [2]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [3]Radiology, University of Virginia, Charlottesville, VA, United States

Computer 70 **3687. Cylindrical Labeling Inversion Pulse for Reduction of Cardiac/Pulsatile Motion Artifacts in Contrast-Enhanced Breast/Thoracic MRI**
Masami Yoneyama[1], Masanobu Nakamura[1], Makoto Obara[1], Tomoyuki Okuaki[1], Tetsuo Ogino[1], Yuriko Suzuki[1], Yuriko Ozawa[2], Takashi Tabuchi[2], Satoshi Tatsuno[2], Ryuji Sashi[2], Marc Van Cauteren[1]
[1]Philips Electronics Japan, Tokyo, Japan; [2]Yaesu Clinic, Tokyo, Japan

Computer 71 **3688. A Fast and Novel Groupwise-Non-Rigid Registration Methodology for Freezing Motion in DCE-MRI**
KS Shriram[1], Dattesh D. Shanbhag[2], Sheshadri Thiruvenkadam[2], Venkata Veerendranadh Chebrolu[2], Sandeep N. Gupta[3], Rakesh Mullick[4]
[1]Biomedical Signal Analysis Laboratory, GE Global Research, Bangalore, Karnataka, India; [2]Medical Image Analysis Laboratory, GE Global Research, Bangalore, Karnataka, India; [3]Clinical Systems & Signal Processing, GE Global Research, Niskayuna, NY, United States; [4]Diagnostics & Biomedical Technologies, GE Global Research, Bangalore, Karnataka, India

Computer 72 **3689. Time-Resolved Fetal Cardiac MRI Using Compressed Sensing and Metric Optimized Gating**
Christopher W. Roy[1], Mike Seed[2, 3], Christopher K. Macgowan[1, 3]
[1]Medical Biophysics and Medical Imaging, University of Toronto, Toronto, Ontario, Canada; [2]Labatt Family Heart Centre, Division of Cardiology, Department of Paediatrics, The Hospital for Sick Children, Ontario, Canada; [3]Diagnostic Imaging, The Hospital for Sick Children, Toronto, Ontario, Canada

Electronic Poster
Quantitative & Model-based Image Reconstruction

Exhibition Hall Tuesday 13:30-14:30

Computer 73 **3690. Fast Aortic Input Function Extraction at High Temporal Resolution for DCE-MRI**
Umit Yoruk[1, 2], Manojkumar Saranathan[1], Tao Zhang[1], Brian A. Hargreaves[1], Shreyas S. Vasanawala[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Electrical Engineering, Stanford University, Stanford, CA, United States

Computer 74 **3691. Improving Temporal Resolution in fMRI Using Low-Rank Plus Sparse Matrix Decomposition**
Vimal Singh[1], David Ress[2], Ahmed Tewfik[1]
[1]Electrical Engineering, University of Texas at Austin, Austin, TX, United States; [2]Baylor College of Medicine, Houston, TX, United States

Computer 75 **3692. A Variational Approach for Coil-Sensitivity Estimation for Undersampled Phase-Sensitive Dynamic MRI Reconstruction**
Matthias Schloegl[1], Martin Holler[2], Kristian Bredies[2], Rudolf Stollberger[1]
[1]Institute of Medical Engineering, Graz University of Technology, Graz, Styria, Austria; [2]Department of Mathematics and Scientific Computing, University of Graz, Graz, Styria, Austria

Computer 76 **3693. Real Time Phase Contrast MRI with Radial K-Space Sampling with Golden Angle Ratio and Block Wise Low Rank Constraint**
Hassan Haji-Valizadeh[1], Elwin Bassett[2], Ganesh Adluru[3], Edward DiBella[4], Daniel Kim[4]

[1]Radiology, University of Utah, Salt lake city, UT, United States; [2]University of Utah, UT, United States; [3]Ucair,Radiology, Salt lake city, UT, United States; [4]Ucair,Radiology, UT, United States

Computer 77 **3694. Simultaneous Quantification of Intravascular Blood T_1 and T_2 with Multiple-Readout TRUST (MTRUST)**
Zachary B. Rodgers[1], Felix W. Wehrli[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States

Computer 78 **3695. Compressed Sensing Reconstruction of Prospectively Under-Sampled Cardiac Diffusion Tensor MRI**
Darryl McClymont[1], Irvin Teh[1], Hannah Whittington[1], Jurgen Schneider[1]
[1]University of Oxford, Oxford, Oxfordshire, United Kingdom

Computer 79 **3696. Quantitative ^{19}F MR Molecular Imaging with B_1-Mapping Compensation**
Matthew Goette[1, 2], Shelton Caruthers[1], Gregory Lanza[1], Samuel Wickline[1]
[1]Cardiology, Washington University in St. Louis, St. Louis, MO, United States; [2]Pediatric Radiology, Texas Children's Hospital, Houston, TX, United States

Computer 80 **3697. 19F MRI Quantification Using B1 Correction**
Ina Vernikouskaya[1], Alexander Pochert[2], Volker Rasche[1]
[1]Internal Medicine II, University Hospital of Ulm, Ulm, Baden-Wuerttemberg, Germany; [2]Inorganic Chemistry II, University of Ulm, Ulm, Baden-Wuerttemberg, Germany

Computer 81 **3698. Spline Temporal Basis for Improved Pharmacokinetic Parameter Estimation in SENSE DCE-MRI**
Mai Le[1], Jeffrey A. Fessler[1]
[1]University of Michigan, Ann Arbor, MI, United States

Computer 82 **3699. PRAIRIE: Accelerating MR Parameter Mapping Using Kernel-Based Manifold Learning and Pre-Imaging**
Yihang Zhou[1], Chao Shi[1], Yanhua Wang[1], Jingyuan Lyu[1], Leslie Ying[1, 2]
[1]Department of Electrical Engineering, State University of New York at Buffalo, Buffalo, NY, United States; [2]Department of Biomedical Engineering, State University of New York at Buffalo, Buffalo, NY, United States

Computer 83 **3700. *In Vivo* Pulse Sequence Design for Acceleration of T2 Mapping Using Compressed Sensing with Patch-Based Low-Rank Penalty**
Dongwook Lee[1], Sunghong Park[1], Chuan Huang[2], Eung Yeop Kim[3], Jong Chul Ye[1]
[1]KAIST, Daejeon, Korea; [2]Harvard Medical School, Boston, United States; [3]Department of Radiology, Gachon University Gil Hospital, Incheon, Korea

Computer 84 **3701. Automatic Tissue Decomposition Using Nonnegative Matrix Factorization for Noisy MR Magnitude Images**
Daeun Kim[1], Joong Hee Kim[2], Justin P. Haldar[1]
[1]Department of Electrical Engineering, University of Southern California, Los Angeles, CA, United States; [2]Department of Neurology, Washington University, St. Louis, MO, United States

Computer 85 **3702. Model-Based Compressed Sensing Method Using Weighted Data Consistency Coeffcient**
Jinseong Jang[1], Taejoon Eo[1], Dosik Hwang[1]
[1]Electrical and Electronic Engineering, Yonsei University, Seoul, Korea

Computer 86 **3703. Fast Non-Local Means Reconstruction for Multi-Contrast Compressed Sensing**
Kourosh Jafari-Khouzani[1], Berkin Bilgic[1], Jayashree Kalpathy-Cramer[1], Kawin Setsompop[1]
[1]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States

Computer 87 **3704. A Fast Look-Locker Imaging Technique for Quantitative Tissue Oximetry**
Rohini Vidya Shankar[1], Vikram D. Kodibagkar[1]
[1]Biomedical Engineering, Arizona State University, Tempe, AZ, United States

Computer 88 **3705. The Comprehensive Contrast-Enhanced Neuro Exam**
R. Marc Lebel[1, 2], Yi Guo[3], Yinghua Zhu[3], Sajan Goud Lingala[3], Richard Frayne[2], Linda B. Andersen[2], Jacob Easaw[4], Krishna S. Nayak[3]
[1]GE Healthcare, Calgary, Alberta, Canada; [2]Radiology, University of Calgary, Calgary, Alberta, Canada; [3]Electrical Engineering, University of Southern California, Los Angeles, CA, United States; [4]Oncology, University of Calgary, Calgary, Alberta, Canada

Computer 89 **3706. Direct Parametric Reconstruction from (K, T)-Space Data in Dynamic Contrast Enhanced MRI**
Nikolaos Dikaios[1], Shonit Punwani[2], David Atkinson[2]
[1]Centre of Medical Imaging, UCL, London, United Kingdom; [2]Centre of Medical Imaging, UCL, Greater London, United Kingdom

Computer 90 **3707. Multi-Contrast Reconstruction Using Neural Network for Higher Acceleration**
Kinam Kwon[1], Dongchan Kim[1], Hyunseok Seo[1], Jaejin Cho[1], Hyunwook Park[1]
[1]KAIST, Guseong-dong, Daejeon, Korea

Computer 91 **3708. Multi-Contrast, Parametric and Artifact-Free Images Reconstructed from Gradient-Echo and Spin-Echo (GRASE) Imaging Data Using Projection Onto Convex Sets Based Multiplexed Sensitivity Encoding (POCSMUSE)**
Mei-Lan Chu[1, 2], Hing-Chiu Chang[1], Koichi Oshio[3], Nan-kuei Chen[1]
[1]Brain Imaging and Analysis Center, Duke University Medical Center, Durham, NC, United States; [2]Graduate Institute of Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan; [3]Department of Diagnostic Radiology, Keio University School of Medicine, Japan

Computer 92 **3709. DELTAMap: A Web Enabled Multi-Parameter-Multi-Time-Point Analysis Tool for Imaging Biomarker Discovery**
Chandan Kumar Aladahalli[1], Dattesh D. Shanbhag[2], Venkata Veerendranadh Chebrolu[2], Patrice Hervo[3], Sandeep N. Gupta[4], Rakesh Mullick[5]
[1]Biomedical Signal Analysis Laboratory, GE Global Research, Bangalore, Karnataka, India; [2]Medical Image Analysis Laboratory, GE Global Research, Bangalore, Karnataka, India; [3]GEHC, Buc, France; [4]Clinical Systems and Signal Processing, GE Global Research, Niskayuna, NY, India; [5]Diagnostics & Biomedical Technologies, GE Global Research, Bangalore, Karnataka, India

Computer 93 **3710. A Fast Reconstruction Algorithm for Accelerated Multi-Contrast MRI**
Itthi Chatnuntawech[1], Berkin Bilgic[2], Adrian Martin[1, 3], Kawin Setsompop[2, 4], Elfar Adalsteinsson[1, 5]
[1]MIT, Cambridge, MA, United States; [2]A. A. Martinos Center for Biomedical Imaging, MA, United States; [3]Universidad Rey Juan Carlos, Mostoles, Madrid, Spain; [4]Harvard Medical School, MA, United States; [5]Harvard-MIT Heath Sciences and Technology, MA, United States

Computer 94 **3711. Accelerated MR Parameter Mapping Using Robust Model-Consistency Reconstruction**
Alexey Samsonov[1]
[1]University of Wisconsin, Madison, WI, United States

Computer 95 **3712. Spin TomogrAphy in Time Domain: The MR-STAT Project**
ISMRM MERIT AWARD magna cum laude
Alessandro Sbrizzi[1], Annette van der Toorn[1], Hans Hoogduin[1], Peter R. Luijten[1], Cornelis A. van den Berg[1]
[1]UMC Utrecht, Utrecht, Netherlands

Computer 96 **3713. High Resolution T1 Mapping Within Seconds: Model-Based Reconstruction Without Regularization**
Volkert Roeloffs[1], Xiaoqing Wang[1], Tilman Sumpf[1], Jens Frahm[1]
[1]Biomedizinische NMR Forschungs GmbH, Max Planck Institute for Biophysical Chemistry, Göttingen, Niedersachsen, Germany

Electronic Poster
Artifacts & Correction I

Exhibition Hall Tuesday 14:30-15:30

Computer 1 **3714. Phantom Study for Boundary Artifact Reduction in MREPT**
Sungmin Cho[1], Joonsung Lee[2], Jaewook Shin[1], Min-Oh Kim[1], Dong-Hyun Kim[1]
[1]Yonsei University, SeodaemunGu, Seoul, Korea; [2]Severance Hospital, Seoul, Korea

Computer 2 **3715.** **Eliminating Image Shading in 3D FSE with Hybrid RF**
Moran Wei[1], Weiwei Zhang[1], Yongchuan Lai[1], Bing Wu[1]
[1]GE Healthcare, Beijing, China

Computer 3 **3716.** **Cardiac Susceptibility Bite Mark Artifact: Resolving the Conflict**
Candice A. Bookwalter[1], Samir D. Sharma[1], Scott B. Reeder[1, 2]
[1]Department of Radiology, University of Wisconsin-Madison, Madison, WI, United States; [2]Department of Medical Physics, University of Wisconsin-Madison, Madison, WI, United States

Computer 4 **3717.** **A Noval Method of Correcting Off-Center Errors for Radial Acquisition with Arbitrary Angle.**
Ming Yang[1], Haikun Qi[2], Shuo Zhang[3], Guang Qiang Geng[4], Chen Guang Zhao[4], Huijun Chen[2], Feng Huang[4]
[1]Philips Healthcare , Suzhou, Jiangsu, China; [2]Center for Biomedical Imaging Research, Tsinghua University, Beijing, China; [3]Philips Healthcare, Singapore, Singapore; [4]Philips Healthcare, Suzhou, Jiangsu, China

Computer 5 **3718.** **Designing a Hyperbolic Secant Excitation Pulse to Reduce Signal Dropout in 2D Gradient Echo Imaging at 7T**
Stephen James Wastling[1], Mark Symms[2], Mauro Costagli[3, 4], Laura Biagi[3, 4], Mirco Cosottini[3, 5], Gareth John Barker[1], Michela Tosetti[3, 4]
[1]Department of Neuroimaging, King's College London, London, United Kingdom; [2]GE Healthcare, Pisa, Italy; [3]Imago7, Pisa, Italy; [4]IRCCS Stella Maris, Pisa, Italy; [5]Department of Translational Research and New Technologies in Medicine and Surgery, University of Pisa, Pisa, Italy

Computer 6 **3719.** **Non-Cartesian MR Image Reconstruction with Integrated Gradient Nonlinearity and Off Resonance Correction**
Shengzhen Tao[1], Joshua D. Trzasko[1], Yunhong Shu[1], John Huston III[1], Paul T. Weavers[1], Matt A. Bernstein[1]
[1]Radiology, Mayo Clinic, Rochester, MN, United States

Computer 7 **3720.** **Partial Fourier Homodyne Reconstruction with Non-Iterative, Integrated Gradient Nonlinearity Correction**
Shengzhen Tao[1], Joshua D. Trzasko[1], Paul T. Weavers[1], Yunhong Shu[1], John Huston III[1], Matt A. Bernstein[1]
[1]Radiology, Mayo Clinic, Rochester, MN, United States

Computer 8 **3721.** **Adaptive Averaging of Non-Identical Image Series in the Wavelet Space**
ISMRM MERIT AWARD magna cum laude
Henrik Marschner[1], André Pampel[1], Harald E. Möller[1]
[1]Nuclear Magnetic Resonance, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Sachsen, Germany

Computer 9 **3722.** **Real-Time Concomitant Gradient Field Correction.**
Kevin Perkins[1, 2], Reeve Ingle[2], Juan Santos[2], Galen Reed[2], Ken Johnson[2], William Overall[2]
[1]BYU, Provo, UT, United States; [2]HeartVista, Menlo Park, Ca, United States

Computer 10 **3723.** **Effective Removal of Aliasing Artifacts in Interleaved Diffusion Weighted EPI Using Integrated 2D Nyquist Correction and Multiplexed Sensitivity Encoded Reconstruction**
Hing-Chiu Chang[1], Nan-Kuei Chen[1]
[1]Brain Imaging and Analysis Center, Duke University Medical Center, Durham, NC, United States

Computer 11 **3724.** **A Generic Referenceless Phase Combination (GRPC) Method: Application at High and Ultra-High Fields**
Francesco Santini[1], Carl Ganter[2], Philipp Ehses[3], Klaus Scheffler[3], Oliver Bieri[1]
[1]Radiological Physics, University of Basel Hospital, Basel, Switzerland; [2]Department of Diagnostic Radiology, Klinikum rechts der Isar, Munich, Germany; [3]Max Planck Institute for Biological Cybernetics, Tübingen, Germany

Computer 12 **3725.** **Automatic Identification of Motion in Mulitshot MRI Using Convolutional Neural Networks**
Shayan Guhaniyogi[1], Mei-Lan Chu[1], Nan-Kuei Chen[1]
[1]Brain Imaging and Analysis Center, Duke University, Durham, NC, United States

Computer 13 **3726. An Efficient MR Inhomogeneity Corrector Using Regularized Entropy Minimization**
Bo Zhang[1], Hans Peeters[2], Ad Moerland[2], Helene Langet[1], Niccolo Stefani[3]
[1]Philips Research, Suresnes, France; [2]Philips Healthcare, Netherlands; [3]Philips Healthcare, OH, United States

Computer 14 **3727. A Regularly Structured 3D Printed Grid Phantom for Quantification of MRI Image Distortion**
Maysam Mahmood Jafar[1], Christopher Dean[2], Malcolm J. Birch[1], Marc E. Miquel[1]
[1]Medical Physics, Barts Health NHS Trust, London, United Kingdom; [2]Radiotherapy, Barts Health NHS Trust, London, United Kingdom

Computer 15 **3728. Noise-Compensated Bias Correction of MRI Via a Stochastically Fully-Connected Conditional Random Field Model**
Ameneh Boroomand[1], Mohammad Javad Shafiee, [1], Alexander Wong[1], Farzad Khalvati[2], Paul Fieguth[1], Masoom Haider[3]
[1]System Design Engineering, University of Waterloo, Waterloo, Ontario, Canada; [2]Medical Imaging, University of Toronto, Toronto, Ontario, Canada; [3]Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada

Computer 16 **3729. Combination of Integrated Slice-Specific Dynamic Shimming and Pixel-Wise Unwarping of Residual EPI Distortions**
Alto Stemmer[1], Berthold Kiefer[1]
[1]Healthcare, Siemens AG, Erlangen, Germany

Computer 17 **3730. Reduced Eddy Current Induced Artifact in 7T Single Shot Diffusion Weighted Echo Planar Imaging**
Se-Hong Oh[1], Mark J Lowe[1]
[1]Imaging Institute, Cleveland Clinic Foundation, Cleveland, OH, United States

Computer 18 **3731. Spatio-Temporal Artifact Correction of Multi-Dimensional Spectroscopic Imaging Data**
Brian Burns[1], Neil Wilson[2], M. Albert Thomas[2], [3]
[1]Department of Bioengineering, UCLA, Los Angeles, CA, United States; [2]Medical Physics, IDP, UCLA, Los Angeles, CA, United States; [3]Department of Radiology, UCLA, Los Angeles, CA, United States

Computer 19 **3732. Compressed Sensing Reconstruction with Higher-Order Off-Resonance Correction Using the Cross-Sampling and the Time-Segmented Method**
Daiki Tamada[1], Katsumi Kose[1]
[1]Institute of Applied Physics, University of Tsukuba, Tsukuba, Ibaraki, Japan

Computer 20 **3733. Title: A Fast Algorithm to Correct Excitation Profile in Zero Echo Time (ZTE) Imaging**
ISMRM MERIT AWARD magna cum laude
Cheng Li[1], Jeremy F. Magland[1], Alan C. Seifert[1], Felix W. Wehrli[1]
[1]Laboratory for Structural NMR Imaging, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States

Computer 21 **3734. Regularized Inversion of Metallic Implant Susceptibility from B0 Field Maps**
ISMRM MERIT AWARD magna cum laude
Xinwei Shi[1], Daehyun Yoon[2], Kevin Koch[3], Brian Hargreaves[2]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Radiology, Stanford University, CA, United States; [3]Radiology, Medical College of Wisconsin, WI, United States

Computer 22 **3735. Phantom-Based Iterative Estimation of MRI Gradient Nonlinearity**
Joshua Trzasko[1], Shengzhen Tao[1], Jeffrey Gunter[1], Yunhong Shu[1], John Huston III[1], Matt Bernstein[1]
[1]Mayo Clinic, Rochester, MN, United States

Computer 23 **3736. Gradient Unwarping for Phase Imaging Reconstruction**
Paul Polak[1], Robert Zivadinov[1], [2], Ferdinand Schweser[1], [2]
[1]Department of Neurology, Buffalo Neuroimaging Analysis Center, State University of New York at Buffalo, Buffalo, NY, United States; [2]Molecular and Translational Imaging Center, MRI Center, Clinical and Translational Research Center, Buffalo, NY, United States

Computer 24 **3737.** **Advanced Intrinsic Correction of System Delays for Radial Trajectories**
Martin Krämer[1], Jürgen R. Reichenbach[1]
[1]Medical Physics Group, Institute of Diagnostic and Interventional Radiology, Jena University Hospital - Friedrich Schiller University Jena, Jena, Germany

Electronic Poster
Image Processing & Segmentation

Exhibition Hall Tuesday 14:30-15:30

Computer 25 **3738.** **Whitening of Colored Noise in PROPELLER Using Iterative Regularized PICO Reconstruction**
Jyh-Miin Lin[1], Andrew Patterson[2], Hing-Chiu Chang[3], Tzu-Chao Chuang[4], Hsiao-Wen Chung[5], Jonathan H. Gillard[1], Martin J. Graves[2]
[1]Department of Radiolgoy, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom; [2]Cambridge University Hospitals NHS Foundation Trust, Cambridge, United Kingdom; [3]Brain Imaging and Analysis Center, Duke University Medical Center, NC, United States; [4]Department of Electrical Engineering, National Sun Yat-sen University, Kaohsiung, Taiwan, Taiwan; [5]Department of Electrical Engineering, National Taiwan University, Taiwan, Taiwan

Computer 26 **3739.** **Improved Contrast-To-Noise Levels for MS Lesion Detection on CSF-Suppressed Heavily T_2-Weighted Imaging**
Vanessa Wiggermann[1, 2], Enedino Hernández Torres[2, 3], Anthony Traboulsee, [34], David K.B. Li[2, 4], Alexander Rauscher[2, 3]
[1]Physics and Astronomy, University of British Columbia, Vancouver, BC, Canada; [2]Radiology, University of British Columbia, Vancouver, BC, Canada; [3]UBC MRI Research Centre, Vancouver, BC, Canada; [4]Medicine (Neurology), University of British Columbia, Vancouver, BC, Canada

Computer 27 **3740.** **Cerebral Glioma Grading Using Bayesian Network with Features Extracted from Multi-Modality MRI**
Jisu Hu #[1], Wenbo Wu #[2], Bin Zhu #[2], Huiting Wang[2], Renyuan Liu[2], Xin Zhang[2], Ming Li[2], Yongbo Yang[3], Jing Yan[4], Fengnan Niu[5], Chuanshuai Tian[2], Kun Wang[2], Haiping Yu[2], Weibo Chen[6], Suiren Wan[1], Yu Sun*[1], Bing Zhang*[2]*
[1]The Laboratory for Medical Electronics, School of Biological Sciences and Medical Engineering, Southeast University, Nanjing, China; [2]Department of Radiology, The Affiliated Drum Tower Hospital of Nanjing University Medical School, Nanjing, China; [3]Department of Neurosurgery, The Affiliated Drum Tower Hospital of Nanjing University Medical School, Nanjing, China; [4]Department of Oncology, The Affiliated Drum Tower Hospital of Nanjing University Medical School, Nanjing, China; [5]Department of Pathology, The Affiliated Drum Tower Hospital of Nanjing University Medical School, Nanjing, China; [6]Philips Healthcare, Shanghai, China

Computer 28 **3741.** **Improving the Spatial Resolution and SNR of Rat Brain T2-Weighted MR Images: Application of a Super-Resolution Method**
Eric Van Reeth[1], Michael Sdika[1], Sophie Gaillard[1], Pierre-Hervé Luppi[2], Paul-Antoine Libourel[2], Olivier Beuf[1]
[1]Université de Lyon, CREATIS; CNRS UMR5220; Inserm U1044; INSA-Lyon; Université Lyon 1, Villeurbanne, Rhone, France; [2]Centre de Recherche en Neurosciences de Lyon; Inserm U1028 - CNRS UMR5292, Lyon, Rhone, France

Computer 29 **3742.** **Support Vector Regression Based Denoising for MRI Image**
Di Zhao[1]
[1]The Dorothy M. Davis Heart & Lung Research Institute, The Ohio State University, Columbus, OH, United States

Computer 30 **3743.** **NICePype: A Web-Based Pipeline Manager for Processing Neuroimaging Data Based on Nipype.**
Dirk K. Müller[1], René Küttner[1], Ralf Hannig[1], Thomas Frank[1], Juliane Müller[1], Michael Marxen[1]
[1]Department of Psychiatry and Neuroimaging Center, Technische Universität Dresden, Dresden, 01187, Germany

Computer 31 **3744.** **Challenges of 3D Printing from MRI Data: Our Experience with a Kidney Tumor Model**
Nicole Wake[1, 2], William Huang[3], Todd Pietila[4], Hersh Chandarana[1]
[1]The Center for Advanced Imaging Innovation and Research (CAI2R), Department of Radiology, New York University School of Medicine, New York, United States; [2]The Sackler Institute of Graduate Biomedical Sciences, New York University School of Medicine, New York, United States; [3]Department of Urology, New York University School of Medicine, New York, United States; [4]Materialise USA, Plymouth, MI, United States

Computer 32 **3745.** **Super-Resolved Enhancing and Edge Deghosting for Spatiotemporally Encoded Single-Shot MRI**
Lin Chen[1], Shuhui Cai[1], Congbo Cai[2], Zhong Chen[1]

[1]Department of Electronic Science, Xiamen University, Xiamen, Fujian, China; [2]Department of Communication Engineering, Xiamen University, Xiamen, Fujian, China

Computer 33 **3746.** **A Fast Patch-Based Approach for Pseudo-CT Generation from MRI T1-Weighted Images: A Potential Solution for PET/MR Attenuation Correction**

ISMRM MERIT AWARD magna cum laude

Angel Torrado-Carvajal[1,2], Eduardo Alcain[3], Joaquin L. Herraiz[2,4], Antonio S. Montemayor[3], Juan A. Hernandez-Tamames[1,2], Elfar Adalsteinsson[5,6], Larry L. Wald,[6,7] Norberto Malpica[1,2]
[1]Medical Image Analysis and Biometry Lab, Universidad Rey Juan Carlos, Mostoles, Madrid, Spain; [2]Madrid-MIT M+Vision Consortium, Madrid, Spain; [3]Dept. of Computer Science, Universidad Rey Juan Carlos, Mostoles, Madrid, Spain; [4]Research Laboratory of Electronics, Massachusetts Institute of Technology, Cambridge, MA, United States; [5]Dept. of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA, United States; [6]Harvard-MIT Health Sciences and Technology, Massachusetts Institute of Technology, Cambridge, MA, United States; [7]Martinos Center for Biomedical Imaging, Dept. of Radiology, MGH, Charlestown, MA, United States

Computer 34 **3747.** **THOMAS: Thalamus Optimized Multi-Atlas Segmentation**

Jason Su[1,2], Thomas Tourdias[3], Manojkumar Saranathan[2], Brian K. Rutt[2]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Radiology, Stanford University, Stanford, CA, United States; [3]Neuroradiology, Bordeaux University Hospital, Bordeaux, France

Computer 35 **3748.** **Prostate DWI Co-Registration Via Maximization of Hybrid Statistical Likelihood and Cross-Correlation for Improved ADC and Computed Ultra-High B-Value DWI Calculation**

Daniel S. Cho[1], Farzad Khalvati[2], Alexander Wong[1], David A. Clausi[1], Masoom Haider[2]
[1]Systems Design Engineering, University of Waterloo, Waterloo, Ontario, Canada; [2]University of Toronto, Ontario, Canada

Computer 36 **3749.** **Model the Single-Venule fMRI Signal at the Millisecond Scale**

Yi He[1,2], Kun Zhang[3], Xin Yu[1,2]
[1]Research Group of Translational Neuroimaging and Neural Control, High-Field Magnetic Resonance, Max Planck Institute for Biological Cybernetics, Tuebingen, Baden-Wuerttemberg, Germany; [2]Graduate School of Neural Information Processing, University of Tuebingen, Tuebingen, Baden-Wuerttemberg, Germany; [3]Department of Empirical Inference, Max Planck Institute of Intelligent System, Tuebingen, Germany

Computer 37 **3750.** **Automatic Computation of Normalized Brain Volume on 3D T1-Weighted MRI Scans Without Registration to Standard Space**

Elizabeth Wicks[1], Jason P.C. Chiu[1], Lisa Y.W. Tang[1,2], Kevin Lam[1], Andrew Riddehough[1], David K.B. Li[1,2], Anthony Traboulsee[1], Roger Tam[1,2]
[1]MS/MRI Research Group, Division of Neurology, University of British Columbia, Vancouver, BC, Canada; [2]Dept. of Radiology, University of British Columbia, BC, Canada

Computer 38 **3751.** **An Automatic Classificator Based on Local Fractal Features for the Identification of Cortical Malformations**

Alberto De Luca[1,2], Denis Peruzzo[3], Fabio Triulzi[4], Filippo Arrigoni[3], Alessandra Bertoldo[1]
[1]Department of Information Engineering, University of Padova, Padova, PD, Italy; [2]Department of Neuroimaging, Scientific Institute, IRCCS "Eugenio Medea", Bosisio Parini , LC, Italy; [3]Department of Neuroimaging, Scientific Institute, IRCCS "Eugenio Medea", Bosisio Parini, LC, Italy; [4]Neuroradiology department, Scientific Institute, IRCCS "Cà Granda" - Ospedale Maggiore Policlinico, Milan, MI, Italy

Computer 39 **3752.** **Comparison of ^{3}He MRI and CT Image-Based Ventilation Using Deformable Image Registration**

Bilal A. Tahir[1,2], Helen Marshall[2], Matthew Q. Hatton[1], Jim M. Wild[2], Rob H. Ireland[1,2]
[1]Academic Unit of Clinical Oncology, University of Sheffield, Sheffield, South Yorkshire, United Kingdom; [2]Academic Unit of Academic Radiology, University of Sheffield, Sheffield, South Yorkshire, United Kingdom

Computer 40 **3753.** **Improving T_2^* Mapping Accuracy by Spatially Adaptive Non Local Means Noise Filtering**

Till Huelnhagen[1], Andreas Pohlmann[1], Thoralf Niendorf[1,2]
[1]Berlin Ultrahigh Field Facility (B.U.F.F.), Max-Delbrueck Center for Molecular Medicine (MDC), Berlin, Germany; [2]Experimental and Clinical Research Center, a joint cooperation between the Charite Medical Faculty and the Max-Delbrueck Center, Berlin, Germany

Computer 41 **3754. Accurate Bone Marrow Extraction from T1-W Images and ADC-Maps in Patients with Metastatic Cancer: A Texture-Based Segmentation Approach**

Parmida Moradi Birgani[1, 2], Anahita Fathi Kazerooni[1, 2], Hamidreza Haghighatkhah[3], Pedram Fadavi[4], Mohsen Shojaei Moghaddam[5], Meghdad Ashtiyani[6], Hamidreza Saligheh Rad[1, 2]
[1]Quantitative MR Imaging and Spectroscopy Group, Research Center for Molecular and Cellular Imaging, Tehran University of Medical Sciences, Tehran, Iran; [2]Department of Medical Physics and Biomedical Engineering, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran; [3]Department of Radiology, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran; [4]Radiation Oncology Department, Iran University of Medical Sciences, Tehran, Iran; [5]Imaging Center, Payambaran Hospital, Tehran, Iran; [6]Department of Medical Physics and Biomedical Engineering, School of Medicine, International Campus, Tehran University of Medical Sciences, Tehran, Iran

Computer 42 **3755. Human Thalamic Structure Segmentation with Universal SHape Interpolation Using the Radon Transform (USHIRT)**

Peter Adany[1], In-Young Choi[1, 2], Erica Sherry[1], Phil Lee[1, 3]
[1]Hoglund Brain Imaging Center, University of Kansas Medical Center, Kansas City, KS, United States; [2]Neurology, University of Kansas Medical Center, Kansas City, KS, United States; [3]Molecular and Integrative Physiology, University of Kansas Medical Center, Kansas City, KS, United States

Computer 43 **3756. Image Hessian Based Automatic Cranium Segmentation for Blackbone and Silenz MRI**

Max W.K. Law[1], Jing Yuan[1], Gladys G. Lo[2], Oi Lei Wong[1], Abby Y. Ding[1], Siu Ki Yu[1]
[1]Medical Physics and Research Department, Hong Kong Sanatorium & Hospital, Hong Kong, Hong Kong; [2]Department of Diagnostic and Interventional Radiology, Hong Kong Sanatorium & Hospital, Hong Kong, Hong Kong

Computer 44 **3757. Imiomics: Bringing –omics to Whole Body Imaging: Examples in Cross Sectional Interaction Between Whole-Body MRI and Non-Imaging Data**

Joel Kullberg[1], Lars Johansson[1], Lars Lind[2], Håkan Ahlström[1], Robin Strand[1]
[1]Radiology, Uppsala University, Uppsala, Sweden; [2]Medical Sciences, Uppsala University, Uppsala, Sweden

Computer 45 **3758. Creating 3D Heart Models of Children with Congenital Heart Disease Using Magnetic Resonance Imaging**

Danielle F. Pace[1], Polina Golland[1], David Annese[2], Tal Geva[2, 3], Andrew J. Powell[2, 3], Mehdi H. Moghari[2, 3]
[1]Computer Science and Artificial Intelligence Laboratory, Massachusetts Institute of Technology, Cambridge, MA, United States; [2]Department of Cardiology, Boston Children's Hospital, Boston, MA, United States; [3]Department of Pediatrics, Harvard Medical School, Boston, MA, United States

Computer 46 **3759. Venous Segmentation Using Gaussian Mixture Models and Markov Random Fields**

Phillip G. D. Ward[1, 2], Nicholas J. Ferris[2, 3], Amanda C. L. Ng[2, 4], David G. Barnes[1, 5], David L. Dowe[1], Gary F. Egan[2, 6], Parnesh Raniga[2]
[1]Clayton School of Information Technology, Monash University, Clayton, Victoria, Australia; [2]Monash Biomedical Imaging, Monash University, Clayton, Victoria, Australia; [3]Monash Imaging, Monash Health, Clayton, Victoria, Australia; [4]Department of Anatomy and Neuroscience, The University of Melbourne, Parkville, Victoria, Australia; [5]Monash eResearch Centre, Monash University, Victoria, Australia; [6]School of Psychology and Psychiatry, Monash University, Victoria, Australia

Computer 47 **3760. Consistency of Commonly Applied Vessel Segmentation Methods for Magnetic Resonance Venography**

Phillip G. D. Ward[1, 2], Parnesh Raniga[2], Nicholas J. Ferris[2, 3], Amanda C. L. Ng, [24], David G. Barnes[1, 5], David L. Dowe[1], Elsdon Storey[6], Robyn L. Woods[7], Gary F. Egan[2, 8]
[1]Clayton School of Information Technology, Monash University, Clayton, Victoria, Australia; [2]Monash Biomedical Imaging, Monash University, Clayton, Victoria, Australia; [3]Monash Imaging, Monash Health, Clayton, Victoria, Australia; [4]Department of Anatomy and Neuroscience, The University of Melbourne, Parkville, Victoria, Australia; [5]Monash eResearch Centre, Monash University, Victoria, Australia; [6]Department of Medicine, Monash University, Victoria, Australia; [7]Department of Epidemiology & Preventive Medicine, Monash University, Melbourne, Australia; [8]School of Psychology and Psychiatry, Monash University, Victoria, Australia

Computer 48 **3761. Consistency of Intensity-Based Density Value Assignment for Bone Voxels for MR-Only Simulation in Radiation Therapy Planning**

Michael Helle[1], Nicole Schadewaldt[1], Heinrich Schulz[1], Marloes Frantzen-Steneker[2], Christian Stehning[1], Uulke van der Heide[2], Steffen Renisch[1]
[1]Philips Research, Hamburg, Germany; [2]Department of Radiation Oncology, The Netherlands Cancer Institute, Amsterdam, Netherlands

Electronic Poster
Artifacts & Correction II

Exhibition Hall Tuesday 14:30-15:30

Computer 49 **3762. Improved Spoiling Efficiency in Dynamic RF-Spoiled Imaging by Ghost Phase Modulation and Temporal Filtering**

Jon-Fredrik Nielsen[1], Douglas C. Noll[1]
[1]Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States

Computer 50 **3763. RF Amplifier Nonlinearity Correction for Multiband RF Pulses**

Kangrong Zhu[1], Robert F. Dougherty[2], Matthew J. Middione[3], Hua Wu[2], Greig Scott[1], John M. Pauly[1], Adam B. Kerr[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Center for Cognitive and Neurobiological Imaging, Stanford University, Stanford, CA, United States; [3]Applied Sciences Laboratory West, GE Healthcare, Menlo Park, CA, United States

Computer 51 **3764. Highly Dynamic K_T-Points to Minimize the B_1^+ Inhomogeneity Effects in T_2-Weighted Imaging at 7T**

Florent Eggenschwiler[1], Kieran R. O'Brien[2], Daniel Gallichan[1], Rolf Gruetter[1, 2], Jose P. Marques[3]
[1]Laboratory for Functional and Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Vaud, Switzerland; [2]Department of Radiology, University of Geneva, Geneva, Switzerland; [3]Department of Radiology, University of Lausanne, Lausanne, Vaud, Switzerland

Computer 52 **3765. B1 Correction in SPatiotemporal ENcoding (SPEN) MRI**

Rita Schmidt[1], Jean-Noel Hyacinthe[2], Andrea Capozzi[3], Nikolas Kunz[4], Rolf Gruetter[4, 5], Arnaud Comment[3], Lucio Frydman[1], Mor Mishkovsky[6]
[1]Chemical Physics, Weizmann Institute of Science, Rehovot, Israel; [2]School of health, University of Applied Sciences and Arts Western Switzerland , Geneva, Switzerland; [3]Institute of the Physics of Biological Systems, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; [4]Center of biomedical imaging (CIBM), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; [5]Laboratory of Functional and Metabolic Imaging , Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; [6]Laboratory of Functional and Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland

Computer 53 **3766. Correction of Macroscopic Field Inhomogeneities in 3D Quantitative Gre Imaging Based on Nonlinear Phase Model and SNR Mapping**

Chemseddine Fatnassi[1, 2], Rachid Boucenna[1], Michael Betz[1], Habib Zaidi[3]
[1]Radio-oncology, Hirslanden Lausanne, Lausanne, vaud, Switzerland; [2]Faculty of biology and Medicine, UNIL, Lausanne, vaud, Switzerland; [3]Division of Nuclear Medicine and Molecular Imaging, Geneva University Hospital, Geneva, Switzerland

Computer 54 **3767. B0 Map Reconstruction Via Exploiting Active Shimming Information and Its Application on Distortion Correction for EPI**

Kun Zhou[1], Wei Liu[1], Nan Xiao[1]
[1]Siemens Shenzhen Magnetic Resonance Ltd., Shenzhen, Guangdong, China

Computer 55 **3768. Variable Flip Angle Design for Balanced SSFP Transient State Imaging to Improve HP ^{13}C MRI**

Hong Shang[1, 2], Peder E.Z. Larson[1, 2], Galen Reed[3], Eugene Milshteyn[1, 2], Cornelius von Morze[1], Frank Ong[4], Jeremy W. Gordon[1], Jonathan I. Tamir[4], Daniel B. Vigneron[1]
[1]Radiology and Biomedical Imaging, UCSF, San Francisco, CA, United States; [2]UCSF-UC Berkeley Graduate Program in Bioengineering, San Francisco/Berkeley, CA, United States; [3]HeartVista, Menlo Park, CA, United States; [4]Electrical Engineering and Computer Science, UC Berkeley, Berkeley, CA, United States

Computer 56 **3769. An Optimized Region Growing Algorithm for Phase Correction in MRI**

Jong Bum Son[1], John Hazle[1], Jingfei Ma[1]
[1]Imaging Physics, The University of Texas MD Anderson Cancer Center, Houston, TX, United States

Computer 57 **3770. Dynamic Distortion Correction with Standard Single-Echo EPI: Development of the Method for Multi-Channel Coils at 7T and Accuracy in the Presence of Substantial Motion.**

Barbara Dymerska[1], Benedikt Poser[2], Markus Barth[3], Siegfried Trattnig[1], Simon Daniel Robinson[1]

[1]High Field MR Center, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria; [2]Department of Psychology and Neuroscience, Cognitive Neuroscience, Maastricht University, Maastricht, Netherlands; [3]Centre for Advanced Imaging, The University of Queensland, Brisbane, Australia

Computer 58 **3771. Simulation Techniques for Susceptibility Optimisation of Field Probes**
Wieland A. Worthoff[1], Stefan Schwan[1], Johannes Lindemeyer[1], N. Jon Shah[1, 2]
[1]Institute of Neuroscience and Medicine, Forschungszentrum Jülich GmbH, Jülich, Germany; [2]Faculty of Medicine, Department of Neurology, RWTH Aachen University, JARA, Aachen, Germany

Computer 59 **3772. Single Echo EPI Sequence with Dynamic Distortion Correction: Minimization of Errors Due to Motion and Breathing.**
Barbara Dymerska[1], Benedikt Poser[2], Wolfgang Bogner[1], Eelke Visser[3], Korbinian Eckstein[1], Pedro Cardoso[1], Roland Beisteiner[1, 4], Markus Barth[5], Siegfried Trattnig[1], Simon Daniel Robinson[1]
[1]High Field MR Center, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria; [2]Department of Psychology and Neuroscience, Cognitive Neuroscience, Maastricht University, Maastricht, Netherlands; [3]FMRIB Centre, Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, United Kingdom; [4]Department of Neurology, Medical University of Vienna, Vienna, Austria; [5]Centre for Advanced Imaging, The University of Queensland, Brisbane, Australia

Computer 60 **3773. Physiological Artifact Suppression in Multi-Shot Data Using Covariance-Map-Enhanced Navigator Correction**
Jacco A. de Zwart[1], Peter van Gelderen[1], Jeff H. Duyn[1]
[1]Advanced MRI, LFMI, NINDS, National Institutes of Health, Bethesda, MD, United States

Computer 61 **3774. Suppression of Artifacts in Compressed Sensing Cine MRI**
Shinji Kurokawa[1], Yoshitaka Bito[2], Hisaaki Ochi[1]
[1]Central Research Laboratory, Hitachi, Ltd., Kokubunji-shi, Tokyo, Japan; [2]Hitachi Medical Corporation, Kashiwa-shi, Chiba, Japan

Computer 62 **3775. Artifact Associated with Fat Suppression in Spin-Echo EPI**
Yasha Khatamian[1], J. Jean Chen[1]
[1]Rotman Research Institute, Toronto, Ontario, Canada

Computer 63 **3776. Closed-Form Solution Concomitant Field Correction Method for Echo Planar Imaging on Head-Only Asymmetric Gradient MRI System**
Shengzhen Tao[1], Joshua D. Trzasko[1], Yunhong Shu[1], Paul T. Weavers[1], Seung-Kyun Lee[2], Matt A. Bernstein[1]
[1]Radiology, Mayo Clinic, Rochester, MN, United States; [2]GE Global Research, Niskayuna, NY, United States

Computer 64 **3777. Gibbs-Ringing Artifact Removal Based on Local Subpixel-Shifts**
Elias Kellner[1], Bibek Dhital[1], Valerij G. Kiselev[1], Marco Reisert[1]
[1]Department of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany

Computer 65 **3778. A Hexagonal Spoiler Gradient Scheme Improves the Transition to Steady State in Spoiled Gradient Echo Sequences**
Aaron T. Hess[1], Matthew D. Robson[1]
[1]Oxford Centre for Clinical Magnetic Resonance Research (OCMR), Oxford, Ox, United Kingdom

Computer 66 **3779. FSE Cusp Artifact Removal Using Novel Saturation Method**
Yongchuan Lai[1], Weiwei Zhang[1], Baogui Zhang[1], Bing Wu[1]
[1]GE Healthcare, Beijing, China

Computer 67 **3780. Distortion Correction Using Simulated Point-Spread Functions**
Genevieve M. LaBelle[1], Brad P. Sutton[2, 3]
[1]Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]Bioengineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [3]Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana-Champaign, IL, United States

Computer 68 **3781. Reference-Free Distortion Correction for EPI by Flipped K-Space Segments (DICOFLIP)**
Marco Reisert[1], Michael Herbst[1, 2]
[1]Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]Department of Radiology, John A. Burns School of Medicine, Honolulu, Hawai, United States

Computer 69 **3782. Ghost Correction for EPI at Gradient Insert System**
Guoxiang LIU[1], Takashi UEGUCHI[1]
[1]CiNet, National Institute of Information and Communications Technology, Suita, Osaka, Japan

Computer 70 **3783. 3D Mapping of Geometric Distortion Using Static and Moving Table Acquisitions for Radiotherapy Treatment Planning Applications**
Amy Walker[1, 2], Gary Liney, [12], Lois Holloway, [12], Jason Dowling[3], David Rivest-Henault[3], Peter Metcalfe[1, 2]
[1]Center for Medical Radiation Physics, University of Wollongong, Wollongong, NSW, Australia; [2]Medical Physics, Liverpool and Macarthur Cancer Therapy Centres and Ingham Institute for Applied Medical Research, Liverpool, NSW, Australia; [3]Commonwealth Scientific and Industrial Research Organisation, Australian E-Health Research Centre, Brisbane, Queensland, Australia

Computer 71 **3784. Compensation of Artifacts from Eddy Current and Transient Oscillation in Balanced Steady-State Free Precession**
Hyun-Soo Lee[1], Seung Hong Choi[2], Sung-Hong Park[1]
[1]Department of Bio and Brain Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Korea; [2]Department of Radiology, Seoul National University College of Medicine, Seoul, Korea

Computer 72 **3785. Performance Comparison of Analytical Solutions for BSSFP Signal Demodulation**
Michael N. Hoff[1], Jalal B. Andre[1], Qing-San Xiang[2]
[1]Radiology, University of Washington, Seattle, WA, United States; [2]Physics, University of British Columbia, Vancouver, British Columbia, Canada

Electronic Poster
Reconstruction of Dynamic Data

Exhibition Hall Tuesday 13:30-15:30

Computer 73 **3786. A Parallel Algorithm for Compressed Sensing Dynamic MRI Reconstruction**
Loris Cannelli[1], Paolo Scarponi[1], Gesualdo Scutari[1], Leslie Ying[1]
[1]Electrical Engineering, University at Buffalo, Buffalo, NY, United States

Computer 74 **3787. Reconstruction Strategies for Pure 2D Spatiotemporal MRI**
Albert Jang[1, 2], Alexander Gutierrez[3], Di Xiao[2], Curtis A. Corum[1], Vuk Mandic[4], Jarvis Haupt[2], Michael Garwood[1]
[1]Center for Magnetic Resonance Research and Department of Radiology, University of Minnesota, Minneapolis, MN, United States; [2]Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States; [3]Department of Mathematics, University of Minnesota, Minneapolis, MN, United States; [4]School of Physics and Astronomy, Department of Physics, University of Minnesota, Minneapolis, Minneapolis, MN, United States

Computer 75 **3788. Accelerated Real Time Cardiac CINE Using Kernel PCA Based Spatio-Temporal Denoising**
Muhammad Usman[1], Claudia Prieto[1]
[1]Division of Imaging Sciences and Biomedical Engineering, King's College London, London, United Kingdom

Computer 76 **3789. POCS-Based Reconstruction of Multiplexed Sensitivity Encoded MRI (POCSMUSE): A General Algorithm for Reducing Motion-Related Artifacts**
Mei-Lan Chu[1, 2], Hing-Chiu Chang[1], Hsiao-Wen Chung[2], Trong-Kha Truong[1], Mustafa R. Bashir[3], Nan-kuei Chen[1, 3]
[1]Brain Imaging and Analysis Center, Duke University, Durham, NC, United States; [2]Graduate Institute of Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan; [3]Department of Radiology, Duke University Medical Center, Durham, NC, United States

Computer 77 3790. Application-Specific Compressed Sensing for Improved Spatial and Temporal Resolution of Intracranial CE MRA

Julia V. Velikina[1], Alexey A. Samsonov
[1]Medical Physics, University of Wisconsin - Madison, Madison, WI, United States

Computer 78 3791. Novel Sparse Model and Reconstruction for Dynamic Contrast-Enhanced MRI

Qiu Wang[1], Boris Mailhe[1], Robert Grimm[2], Marcel Dominik Nickel[2], Kai Tobias Block[3], Hersh Chandarana[3], Mariappan S. Nadar[1]
[1]Imaging and Computer Vision, Siemens Corporate Technology, Princeton, NJ, United States; [2]MR Application & Workflow Development, Siemens Healthcare, Erlangen, Germany; [3]Department of Radiology, New York University School of Medicine, New York, NY, United States

Computer 79 3792. Validation of Reduced View-Sharing Compressed Sensing Reconstruction for DCE-MRI with Variable Flip Angle Acquisition

Evan Levine[1, 2], Bruce Daniel[2], Brian Hargreaves[2], Manojkumar Saranathan[2]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Radiology, Stanford University, Stanford, CA, United States

Computer 80 3793. An Application of Compressed Sensing for Improved Temporal Fidelity in DCE Breast MRI

Courtney K. Morrison[1], Roberta M. Strigel, [12], Kang Wang[3], James H. Holmes[3], Alexey Samsonov[2], Frank R. Korosec, [12], Julia Velikina[1]
[1]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States; [2]Radiology, University of Wisconsin-Madison, Madison, WI, United States; [3]Global MR Applications and Workflow, GE Healthcare, Madison, WI, United States

Computer 81 3794. Improved Image Quality of Time Resolved Contrast Enhanced MRA Using Compressed Sensing, Parallel Imaging and Singular Value Threshold

Yijing Wu[1], Kevin M. Johnson[1], Patrick A. Turski[2], Kai Niu[1], YinSheng Li[1], GuangHong Chen[1], Chuck A. Mistretta[1]
[1]Medical Physics, University of Wisconsin, Madison, WI, United States; [2]Radiology, University of Wisconsin, Madison, WI, United States

Computer 82 3795. Adaptive Dynamic MRI Reconstruction Exploiting 3-D Spatiotemporal Non-Local Low Rank and Block-Wise Correlation

Ziyi Wang[1], Sheng Fang[1], Hua Guo[1]
[1]Center for Biomedical Imaging Research, Department of Biomedical Engineering, School of Medicine, Tsinghua University, Beijing, China

Computer 83 3796. Increasing Spatial Resolution of Real-Time Cardiac Cine MRI Using Radial K-Space Undersampling with Golden Angle Ratio and Block-Wise Low Rank Contraint

Elwin Bassett[1, 2], Ganesh Adluru[2], Promporn Suksaranjit[3], Brent D. Wilson[3], Edward VR DiBella[2], Daniel Kim[2]
[1]Physics, University of Utah, Salt Lake City, UT, United States; [2]UCAIR, Radiology, University of Utah, Salt Lake City, UT, United States; [3]Cardiology, Internal Medicine, University of Utah, Salt Lake City, UT, United States

Computer 84 3797. Low Latency Reconstruction of Free-Breathing Real-Time Cardiac Cine with VISTA and SENSE

Samuel T. Ting[1], Rizwan Ahmad[1], Ning Jin[2], Juliana Serafim da Silveira[1], Orlando P. Simonetti[1]
[1]The Ohio State University, Columbus, OH, United States; [2]Siemens Healthcare, Chicago, IL, United States

Computer 85 3798. Comparison of a Multiple Free-Breathing Prescans (MFP) Method of Coil Sensitivity Calibration Against TGRAPPA During Free-Breathing Myocardial First-Pass Perfusion

ISMRM MERIT AWARD magna cum laude

Merlin J. Fair[1, 2], Peter D. Gatehouse[1, 2], Peter Drivas[2], David N. Firmin[1, 2]
[1]NHLI, Imperial College London, London, United Kingdom; [2]NIHR Cardiovascular BRU, Royal Brompton Hospital, London, United Kingdom

Computer 86 3799. Evaluation of the Errors in the Measured Dynamic Contrast Enhancement with TWIST View Sharing Using a Novel Simulation Strategy

Yuan Le[1], Marcel Dominik Nickel[2], Randall Kroeker[3], Christian Geppert[2], Bruce Spottiswoode[3], Chen Lin[1]

[1]Radiology and Imaging Science, Indiana University School of Medicine, Indianapolis, IN, United States; [2]Siemens Healthcare, Erlangen, Bavaria, Germany; [3]Siemens Medical Solutions, NC, United States

Computer 87 **3800. Non-Segmented Free-Breathing Cardiac Imaging Using Low-Rank Matrix Completion with a K-Space Variant Constraint**

Yu Y. Li[1]
[1]Radiology, Imaging Research Center, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States

Computer 88 **3801. Dual Projected Background Nulling Compressed Sensing for Robust Separation of Dynamic Contrast-Enhanced Angiograms**

Suhyung Park[1], Eung Yeop Kim[2], Jaeseok Park[3]
[1]Center for Neuroscience Imaging Research, Institute for Basic Science (IBS), Sungkyunkwan University, Suwon, Gyeong Gi-Do, Korea; [2]Department of Radiology, Gachon University Gil Medical Center, Incheon, Korea; [3]Biomedical Imaging and Engineering Lab., Department of Global Biomedical Engineering, Sungkyunkwan University, Suwon, Gyeong Gi-Do, Korea

Computer 89 **3802. Utilizing 3D Spatiotemporally Encoded Imaging from a Different Perspective**

Jaekyun Ryu[1], Jang-Yeon Park[1]
[1]Biomedical Engineering, IBS Center for Neuroscience Imaging Research, Sungkyunkwan University, Suwon, Gyungki-do, Korea

Computer 90 **3803. Feasibility Test of Non-Iterative Reconstruction for High Spatiotemporal Resolution DCE**

Zhifeng Chen[1], Ming Yang[2], Liyi Kang[3], Ling Xia[3], Feng Liu[4]
[1]Zhejiang University, Hangzhou, Zhejiang, China; [2]Philips Healthcare, Jiangsu, China; [3]Zhejiang University, Zhejiang, China; [4]The University of Queensland, Queensland, Australia

Computer 91 **3804. Highly Accelerated Dynamic Imaging Reconstruction Using Low Rank Matrix Completion and Partial Separability Model**

Jingyuan Lyu[1], Yihang Zhou[1], Ukash Nakarmi[1], Leslie Ying[1, 2]
[1]Department of Electrical Engineering, State University of New York at Buffalo, Buffalo, NY, United States; [2]Department of Biomedical Engineering, State University of New York at Buffalo, Buffalo, NY, United States

Computer 92 **3805. Accelerated Breath-Hold Liver Imaging Using Additional Information from Free-Breathing Acquisitions**

Feiyu Chen[1, 2], Feng Huang[3], Dan Zhu[1], Jia Ning[1], Huijun Chen[1]
[1]Center for Biomedical Imaging Research, School of Medicine, Tsinghua University, Beijing, China; [2]Electrical Engineering, Stanford University, Stanford, CA, United States; [3]Philips Healthcare (Suzhou). Co. Ltd, Jiangsu, China

Computer 93 **3806. Respiratory Phase Compressed Sensing Reconstruction Using Highly Under-Sampled Stack-Of-Stars Radial Acquisition**

Bo Li[1, 2], Cihat Eldeniz[1], Jue Zhang[2, 3], Jing Fang[2, 3], Hongyu An[1]
[1]Biomedical Research Imaging Center, Department of Radiology, School of Medicine, The University of North Carolina at Chapel Hill, Chapel Hill, NC, United States; [2]College of Engineering, Peking University, Beijing, China; [3]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China

Computer 94 **3807. Free Breathing CINE with Low Rank Aided Manifold Smoothness Regularization**

Sunrita Poddar[1], John D. Newell[2], Mathews Jacob[1]
[1]Electrical and Computer Engineering, University of Iowa, Iowa City, IA, United States; [2]Radiology, University of Iowa, IA, United States

Computer 95 **3808. Accelerating Dynamic MRI Via Tensor Subspace Learning**

Morteza Mardani[1], Leslie Ying[2], Georgios B. Giannakis[3]
[1]University of Minnesota, Falcon Heights, MN, United States; [2]Buffalo University, NY, United States; [3]University of Minnesota, Minneapolis, MN, United States

Computer 96 **3809. Improving Low-Rank Plus Sparse Decomposition of Dynamic MRI Using Short Temporal Snippets**

Esben Plenge[1], Tal Shnitzer[1], Michael Elad[1]

[1]Technion - Israel Institute of Technology, Haifa, Israel

Electronic Poster
Cancer: Preclinical Studies of Animal Models

Exhibition Hall Tuesday 16:00-17:00

Computer 1 **3810.** **Radiation Induced Hypoxia in TRAMP Tumor Detected Using BOLD MRI**

Yu-Chun Lin[1], Gigin Lin[1], Chun-Chieh Wang[2], Jiun-Jie Wang[3]
[1]Department of Diagnostic Radiology, Chang Gung Memorial Hospital, Linkou, Taiwan, Taiwan; [2]Department of Radiation Oncology, Chang Gung Memorial Hospital, Linkou, Taiwan; [3]Department of Medical Imaging and Radiological Sciences, Chang Gung University, Yaoyuan, Taiwan

Computer 2 **3811.** **Biomarkers of Aggressive Breast Cancer Revealed by Combining Magnetic Resonance Spectroscopic Imaging and Mass Spectrometric Imaging**

Lu Jiang[1], Kamila Chughtai[2], Tiffany Greenwood[1], Zaver M. Bhujwalla[1], Venu Raman[1], Gert Eijkel[2], Ron Heeren[2], Kristine Glunde[1]
[1]Department of Radiology, Johns Hopkins University School of Medic, BALTIMORE, MD, United States; [2]FOM-Institute AMOLF, Amsterdam, Netherlands

Computer 3 **3812.** ***In Vivo* Lactate T_1 and T_2 Relaxation Times in Preclinical Cancer Models – Absolute Quantification of Tumor Lactate**

Ellen Ackerstaff[1], H. Carl LeKaye[1], Natalia Kruchevsky[1], Kristen L. Zakian[1], Nirilanto Ramamonjisoa[1], Ekaterina Moroz[1], Inna S. Serganova[1], Ronald G. Blasberg[1], Jason A. Koutcher[1]
[1]Memorial Sloan Kettering Cancer Center, New York, NY, United States

Computer 4 **3813.** **Comparison of APT- And NOE-CEST in Rat Glioma at 7 T– Potentials for Tumor Characterization and Detection of Tumor Cell Infiltration**

Mona Salehi Ravesh[1], Monika Huhndorf[2], Amir Moussavi[1], Kristin Koetz[1], Judith Becker[1], Kirsten Hattermann[3], Susann Boretius[1]
[1]Clinic of Radiology and Neuroradiology, Section Biomedical Imaging, Kiel, Schleswig-Holstein, Germany; [2]Department of Radiology and Neuroradiology, Schleswig-Holstein, Germany; [3]Christian-Albrechts-University of Kiel, Anatomical Institute, Schleswig-Holstein, Germany

Computer 5 **3814.** **cPLA2IVA Inhibition in Basal-Like Breast Cancer: Reduced Tumor Growth with Metabolic, Vascular and Gene Expression Changes**

Hanna Maja Tunset[1], Eugene Kim[1], Jana Cebulla[1], Muhammad Riyas Vettukattil[1], Astrid Jullumstrø Feuerherm[2], Berit Johansen[2], Tone Frost Bathen[1], Siver Andreas Moestue[1]
[1]MR Cancer Group, Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway; [2]Avexxin AS, Department of Biology, Norwegian University of Science and Technology, Trondheim, Norway

Computer 6 **3815.** **Spectroscopic Imaging with Hyperpolarized [1-^{13}C]pyruvate Shows an Elevated Lactate/pyruvate Ratio in Contrast Enhancing and Non-Enhancing Brain Tumors of Orthotopic Patient-Derived Xenograft Models of Glioblastoma.**

Richard Mair[1, 2], Alan Wright[1], Kieren Allinson[3], Tiago Rodrigues[1], Colin Watts[2], Kevin Brindle[1]
[1]CRUK Cambridge Institute, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom; [2]Division of Neurosurgery, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom; [3]Department of Pathology, Cambridge University Hospitals NHS Foundation Trust, Cambridgeshire, United Kingdom

Computer 7 **3816.** **Magnetization Transfer Imaging in a Mouse Model of Orthotopic Pancreatic Cancer**

Amir Moussavi[1], Kristin Koetz[1], Sanjay Tiwari[1], Susann Boretius[1]
[1]Section Biomedical Imaging, Department of Radiology and Neuroradiology, Christian-Albrechts-University, Kiel, Germany

Computer 8 **3817.** ***In Vivo* Monitoring of Enzyme Activity in a Transgenic Breast Cancer Model with Hyperpolarized C-13 Metabolic Activity Decomposition MRSI**

Zihan Zhu[1, 2], Peter J. Shin[1, 2], Christine Leon Swisher[3], Peder E.Z. Larson[1, 2], Hsin-Yu Chen[1, 2], Hong Shang[1, 2], Eugene Milshteyn[1, 2], Robert A. Bok[1], Andrei Goga[4], Daniel B. Vigneron[1, 2]

[1]Department of Radiology and Biomedical Imaging, University of California, San Francsico, San Francisco, CA, United States; [2]UC Berkeley-UCSF Graduate Program in Bioengineering, San Francisco, CA, United States; [3]Massachusetts General Hospital and Harvard Medical School, MA, United States; [4]Department of Cell and Tissue Biology, University of California, San Francsico, San Francisco, CA, United States

Computer 9 **3818. Multi-Parametric MpMRI to Characterize Brain and Bone Metastases in Disseminated Breast Cancer**

Natalie Julie Serkova[1], Diana M. Cittelly[1], Kendra M. Huber[1], Carol A. Sartorius[1]
[1]University of Colorado Anschutz Medical Center, Aurora, CO, United States

Computer 10 **3819. Source-Based Nosologic Imaging of Response to Therapy in Pre-Clinical Glioblastoma**

Sandra Ortega-Martorell[1, 2], Ivan Olier[3], Teresa Delgado-Goñi[4], Magdalena Ciezka, [25], Ana Paula Candiota[2, 5], Margarida Julià-Sapé[2, 5], Martí Pumarola, [25], Paulo Lisboa[1], Carles Arús, [25]
[1]Liverpool John Moores University, Liverpool, Merseyside, United Kingdom; [2]Networking Research Center on Bioengineering, Biomaterials and Nanomedicine, CIBER-BBN, Cerdanyola del Vallès, Spain; [3]The University of Manchester, Manchester, United Kingdom; [4]The Institute of Cancer Research, London, United Kingdom; [5]Universitat Autònoma de Barcelona, Cerdanyola del Vallès, Spain

Computer 11 **3820. Evaluation of Metronomic Chemotherapy in a Mouse Model Using DCE-MRI and DWI**

Melanie Freed[1, 2], Kerryanne Winters[1, 2], Jin Zhang[1, 2], Sungheon G. Kim[1, 2]
[1]Center for Advanced Imaging Innovation and Research (CAI2R), Dept. Radiology, NYU School of Medicine, New York, NY, United States; [2]Bernard and Irene Schwartz Center for Biomedical Imaging, Dept. Radiology, NYU School of Medicine, New York, NY, United States

Computer 12 **3821. Molecular MR Imaging of Micrometastasis of Breast Cancer**

Zhuxian Zhou[1], Mohammed Qutaish[1], Zheng Han[1], Rebecca Schur[1], David Wilson[1], Zheng-Rong Lu[1]
[1]Department of Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States

Electronic Poster
Cancer: Clinical & Preclinical Studies on New Contrast Mechanisms

Exhibition Hall Tuesday 16:00-17:00

Computer 13 **3822. MRI-Based Measurement of Tissue O_2**

Scott C. Beeman[1], Ying-Bo Shui[2], John A. Engelbach[1], Joseph J.H. Ackerman[1, 3], Joel R. Garbow[1]
[1]Radiology, Washington University, Saint Louis, MO, United States; [2]Ophthalmology, Washington University, Saint Louis, MO, United States; [3]Chemistry, Washington University, Saint Louis, MO, United States

Computer 14 **3823. *In Vivo* MRI-Based 3-D Printed Molds and Individualized Tissue Sectioning Apparatuses Improve MRI-Histopathologic Co-Registration in Brain Cancer Patients**

Alexander E. Salmon[1], Brian J. Pellatt, Nikolai J. Mickevicius[2], Elizabeth J. Cochran[3], Peter S. LaViolette[4]
[1]Neuroscience, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Pathology, Medical College of Wisconsin, Milwaukee, WI, United States; [4]Radiology, Medical College of Wisconsin, Milwaukee, WI, United States

Computer 15 **3824. Gadolinium-Free Extracellular MR Contrast Agent for Tumor Imaging**

Joris Tchouala Nofiele[1], Inga E. Haedicke[2], Yong Le Zhu[2], Xiao-an Zhang[2], Hai-Ling Margaret Cheng, [13]
[1]Hospital for Sick Children, Toronto, Ontario, Canada; [2]Chemistry, University of Toronto, Toronto, Ontario, Canada; [3]Institute of Biomaterials & Biomedical Engineering, University of Toronto, Toronto, Ontario, Canada

Electronic Poster
Breast Cancer: Technical

Exhibition Hall Tuesday 16:00-17:00

Computer 16 **3825. Monitoring Gas-Induced Haemodynamic Changes in the Breast with BOLD Contrast**

Tess Catherwood[1], Andrew Patterson[1], Martin Graves[1], Reem Bedair[1], Roie Manavaki[1], Mary McLean[2], John Griffiths[2], Fiona Gilbert[1]
[1]Radiology, Cambridge University Hospitals NHS Foundation Trust, Cambridge, Cambridgeshire, United Kingdom; [2]Cancer Research UK Cambridge Institute, Cambridge, Cambridgeshire, United Kingdom

Computer 17 **3826. Quantitative Assessment of Procedure Success in MR-Guided Breast Biopsy Exams**
Xiaofeng Liu[1], E Morris[2], Robert Darrow[1], Ileana Hancu[1]
[1]GE Global Research, Niskayuna, NY, United States; [2]Memorial Sloan Kettering Cancer Center, NY, United States

Computer 18 **3827. Accurate Discrimination of Benign and Malignant Breast Cancer in Suspicious Tumors Based on Semi-Quantitative DCE-MRI Employing Support Vector Machine**
Saeedeh Navaei Lavasani[1, 2], Masoomeh Gity[3], Mahnaz Nabil, [14], Anahita Fathi Kazerooni[1, 2], Hamidreza Saligheh Rad[1, 2]
[1]Quantitative MR Imaging and Spectroscopy Group, Research Center for Molecular and Cellular Imaging, Tehran University of Medical Sciences, Tehran, Iran; [2]Department of Medical Physics and Biomedical Engineering, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran; [3]Department of Radiology, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran; [4]Department of Statistics, Tarbiat Modares University, Tehran, Iran

Computer 19 **3828. Evaluation of Benign and High-Risk, Nonmalignant Breast Lesions, Assessed as False-Positive at Contrast-Enhanced (CE) MRI Using DW Imaging and CE MR Imaging Features**
Sunitha B. Thakur[1], Jung Hun Oh[2], Milans Soledad[2], Harini Veeraraghavan[2], Merlin M. Gnanasigamani[2], Elizabeth J. Sutton[2], Joseph O. Deasy[2], Elizabeth A. Morris[2]
[1]Memorial Sloan Kettering Cancer Center, New York, NY, United States; [2]Memorial Sloan Kettering Cancer Center, NY, United States

Computer 20 **3829. Accurate Segmentation of Breast Lesions Based on Wavelet Kinetics: Comparison with Semi-Quantitative Features**
Saeedeh Navaei Lavasani[1, 2], Masoomeh Gity[3], Anahita Fathi Kazerooni[1, 2], Hamidreza Saligheh Rad[1, 2]
[1]Quantitative MR Imaging and Spectroscopy Group, Research Center for Molecular and Cellular Imaging, Tehran University of Medical Sciences, Tehran, Iran; [2]Department of Medical Physics and Biomedical Engineering, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran; [3]Department of Radiology, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran

Computer 21 **3830. Fast Bilateral Breast Coverage with High Spectral and Spatial Resolution (HiSS) MRI at 3T**
Milica Medved[1], William A. Weiss[1], Hiroyuki Abe[1], Gillian M. Newstead[1], Olufunmilayo I. Olopade[2], Maryellen L. Giger[1], Gregory S. Karczmar[1]
[1]Department of Radiology, University of Chicago, Chicago, IL, United States; [2]Department of Medicine, University of Chicago, Chicago, IL, United States

Computer 22 **3831. Prediction of Neoadjuvant Therapy Response Using Multiparametric MRI at 3T**
Lenka Minarikova[1], Wolfgang Bogner[1], Katja Pinker-Domenig[2], Thomas Helbich[2], Siegfried Trattnig[1], Stephan Gruber[1]
[1]MRCE, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria; [2]Division of Molecular and Gender Imaging, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria

Computer 23 **3832. Fat Suppression Techniques for High Resolution Breast DCE MRI at 7 Tesla: A Qualitative and Quantitative Comparison**
Tijl A. van der Velden[1], Alexander M. Th. Schmitz[1], Kenneth G.A. Gilhuijs[1], Wouter B. Veldhuis[1], Peter R. Luijten[1], Vincent O. Boer[1], Dennis W.J. Klomp[1]
[1]Radiology, University Medical Center Utrecht, Utrecht, Netherlands

Computer 24 **3833. Statistical Assessment of Diffusion Weighted Signal Decay in Breast Cancer Tumors at 3T: Mono-Exponential or Bi-Exponential?**
Jing Yuan[1], Gladys G. Lo[2], Oi Lei Wong[1], Helen H.L. Chan[2], Abby Y. Ding[1], Ting Ting Wong[3], Polly S.Y. Cheung[3]
[1]Medical Physics and Research Department, Hong Kong Sanatorium & Hospital, Happy Valley, Hong Kong, China; [2]Department of Diagnostic & Interventional Radiology, Hong Kong Sanatorium & Hospital, Happy Valley, Hong Kong, China; [3]Breast Care Center, Hong Kong Sanatorium & Hospital, Happy Valley, Hong Kong, China

Electronic Poster
Cancer: Prostate Cancer

Exhibition Hall Tuesday 16:00-17:00

Computer 25 **3834. Impact of Temporal Resolution on Diagnostic Performance of Quantitative DCE-MRI of Prostate Cancer: Evaluation Using a Novel Golden-Angle Radial Compressed-Sensing Sequence and Single Contrast Injection**

ISMRM MERIT AWARD magna cum laude

Nainesh Parikh[1], Justin Ream[2], Tobias Block[3], Weisheng Xu[4], Hersh Chandarana[2], Li Feng[3], Samir Taneja[5], Andrew Rosenkrantz[2]
[1]Radiology, NYU School of Medicine, New York, NY , United States; [2]Radiology, NYU School of Medicine, New York, NY, United States; [3]Radiology, Center for Advanced Imaging Innovation and Research NYU School of Medicine, New York, NY, United States; [4]Pathology, NYU School of Medicine, New York, NY, United States; [5]Urologic Oncology, NYU School of Medicine, New York, NY, United States

Computer 26 **3835. Unsupervised Quality Control of Prostate MRSI Using Non Negative Matrix Factorization**

Nassim Tayari[1], Anca R. Croitor Sava[2], Diana M. Sima[2], Sabine Van Huffel[2], Arend Heerschap[1]
[1]Department of Radiology and Nuclear Medicine, Radboud University Medical Center, Nijmegen, Netherlands; [2]Department of Electrical Engineering, Katholieke Universiteit Leuven, Leuven, Belgium

Computer 27 **3836. Development of Quantitative Multi-Parametric MRI Models for Prostate Cancer Assessment Using Registered Correlative Pathology**

Gregory J. Metzger[1], Chaitanya Kalavagunta[1], Stephen C. Schmechel[2], Patrick J. Bolan[1], Badrinath Konety[3], Benjamin Spilseth[4], Christopher A. Warlick[3], Joseph S. Koopmeiners[5]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States; [2]Department of Pathology, University of Washington, WA, United States; [3]Department of Urologic Surgery, University of Minnesota, Minneapolis, MN, United States; [4]Department of Radiology, University of Minnesota, Minneapolis, MN, United States; [5]Division of Biostatistics, University of Minnesota, Minneapolis, MN, United States

Computer 28 **3837. Computer Aided Quantitative Analysis of T2-Weighted Prostate MR Images**

Kai Zhao[1], Chengyan Wang[2], Juan Hu[1], Xiaodong Zhang[1], Jue Zhang[2], Xiaoying Wang[1]
[1]Department of Radiology, Peking University First Hospital, Beijing, China; [2]College of Engineering, Peking University, Beijing, China

Computer 29 **3838. Intraprostatic Lipid Spectroscopic Imaging of the Prostate Cancer**

Xin Li[1], Jackilen Shannon[1], Mark G. Garzotto[1, 2], Chris Amling[1], William J. Woodward[1], George Thomas[1], Elizabeth Dacey[1, 2], Xiaohua Wang[1, 2], Paige Farris[1], Wesley Stoller[2], Ann Martinez Acevedo[1], Amy Palma[1], Manoj K. Sammi[1], William D. Rooney[1], Fergus V. Coakley[1], Jonathan Q. Purnell[1]
[1]Oregon Health & Science University, Portland, OR, United States; [2]Portland VA Medical Center, Portland, OR, United States

Computer 30 **3839. Zone Specific ADC + DCE-MRI Composite Maps to Aid in the Detection and Evaluation of Prostate Cancer**

Naira Muradyan[1], Osama Elbuluk[2], Baris Turkbey[2], Sandeep Sankineni[2], Maria J. Merino[3], Senthil Periaswamy[1], Marcelino Bernardo[2], Francois Cornud[4], Peter L. Choyke[2]
[1]iCAD, Inc., Nashua, NH, United States; [2]Molecular Imaging Program, NCI, NIH, Bethesda, MD, United States; [3]Laboratory of Pathology, NCI, NIH, Bethesda, MD, United States; [4]Tourville Imaging Centre, Paris, France

Computer 31 **3840. Performance of High B-Value DWI in Identifying High Risk Prostate Cancer Patients**

Francesca Mertan[1, 2], Harsh K. Agarwal, [23], Sandeep Sankineni[2], Marcelino Bernardo[2, 4], Dagane Daar[2, 4], Maria Merino[2], Bradford Wood[2], Peter Pinto[2], Peter L. Choyke[2], Baris Turkbey[2]
[1]Grove City College, Grove City, PA, United States; [2]National Institutes of Health, Bethesda, MD, United States; [3]Philips Research NA, Briarcliff Manor, NY, United States; [4]Leidos Biomedical Research Inc., Frederic National Laboratory for Cancer Research, Frederick, MD, United States

Computer 32 **3841. Hyperpolarized Lactate Production Correlates with Gleason Grade in Patient-Derived Tissues of Prostate Cancer**

Renuka Sriram[1], Mark Van Criekinge[1], Justin DeLos Santos[1], Daniel B. Vigneron[1], Robert Bok[1], Donna Peehl[2], Kayvan Rahimi Keshari[3], John Kurhanewicz[1]
[1]University of California, San Francisco, San Francisco, CA, United States; [2]Stanford University, CA, United States; [3]Memorial Sloan Kettering Cancer Center, NY, United States

Computer 33 **3842. Development of a Screening MRI Protocol for the Detection of Prostate Cancer: Initial Experience**

Shivani Pahwa[1], Robert Abouassaly[2], Yun Jiang[3], Karin Herrmann[4, 5], Raj Paspulati, [56], William Tabayoyong[7], Soham Shah[7], Brian Minnillo[7], Gregory MacLennan[7], Mark Griswold[1, 8], Lee Ponsky, [59], Vikas Gulani, [510]
[1]Radiology, Case Western Reserve University, Cleveland, OH, United States; [2]University Hospitals, OH, United States; [3]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [4]Radiology, University Hospitals, OH, United States; [5]CWRU School of Medicine, OH, United States; [6]UH Case Medical Center, OH, United States; [7]Urology, University Hospitals, OH, United States; [8]Biomedical Engineering, Case Western Reserve University, OH, United States; [9]Urology, UH Case Medical Center, OH, United States; [10]Radiology, UH Case Medical Center, OH, United States

Computer 34 **3843. Small Field-Of-View Single-Shot EPI-DWI of the Prostate: Evaluation of Spatially-Tailored Two-Dimensional Radiofrequency Excitation Pulses**

Daniel Hausmann[1], Nils Rathmann[1], Metin Sertdemir[1], Philipp Riffel[1], Anja Weidner[1], Stephan Kannengiesser[2], John N. Morelli[3], Stefan O. Schoenberg[1], Ulrike I. Attenberger[1]
[1]Institute of Clinical Radiology and Nuclear Medicine, University Medical Center Mannheim, Medical Faculty Mannheim, University of Heidelberg, Germany, Mannheim, Baden-Württemberg, Germany; [2]MR Applications Development, Siemens Healthcare, Erlangen, Germany; [3]Department of Radiology, St. John's Medical Center, Tulsa, OK, United States

Computer 35 **3844. The ADC Ratio of Tumour to Normal Prostate as a Robust Method for Quantifying Diffusion Weighted Imaging of the Prostate**

Tristan Barrett[1], Andrew N. Priest, Edward M. Lawrence[1], Debra Goldman[2], Vincent J. Gnanapragasam[3], Evis Sala[4], Ferdia A. Gallagher[1]
[1]Radiology, Cambridge University Hospitals, Cambridge, Cambridgeshire, United Kingdom; [2]Department of Epidemiology and Biostatistics, Memorial Sloan Kettering Cancer Center, New York, United States; [3]Urology, Cambridge University Hospitals, Cambridge, Cambridgeshire, United Kingdom; [4]Radiology, Memorial Sloan Kettering Cancer Center, New York, United States

Computer 36 **3845. Investigation of Reduced FOV CEST in Probing Prostate Cancer**

Chunmei Li[1], Bing Wu[2], Min Chen[1]
[1]Beijing Hospital, Beijing, China; [2]GE healthcare China, Beijing, Beijing, China

Computer 37 **3846. Prostate Diffusion Distortion Correction with Restriction Spectrum Imaging**

Rebecca Rakow-Penner[1], Nathan White[1], Daniel Margolis[2], J. Kellogg Parsons[3], Natalie Schenker-Ahmed[1], Joshua Kuperman[1], Hauke Bartsch[1], Hyung Choi[2], William Bradley[1], Ahmed Shabaik[4], Jiaoti Huang[5], Michael Liss[6], Leonard Marks[7], Christopher Kane[3], Robert Reiter[7], Steven Raman[2], David Karow[1], Anders Dale[1]
[1]Radiology, University of California San Diego, San Diego, CA, United States; [2]Radiology, University of California Los Angeles, Los Angeles, CA, United States; [3]Urology, University of California San Diego, San Diego, CA, United States; [4]Pathology, University of California San Diego, San Diego, CA, United States; [5]Pathology, University of California Los Angeles, Los Angeles, CA, United States; [6]Urology, University of Texas Health Science Center San Antonio, San Antonio, TX, United States; [7]Urology, University of California Los Angeles, Los Angeles, CA, United States

Computer 38 **3847. Discriminating Low-Grade from High-Grade Peripheral Zone Prostate Cancer by Multiparametric MRI: A Multicenter Study**

Marnix C. Maas[1], Geert J.S. Litjens, [12], Alan J. Wright[3], Masoom A. Haider[4], Katarzyna J. Macura[5], Kirsten M. Selnæs[6], Daniel J.A. Margolis[7], Thomas Helbich[8], Berthold Kiefer[9], Jurgen J. Fütterer[1], Tom W.J. Scheenen[1]
[1]Radiology and Nuclear Medicine, Radboud University Medical Center, Nijmegen, GLD, Netherlands; [2]Pathology, Radboud University Medical Center, Nijmegen, GLD, Netherlands; [3]Cancer Research UK Cambridge Institute, University of Cambridge, Cambridge, United Kingdom; [4]Sunnybrook Health Sciences Center, University of Toronto, Toronto, ON, Canada; [5]Russel H. Morgan Department of Radiology and Radiological Science, Johns Hopkins University, Baltimore, MD, United States; [6]Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway; [7]Radiology, UCLA David Geffen School of Medicine, Los Angeles, CA, United States; [8]Biomedical Imaging and Image-guided Therapy, Medical University Vienna - General Hospital Vienna, Vienna, Austria; [9]Siemens AG Healthcare, Erlangen, Germany

Computer 39 **3848. Quantitative Differentiation of Prostate Cancer from Normal Peripheral Zone Using Magnetic Resonance Fingerprinting (MRF) and Diffusion Mapping**

Chaitra Badve[1], Alice Yu[2], Shivani Pahwa[3], Matthew Rogers[2], Yun Jiang[4], Yiying Liu[5], Mark Schluchter[5], Lee Ponsky[6, 7], Mark Griswold[4], Vikas Gulani, [13]
[1]Radiology, University Hospitals, Cleveland, OH, United States; [2]School of Medicine, Case Western Reserve University, Cleveland, OH, United States; [3]Radiology, Case Western Reserve University, Cleveland, OH, United States; [4]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [5]Biostatistics, Case Western Reserve University, Cleveland, OH, United States; [6]Urology, University Hospitals, Cleveland, OH, United States; [7]Urology, Case Western Reserve University, Cleveland, OH, United States

Computer 40 **3849. Evaluation of the Diagnostic Differentiation of Prostate Cancer from Benign Prostate Hyperplasia Using Intra-Voxel Incoherent Motion MR Imaging**
Meiyu Sun[1], Ailian Liu[1], Ye Li[1], Lihua Chen[1], Qingwei Song[1], Bin Xu[1], Ziheng Zhang[2]
[1]the first affiliated hospital of Dalian Medical University, Dalian, Liaoning, China; [2]GE healthcare China, Beijing, China

Computer 41 **3850. The Role of Multiparametric MRI in Detection of Prostate Cancer in Patients with Total Serum Prostate Specific Antigen Levels of 4-10 Ng/mL: A Prospective Cohort Study**
Rui Wang[1], Juan Hu[1], Yuanyuan Jiang[1], Xiaoying Wang[1]
[1]Radiology, Peking university first hospital, Beijing, China

Computer 42 **3851. Saturation Duration and Power Optimization for APT MRI of Prostate Cancer**
Harsh K. Agarwal[1, 2], Jochen Keupp[3], Marcelino Bernardo[2], Baris Turkbey[2], Peter L. Choyke[2]
[1]Philips Research NA, Briarcliff Manor, NY, United States; [2]National Institutes of Health, Bethesda, MD, United States; [3]Philips Research Laboratories, Hamburg, Germany

Computer 43 **3852. Correlation Between Diameter of Prostate Cancer Foci on Multiparametric Prostate MRI and Whole Mount Histopathology: Stratified by PI-RADS and Gleason Score**
Pooria Khoshnoodi[1], Nelly Tan[1], Daniel J. A. Margolis[1], Wei-Chan Lin[1], Somrach Thamtorawat[1], David Y. Lu[2], Jiaoti Huang[2], Robert E. Reiter[3], Steven S. Raman[1]
[1]Radiology, University of California, Los Angeles, Los Angeles, CA, United States; [2]Pathology, University of California, Los Angeles, Los Angeles, CA, United States; [3]Urology, University of California, Los Angeles, Los Angeles, CA, United States

Computer 44 **3853. Diagnostic Accuracy of NaF PET-MRI in Differentiating Bone Metastases from Benign Bone Lesions in Metastatic Prostate Cancer.**
Taylor Stone[1], Luis Beltran[2]
[1]New York University, New York, NY, United States; [2]New York University, NY, United States

Computer 45 **3854. Combined MR Volumetry and Diffusion Weighted Imaging to Better Predict Clinically Significant Prostate Cancer on MRI/Ultrasound Fused Guided Biopsy?**
Stephanie Nougaret[1], Nicola L. Robertson[1], Evis Sala[1], Hedvik Hricak[1], Behfar Ehdaie[2], Hebert A. Vargas[1]
[1]Radiology department, Memorial Sloan Kettering Cancer Center, New York, NY, United States; [2]Urology department, Memorial Sloan Kettering Cancer Center, New York, NY, United States

Computer 46 **3855. Clinical Application of 3D High Resolution Multi-Shot Diffusion-Weighted MRI in Prostate Cancer Patients Undergoing Active Surveillance Protocol for Low-Risk Prostate Cancer**
Christopher Nguyen[1, 2], Ali-Reza Sharif-Afshar[3], Zhaoyang Fan[1], Sidney Wilson[2], Xiaoming Bi[4], Lucas Payor[5], Rola Saouaf[5], Hyung Kim[3], Debiao Li[1, 2]
[1]Biomedical Imaging Research Institute, Cedars Sinai Medical Center, Los Angeles, CA, United States; [2]Bioengineering, University of California Los Angeles, Los Angeles, CA, United States; [3]Surgery / Urology, Cedars-Sinai Medical Center, Los Angeles, CA, United States; [4]Siemens Healthcare, Los Angeles, CA, United States; [5]Radiology, Cedars-Sinai Medical Center, Los Angeles, CA, United States

Electronic Poster
Tumor Therapy Responses: Preclinical & Clinical (except Brain Tumor)

Exhibition Hall Tuesday 16:00-17:00

Computer 49 **3856. Constrained Multi-Agent Tracer-Kinetic Modeling to Assess Tumor Vascular Changes Induced by DMXAA Treatment**
Igor Jacobs[1], Stefanie Hectors[1], Gustav Strijkers[1, 2], Klaas Nicolay[1], Matthias Schabel[3, 4]
[1]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [2]Biomedical Engineering and Physics, Academic Medical Center, University of Amsterdam, Amsterdam, Netherlands; [3]Advanced Imaging Research Center, Oregon Health and Science University, Portland, OR, United States; [4]Utah Center for Advanced Imaging Research, University of Utah, Salt Lake City, UT, United States

Computer 50 **3857. Micro-Vascular Effects of Photodynamic Therapy in Tumors Evaluated with Dynamic Contrast-Enhanced MRI**
Tom Schreurs[1, 2], Stefanie Hectors[1], Igor Jacobs[1], Holger Grüll[1, 3], Gustav Strijkers[1, 2], Klaas Nicolay[1]
[1]Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [2]Biomedical Engineering and Physics, Academic Medical Center, Amsterdam, Netherlands; [3]Oncology Solutions, Philips Research, Eindhoven, Netherlands

Computer 51 **3858. Multiparametric MRI Analysis for the Evaluation of MR-Guided High Intensity Focused Ultrasound Treatment**
Stefanie Hectors[1], Igor Jacobs[1], Edwin Heijman[2], Jochen Keupp[3], Monique Berben[2], Gustav Strijkers[1, 4], Holger Grüll[1, 2], Klaas Nicolay[1]
[1]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [2]Oncology Solutions, Philips Research Europe, Eindhoven, Netherlands; [3]Tomographic Imaging Systems, Philips Research Europe, Hamburg, Germany; [4]Biomedical Engineering and Physics, Academic Medical Center, University of Amsterdam, Amsterdam, Netherlands

Computer 52 **3859. Prediction of Treatment Response and Tumor Recurrence Using MR Elastography**
Kay Pepin[1], Steven Ansell[2], Richard L. Ehman[3], Kiaran McGee[3]
[1]Graduate School, Mayo Clinic, Rochester, MN, United States; [2]Hematology, Mayo Clinic, MN, United States; [3]Radiology, Mayo Clinic, MN, United States

Computer 53 **3860. Metabolic Imaging of Early Tumor Therapy**
Charles S. Springer[1, 2], Xin Li[3], Mohan L. Jayatilake[4], Martin M. Pike, [23], William D. Rooney[3], Rosalie C. Sears, [25], Wei Huang, [23]
[1]Advanced Imaging Research Center, Oregon Health & Science University, Portland, Or, United States; [2]Knight Cancer Institute, Oregon Health & Science University, Portland, OR, United States; [3]Advanced Imaging Research Center, Oregon Health & Science University, Portland, OR, United States; [4]Radiography and Radiotherapy, University of Peradeniya, Peradeniya, Sri Lanka; [5]Molecular and Medical Genetics, Oregon Health & Science University, Portland, OR, United States

Computer 54 **3861. Immunocytokine Facilitation of Natural Killer Cells Accumulation in Tumors**
Naomi S. Sta Maria[1], Samuel R. Barnes[1], David Colcher[2], Andrew A. Raubitschek[2], Russell E. Jacobs[1]
[1]Biology and Biological Engineering, California Institute of Technology, Pasadena, CA, United States; [2]Cancer Immunotherapeutics & Tumor Immunology, City of Hope, Duarte, CA, United States

Computer 55 **3862. Whole Body MDixon MRI in Multiple Myeloma: Quantitative Derived Parameters Changes Following Chemotherapy**
Arash Latifoltojar[1], Margaret Hall-Craggs[2], Alan Bainbridge[2], Stuart Taylor[1], Kwee Yong[1], Neil Rabin[2], Matthew Benger[2], Liam Watson[2], Michelle Siu[2], Shonit Punwani[1]
[1]University College London, London, United Kingdom; [2]University College London Hospital, London, United Kingdom

Computer 56 **3863. DCE-MRI Kinetic Model and Curve Pattern Analyses for Predicting Response and Survivals in Osteosarcoma Patients**
Junyu Guo[1], Wilburn E. Reddick[1]
[1]Radiological Sciences, St Jude Children's Research Hospital, Memphis, TN, United States

Computer 57 **3864. Predicting Response to Sunitinib Second-Line Therapy in Gastrointestinal Stromal Tumors Using Non-Gaussian Diffusion MRI**
Yi Sui[1, 2], Lei Tang[3], Kejia Cai[2, 4], Shun-Yu Gao[3], Frederick C. Damen[2, 4], Ying-Shi Sun[3], Xiaohong Joe Zhou[2, 5]
[1]Bioengineering, University of Illinois at Chicago, Chicago, IL, United States; [2]Center for MR Research, University of Illinois Hospital & Health Sciences System, Chicago, IL, United States; [3]Radiology, Peking University Cancer Hospital & Institute, Beijing, China; [4]Radiology, University of Illinois Hospital & Health Sciences System, Chicago, IL, United States; [5]Departments of Radiology, Neurosurgery and Bioengineering, University of Illinois Hospital & Health Sciences System, Chicago, IL, United States

Computer 58 **3865. DCE-MRI Assessment of Soft-Tissue Sarcoma Response to Preoperative Therapy**
Wei Huang[1], Megan L. Holtorf[1], Aneela Afzal[1], Yiyi Chen[1], Brooke R. Beckett[1], Christopher W. Ryan[1]
[1]Oregon Health & Science University, Portland, OR, United States

Computer 59 **3866. Feasibility of Performing Weekly Intravoxel Incoherent Motion DW-MRI and Monitoring Anatomical and Functional Changes in Nasopharynx Tumors During Chemoradiation Therapy**
Yonggang Lu[1], Nancy Lee[1], Vaois Hatzoglou[1], Nadeem Riaz[1], Joseph O. Deasy[1], Amita Shukla-Dave[1]
[1]Memorial Sloan-Kettering Cancer Center, NEW YORK, United States

Computer 60 **3867. The Diagnostic Performance of Hybrid FDG-PET/MR Compared to FDG-PET/CT in Adult Lymphoma Patients**
Alexander R. Guimaraes[1, 2], Wendy Atkinson[3], Ephraim Hochberg[4], Jeremy Abramson[5], Onofrio Catalano[2], Bruce R. Rosen[2], Ciprian Catana[2]
[1]Radiology, Oregon Health Sciences University, Portland, OR, United States; [2]Radiology, Martinos Center for Biomedical imaging, Charlestown, MA, United States; [3]Radiology, Martinos Center for Biomedical imaging, Charlesown, MA, United States; [4]Medicine, Massachusetts General Hospital, Boston, MA, United States; [5]Medicine, Massachusetts General Hospital, MA, United States

Computer 61 **3868. Spontaneous R2* Fluctuations for Non-Invasive Detection of Cyclic Hypoxia in Head and Neck Squamous Cell Carcinoma Xenografts**
Rafal Panek[1], Lauren C.J. Baker, Liam Welsh[1], Carol Box, Suzanne A. Eccles, Kate L. Newbold[1], Kevin J. Harrington[1], Maria A. Schmidt[1], Martin O. Leach[1], Simon P. Robinson
[1]Royal Marsden NHS FT and Institute of Cancer Research, Sutton, Surrey, United Kingdom

Computer 62 **3869. Effects of Acquisition Time Variation on DCE-MRI Prediction of Breast Cancer Therapy Response**
Andy J. Kaempf[1], Yiyi Chen[1], Alina Tudorica[1], Stephen Y-C Chui[1], Arpana Naik[1], Karen Y. Oh[1], Nicole Roy[1], Megan L. Troxell[1], Aneela Afzal[1], Megan L. Holtorf[1], Mohan Jayatilake[1], Wei Huang[1]
[1]Oregon Health & Science University, Portland, OR, United States

Computer 63 **3870. Effects of AIF Variations on DCE-MRI Prediction of Breast Cancer Therapy Response**
Aneela Afzal[1], Alina Tudorica[1], Yiyi Chen[1], Stephen Y-C Chui[1], Arpana Naik[1], Megan L. Troxell[1], Kathleen A. Kemmer[1], Karen Y. Oh[1], Nicole Roy[1], Megan L. Holtorf[1], Xin Li[1], Wei Huang[1]
[1]Oregon Health & Science University, Portland, OR, United States

Electronic Poster
Cancer: Other, Original Research

Exhibition Hall Tuesday 16:00-17:00

Computer 64 **3871. Using UTE Images for Bone/air Segmentation: Applications for Radiation Therapy**
Weili Zheng[1], Joshua P. Kim[1], Indrin J. Chetty[1], Carri K. Glide-Hurst[1]
[1]Radiation Oncology, Henry Ford Health System, Detroit, MI, United States

Electronic Poster
Tumor Perfusion & PermeabilityApplications

Exhibition Hall Tuesday 16:00-17:00

Computer 65 **3872. Evaluating Sources of Uncertainty on DCE-MRI Parameter Estimates When Using Different AIFs**
Mihaela Rata[1], Matthew R. Orton[1], Christina Messiou[1], Helen Young[2], Nandita de Souza[1], David J. Collins[1], Martin O. Leach[1]
[1]Radiotherapy and Imaging Department, CR-UK and EPSRC Cancer Imaging Centre, Institute of Cancer Research and Royal Marsden Hospital, Sutton, Surrey, United Kingdom; [2]Early Clinical Development,, AstraZeneca,, Macclesfield, Cheshire, United Kingdom

Computer 66 **3873. Classical and Knowledge-Based Pharmacokinetic Model Selection Techniques in Analysis of Dynamic Contrast Enhanced MRI Studies: Performance and Bias Comparison**
Hassan Bagher-Ebadian[1, 2], Mohammadreza Mohammadian-Behbahani[3, 4], Azimeh Noorizadeh Vahed Dehkordi[3, 5], James R. Ewing, [26], Alireza Kamali-Asl[3], Siamak P. Nejad-Davarani[7], Hamed Moradi[8], Stephen Brown, [29], Brent Griffith[10], Ali S. Arbab[11], Tom Mikkelsen[12], Lisa Scarpace[12], Hamid Soltanian-Zadeh[1, 13]
[1]Radiology and Research Administration, Henry Ford Hospital, Detroit, MI, United States; [2]Physics, Oakland University, Rochester, MI, United States; [3]Nuclear Engineering, Shahid Beheshti University, Tehran, Iran; [4]Nuclear Engineering, Amir-Kabir University of Technology, Tehran, Iran; [5]Nuclear Engineering, Najaf Abad Branch, Islamic Azad University, Isfahan, Iran; [6]Neurology, Henry Ford Hospital, Detroit, MI, United States; [7]Neurology, Henry Ford Hospital, MI, Iran; [8]Nuclear Engineering, Shiraz University, Shiraz, Fars, Iran; [9]Radiation Oncology, Henry Ford Hospital, Detroit, MI, United States; [10]Radiology, Henry Ford Hospital, Detroit, MI,

United States; [11]GRU Cancer Center, Georgia Regents University, Atlanta, GA, United States; [12]Neurosurgery, Henry Ford Hospital, Detroit, MI, United States; [13]CIPCE, School of Electrical and Computer Engineering, University of Tehran, Tehran, Iran

Computer 67 3874. Dynamic Contrast Enhanced Magnetic Resonance Imaging Evaluates Therapeutic Mechanism of Nab-Paclitaxel in Pancreatic Cancer Patient Derived Xenograft Mouse Models.

Hyunki Kim[1], Sharon Samuel[1], Marie Warren[1], Guihua Zhai[1], William Grizzle[1], Denise Oelschlager[1], Pedro Lopez-Casas[2], Manuel Hidalgo[2], Joy Kovar[3], Kurt Zinn[1], Donald Buchsbaum[1]
[1]University of Alabama at Birmingham, Birmingham, AL, United States; [2]Spanish National Cancer Research Center, Madrid, Spain; [3]LI-COR Biosciences, NE, United States

Computer 68 3875. Dynamic Contrast Enhanced MRI Detection of a Central Defect in Clear Cell Renal Cell Carcinoma Correlates with a Tumor Scar and Lower Tumor Proliferation Rate

Yue Zhang[1], Payal Kapur[2, 3], Qing Yuan[1], Ananth Madhuranthakam[1, 4], Ingrid Carvo[5], Sabina Signoretti[5], Ivan Dimitrov[6], Yin Xi[1], Katherine Wicks[1], Jeffrey Cadeddu, [13], Vitaly Margulis[3], James Brugarolas[7, 8], Ivan Pedrosa[1, 4]
[1]Radiology, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Pathology, University of Texas Southwestern Medical Center, Dallas, TX, United States; [3]Urology, University of Texas Southwestern Medical Center, Dallas, TX, United States; [4]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [5]Pathology, Brigham and Women's Hospital, Boston, MA, United States; [6]Philips Medical Systems, Cleveland, OH, United States; [7]Internal Medicine, University of Texas Southwestern Medical Center, Dallas, TX, United States; [8]Developmental Biology, University of Texas Southwestern Medical Center, Dallas, TX, United States

Computer 69 3876. Measurements of Spontaneous R2* Fluctuations for Acute Hypoxia Detection in Head and Neck Cancer

Rafal Panek[1], Liam Welsh[1], Maria A. Schmidt[1], Kate L. Newbold[1], Kee Wong[1], Angela M. Riddell[1], Dow-Mu Koh[1], Alex Dunlop[1], Dualta Mcquaid[1], Shreerang A. Bhide[1], Kevin J. Harrington[2], Christopher M. Nutting[2], Georgina Hopkinson[3], Cheryl Richardson[3], Simon P. Robinson, Martin O. Leach[1]
[1]Royal Marsden NHS FT and Institute of Cancer Research, Sutton, Surrey, United Kingdom; [2]Royal Marsden NHS FT and Institute of Cancer Research, London, United Kingdom; [3]Royal Marsden NHS FT, London, United Kingdom

Electronic Poster
Cancer: Other Cancers

Exhibition Hall Tuesday 16:00-17:00

Computer 70 3877. Evaluation of Renal Masses Using Multiparametric MRI: Correlation with Histopathology

Durgesh Kumar Dwivedi[1, 2], Girdhar Singh Bora[3], Rajeev Kumar[3], Sanjay Sharma[4], Sanjay Thulkar[4], Siddhartha Datta Gupta[5], Naranamangalam Raghunathan Jagannathan[2]
[1]Radiodiagnosis, King George's Medical University, Lucknow, U.P., India; [2]NMR & MRI Facility, All India Institute of Medical Sciences, New Delhi, Delhi, India; [3]Urology, All India Institute of Medical Sciences, New Delhi, Delhi, India; [4]Radiodiagnosis, All India Institute of Medical Sciences, New Delhi, Delhi, India; [5]Pathology, All India Institute of Medical Sciences, New Delhi, Delhi, India

Computer 71 3878. Multi-Parametric Whole Body MRI in Paediatric Lymphoma; a Comparison with Reference Standard PET-CT

Arash Latifoltojar[1], Paul Humphries[2], Stuart Taylor[1], Ananth Shankar[2], Stephen Daw[2], Shonit Punwani[1]
[1]University College London, London, United Kingdom; [2]University College London Hospital, London, United Kingdom

Electronic Poster
Breast Cancer Clinical

Exhibition Hall Tuesday 16:00-17:00

Computer 73 3879. Clinical Evaluation of TWIST DIXON Sequence with Flexible View Sharing for Breast DCE MRI: Can Initial Uptake Phase Provide Accurate Diagnosis

Yuan Le[1], Hal D. Kipfer[1], Shadie S. Majidi[1], Brian Dale[2], Marcel Dominik Nickel[3], Randall Kroeker[2], Elisabeth Weiland[3], Chen Lin[1]
[1]Radiology and Imaging Science, Indiana University School of Medicine, Indianapolis, IN, United States; [2]Siemens Medical Solutions, NC, United States; [3]Siemens Healthcare, Erlangen, Bavaria, Germany

Computer 74 3880. Assessment of the Correlation Between ADC Values and Oncotype DX Score in Estrogen-Receptor Positive, Lymph Node Negative, Breast Cancers

Sunitha B. Thakur[1], Manuela Durando[2], Milans Soledad[3], Elizabeth J. Sutton[2], Dilip Giri[2], Elizabeth A. Morris[2]

[1]Memorial Sloan Kettering Cancer Center, New York, NY, United States; [2]Memorial Sloan Kettering Cancer Center, NY, United States; [3]Memorial Sloan Kettering Cancer Center, New YORK, NY, United States

Computer 75 **3881. Multi-Parametric Longitudinal Study for the Evaluation of Tumor Heterogeneity in Breast Cancer Patients Using Simultaneous MRSI & DWI Techniques**

Naranamangalam R. Jagannathan[1], Khushbu Agarwal[1], Uma Sharma[1], Smriti Hari[2], Vurthaluru Seenu[3], Rajinder Parshad[3]
[1]Department of NMR & MRI Facility, All India Institute of Medical Sciences, New Delhi, Delhi, India; [2]Department of Radiodiagnosis, All India Institute of Medical Sciences, New Delhi, Delhi, India; [3]Department of Surgical Disciplines, All India Institute of Medical Sciences, New Delhi, Delhi, India

Computer 76 **3882. Implementation of Multiparametric Magnetic Resonance Imaging with High-Resolution Dynamic Contrast-Enhanced and Diffusion-Weighted Magnetic Resonance Imaging at 7T Improves the Assessment of Breast Tumors: A Feasibility Study**

Katja Pinker[1], Pascal Baltzer[1], Wolfgang Bogner[2], Doris Leithner[1], Siegfried Trattnig[2], Olgica Zaric[2], Peter Dubsky[3], Rupert Bartsch[4], Zsuzsanna Bago-Horvath[3], Stephan Gruber[2], Michael Weber[1], Thomas H. Helbich[1]
[1]Dept. of Biomedical Imaging and Image-guided Therapy, Division of Molecular and Gender Imaging, Medical University of Vienna, Vienna, Austria; [2]Dept. of Biomedical Imaging and Image-guided Therapy, MR Centre of Excellence, Medical University of Vienna, Vienna, Austria; [3]Dept. of Surgery, Medical University of Vienna, Vienna, Austria; [4]Dept. of Internal Medicine, Division of Oncology, Medical University of Vienna, Vienna, Austria

Computer 77 **3883. Registration of Multiparametic Breast MRI**

Lawrence Kenning[1], Martin Pickles[1], Lindsay Turnbull[1]
[1]Centre for MR Investigations, Hull York Medical School at University of Hull, Hull, United Kingdom

Computer 78 **3884. Multi-Parametric MRI in Evaluating Pre-And Post-Menopausal ER Positive Breast Cancer**

Elizabeth O'Flynn[1], David Collins[1], James D'Arcy[1], Maria Schmidt[1], Nandita deSouza[1]
[1]CRUK Cancer Imaging Centre, The Institute of Cancer Research, Sutton, Surrey, United Kingdom

Computer 79 **3885. Assessment of Pathologic Complete Response of Breast Cancer with Different Molecular Subtypes After Neoadjuvant Chemotherapy with Dynamic Contrast-Enhanced MR Imaging**

Yuan Jiang[1], Naishan Qin[1], Xiaoying Wang[1], Li Guo[1]
[1]Radiology Department, Peking University First Hospital, Beijing, China

Computer 80 **3886. Optimization of Quantitative MRI Background Parenchymal Enhancement Metrics to Predict Breast Cancer Risk**

Cheng-Liang Liu[1], Savannah C. Partridge[1], Diana L. Lam[1], Constance D. Lehman[1], Habib Rahbar[1]
[1]Department of Radiology, University of Washington, Seattle, WA, United States

Computer 81 **3887. Clinical Utility of Sequential DWI in Studying Tumor Margins as an Aid to Breast Conservation Surgery**

Naranamangalam R. Jagannathan[1], Khushbu Agarwal[1], Rani G. Sah[1], Uma Sharma[1], Smriti Hari[2], Vurthaluru Seenu[3], Rajinder Parshad[3]
[1]Department of NMR & MRI Facility, All India Institute of Medical Sciences, New Delhi, Delhi, India; [2]Department of Radiodiagnosis, All India Institute of Medical Sciences, New Delhi, Delhi, India; [3]Department of Surgical Disciplines, All India Institute of Medical Sciences, New Delhi, Delhi, India

Computer 82 **3888. Evaluation of the Efficiency of DTI Anisotropy Indices to Detect Breast Cancer**

Edna Furman-Haran[1], Dov Grobgeld[2], Noam Nissan[2], Myra Feinberg-Shapiro[3], Tania Zehavi[3], Zvi Kaufman[3], Hadassa Degani[2]
[1]Department of Biological Services, The Weizmann Institute of Science, Rehovot, Israel; [2]Department of Biological Regulation, The Weizmann Institute of Science, Rehovot, Israel; [3]Meir Medical Center, Kfar Saba, Israel

Computer 83 **3889. A Preliminary Study of Diffusion Kurtosis Imaging for Assessment of Breast Lesions**

Shiteng Suo[1], Fang Cheng[1], He Wang[2], Jia Hua[1], Jianrong Xu[1]
[1]Department of Radiology, Ren Ji Hospital, School of Medicine, Shanghai Jiao Tong University, Shanghai, China, China; [2]Philips Research Chinia, Shanghai, China, China

Computer 84 3890. Improved Diagnostic Performance of 3T Breast MRI Using Perfusion-Adjusted ADC Values
Niloufar Fozouni[1], Cheng-Liang Liu[1], Habib Rahbar[1], Constance D. Lehman[1], Savannah C. Partridge[1]
[1]Department of Radiology, University of Washington, Seattle, WA, United States

Computer 85 3891. Intravoxel Incoherent Motion MRI May Reveal Microvascular Variation of Fibroglandular Tissues in Breast Cancer
Jing Yuan[1], Gladys G. Lo[2], Oi Lei Wong[1], Helen H.L. Chan[2], Abby Y. Ding[1], Ting Ting Wong[3], Polly S.Y. Cheung[3]
[1]Medical Physics and Research Department, Hong Kong Sanatorium & Hospital, Happy Valley, Hong Kong, China; [2]Department of Diagnostic & Interventional Radiology, Hong Kong Sanatorium & Hospital, Happy Valley, Hong Kong, China; [3]Breast Care Center, Hong Kong Sanatorium & Hospital, Happy Valley, Hong Kong, China

Computer 86 3892. Intralesional Characteristics of Correlated 18-Fluorodeoxyglucose PET and Intravoxel Incoherent Motion Parameters in Locally Advanced Breast Cancer
Jason Ostenson[1], Linda Moy[1], Sungheon G. Kim[1], Amy Melsaether[1], Komal Jhaveri[2], Christian Geppert[3], David Faul[3], Francisco Esteva[2], Sylvia Adams[2], Freya Schnabel[4], Kimberly Jackson[1], Joon Lee[1], Christopher Glielmi[3], Gene Young Cho[1, 5], Thorsten Feiweier[6], Eric E. Sigmund[1]
[1]Department of Radiology, NYU Langone Medical Center, New York, NY, United States; [2]Perlmutter Cancer Center, NYU Langone Medical Center, New York, NY, United States; [3]Siemens Medical Solutions, New York, NY, United States; [4]Department of Surgery, NYU Langone Medical Center, New York, NY, United States; [5]Sackler Institute of Graduate Biomedical Sciences, NYU School of Medicine, New York, NY, United States; [6]Siemens AG, Erlangen, Germany

Computer 87 3893. Initial Results of the Application of a Modified TWIST Sequence with Flexible View Sharing in Breast DCE-MRI
Yuan Le[1], Hal D. Kipfer[1], Marcel Dominik Nickel[2], Randall Kroeker[3], Stephanie P. Holz[1], Elisabeth Weiland[2], Chen Lin[1]
[1]Radiology and Imaging Science, Indiana University School of Medicine, Indianapolis, IN, United States; [2]Siemens Healthcare, Erlangen, Bavaria, Germany; [3]Siemens Medical Solutions, NC, United States

Electronic Poster
Cancer: Others

Exhibition Hall Tuesday 16:00-17:00

Computer 88 3894. 2HG Metabolic Profiling Analysis Based on 13C-NMR Spectroscopy with Stable13C-Labeled Isotope
Hyeon-Man Baek[1, 2], Youngjae Jeon[1], Jooyun Kim[1], Mirim Bang[1]
[1]Center for MR Research, Korea Basic Science Institute, Ochang, Chungbuk, Korea; [2]Department of Bio-Analytical Science, University of Science & Technology, Daejeon, Chungnam, Korea

Computer 89 3895. Evaluation of PET/MR and DWI in Malignant Lymphoma: Initial Results in 17 Patients
Chiara Giraudo[1], Michael Weber[1], Markus Raderer[2], Georgios Karanikas[1], Marius Erik Mayerhoefer[1]
[1]Departments of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria; [2]Internal Medicine I, Medical University of Vienna, Vienna, Austria

Computer 90 3896. Automated Planning of Scan Geometry in Follow-Up Prostate MRI Examinations
Peter Mazurkewitz[1], Daniel Bystrov[1], Peter Koken[1], Torbjoern Vik[1], Julien Sénégas[1]
[1]Philips Research Laboratories, Hamburg, Germany

Computer 91 3897. DCE-MRI of Prostate Cancer: Perfusion Quantification with Tofts Model Vs. Shutter-Speed Model. Initial Experience.
Cecilia Besa[1], Guido Jajamovich[2], Adnan Ali[3], Wei Huang[4], Kenneth Haines[5], Ash Tewari[3], Bachir Taouli
[1]Radiology, Icahn School of Medicine at Mount Sinai, New York, NY, United States; [2]icahn School of Medicine at Mount Sinai, NY, United States; [3]Urology, Icahn School of Medicine at Mount Sinai, NY, United States; [4]Radiology, Oregon Health & Science University, Portland, OR, United States; [5]Pathology, Icahn School of Medicine at Mount Sinai, NY, United States

Computer 92 3898. The Effect of Groupwise Elastic Registration in Discrimination of Benign and Malignant Ovarian Cancers by Pharmacokinetic Parameters

Elaheh Kia[1, 2], Anahita Fathi Kazerooni[1, 2], Saeedeh Navaei Lavasani[1, 2], Alireza Ahmadian[2], Hamidreza Saligheh Rad[1, 2]
[1]Quantitative MR Imaging and Spectroscopy Group, Research Center for Molecular and Cellular Imaging, Tehran University of Medical Sciences, Tehran, Iran; [2]Department of Medical Physics and Biomedical Engineering, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran

Electronic Poster
Preclinical fMRI

Exhibition Hall Tuesday 17:00-18:00

Computer 1 3899. Quantification of Changes in Resting State Connectivity in Monkey SI Cortex Following Spinal Cord Injury

Arabinda Mishra[1], Feng Wang[1], John C. Gore[1], Chen Min Li[1]
[1]Radiology, Vanderbilt University, Nashville, TN, United States

Computer 2 3900. Neurophysiological and Neuroenergetic Basis of Spontaneous BOLD Signal Fluctuations in Resting-State fMRI Connectivity Maps

Peter Herman[1], Basavaraju G. Sanganahalli[1], Daniel Coman[1], Hal Blumenfeld[2], Lihong Jiang[1], Douglas L. Rothman[1, 3], Fahmeed Hyder[1, 3]
[1]Diagnostic Radiology, Yale University, New Haven, CT, United States; [2]Neurobiology, Yale University, New Haven, CT, United States; [3]Biomedical Engineering, Yale University, New Haven, CT, United States

Computer 3 3901. Default Mode Network Abnormality in ADHD Rat Model

Sheng-Min Huang[1], Wei-Cheng Lee[1], Kung-Chu Ho[2], Fu-Nien Wang[1]
[1]Department of Biomedical Engineering & Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan; [2]Nuclear Medicine, Chang Gung Memorial Hospital, Taoyuan, Taiwan

Computer 4 3902. Anesthesia Level Modulate Brain Activity and Connections in Monkey

Zhentao Zuo[1], Xudong Zhao[1], Yifan Miao[2], Shuo Shen[1], Zuxiang Liu[1], Yuanye Ma[1]
[1]Chinese Academy of Sciences, Institute of Biophysics, Beijing, China; [2]State Key lab of Brain and Cognitive Science, Institute of Biophysics, Chinese Academy of Sciences, Beijing, China

Computer 5 3903. Deep Anesthesia Provokes Dissimilar Resting State Connectivities in ADHD Rat Model and Normal Control

Sheng-Min Huang[1], Wei-Cheng Lee[1], Kung-Chu Ho[2], Fu-Nien Wang[1]
[1]Department of Biomedical Engineering & Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan; [2]Nuclear Medicine, Chang Gung Memorial Hospital, Taoyuan, Taiwan

Computer 6 3904. Predicting Dogs' Training Ease and Behavior Using Their Neural Responses to Discriminative Odors

Tuo Shi[1], Oleg Pustovyy[2], Yun Wang[1], Paul Waggoner[3], Ronald Beyers[1], Jessica Fleming[4], Paul Hammond[4], Edward Morrison[2], Thomas S. Denney Jr. [1, 5], Vitaly Vodyanoy[2], Gopikrishna Deshpande[1, 5]
[1]AU MRI Research Center, Dept. of Electrical & Computer Engineering, Auburn University, Auburn, AL, United States; [2]Dept. of Anatomy, Physiology & Pharmacology, Auburn University, Auburn, AL, United States; [3]Canine Detection Research Institute, Auburn University, Auburn, AL, United States; [4]iK9 LLC, Auburn, AL, United States; [5]Dept. of Psychology, Auburn University, Auburn, AL, United States

Computer 7 3905. Auditory Cortex Modulates the Midbrain Response Selectivity to Behaviorally Relevant Sounds

Jevin W. Zhang[1, 2], Patrick P. Gao[1, 2], Shu-Juan Fan[1, 2], Dan H. Sanes[3], Ed X. Wu[1, 2]
[1]Laboratory of Biomedical Imaging and Signal Processing, The University of Hong Kong, Hong Kong, Hong Kong SAR, China; [2]Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, Hong Kong SAR, China; [3]Center for Neural Science, New York University, New York, NY, United States

Computer 8 3906. Deep Brain Stimulation of the Rodent Nucleus Accumbens Recruits Subcortical Limbic Networks

Daniel Albaugh[1, 2], Garret Stuber[3], Yen-Yu Ian Shih[4]
[1]Curriculum in Neurobiology, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States; [2]Biomedical Imaging Research Center, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States; [3]Department of Psychiatry, University

of North Carolina at Chapel Hill, Chapel Hill, NC, United States; [4]BRIC, Department of Neurology, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States

Computer 9 **3907. Auditory and Visual Cortices Differentially Modulate Auditory Responses in the Midbrain**
Patrick P. Gao[1, 2], Jevin W. Zhang[1, 2], Shu-Juan Fan[1, 2], Dan H. Sanes[3], Ed X. Wu[1, 2]
[1]Laboratory of Biomedical Imaging and Signal Processing, The University of Hong Kong, Hong Kong, HKSAR, China; [2]Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, HKSAR, China; [3]Center for Neural Science, New York University, New York, NY, United States

Computer 10 **3908. High Pulse Rate Acoustic Stimulation Reduces fMRI Responses in the Auditory Thalamus and Cortex of Chronic Noise Exposed Rats**
Condon Lau[1], Jevin W. Zhang[2], Ed X. Wu[2]
[1]Department of Physics and Materials Science, City University of Hong Kong, Kowloon, Hong Kong SAR, Hong Kong; [2]Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, Hong Kong SAR, Hong Kong

Computer 11 **3909. Dose-Dependent Effects of Sevoflurane on Temporal Distribution of BOLD Responses to Somatosensory Stimulation in Rats**
Tomokazu Tsurugizawa[1, 2], Yukari Takahashi[1], Akihiko Kitamura, [13], Fusao Kato[1]
[1]Jikei University School of Medicine, Tokyo, Japan; [2]NeuroSpin/CEA, Gif-sur-Yvette, Essone, France; [3]Ajinomoto Co. Inc., Kawasaki, Japan

Computer 12 **3910. 500 Ms Temporal and 750 µm Spatial Inplane Resolution for Whole-Brain fMRI Applications in the Macaque at 7T**
Dávid Z. Balla[1], Rolf Pohmann[1], Shajan G[1], Philipp Ehses[1], Arno Nauerth[2], Thomas Steudel[1], Yusuke Murayama[1], Axel Oeltermann[1], Matthias H. Munk[1], Hellmut Merkle[1], Michael Beyerlein[1], Henry C. Evrard[1], Nikos K. Logothetis[1], Klaus Scheffler[1]
[1]Max Planck Insitute for Biological Cybernetics, Tübingen, Germany; [2]Bruker Biospin GmbH, Ettlingen, Germany

Electronic Poster
fMRI Methods

Exhibition Hall Tuesday 17:00-18:00

Computer 13 **3911. Accelerated Neonatal fMRI Using Multiband EPI**
Anthony N. Price[1, 2], Lucilio Cordero-Grande[1, 2], Shaihan J. Malik[1, 2], Maryam Abaei[1], Tomoki Arichi[1], Emer J. Hughes[1], Daniel Rueckert[3], A. David Edwards[1], Joseph V. Hajnal[1, 2]
[1]Centre for the Developing Brain, King's College London, London, United Kingdom; [2]Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom; [3]Biomedical Image Analysis Group, Imperial College London, London, United Kingdom

Computer 14 **3912. Comparison of Multi-Band Multi-Echo and Multi-Echo at 3T**
Vincent Jansen[1], Rasim Boyacioglu[1], Jenni Schulz[1], David G. Norris[1, 2]
[1]Radboud University, Donders Institute for Brain, Cognition and Behaviour, Nijmegen, Netherlands; [2]University Duisburg-Essen, Erwin L. Hahn Institute for Magnetic Resonance Imaging, Essen, Germany

Computer 15 **3913. Local EPI Distortion Induced by Blue Light Delivery in the Naïve Brain: Implications for Optogenetic fMRI Studies**
Russell W. Chan[1, 2], Alex T.L. Leong, [12], Joe S. Cheng[1, 2], Victor B. Xie[1, 2], Partick P. Gao[1, 2], Aaron Mok[2], Kevin K. Tsia[2], Ed X. Wu[1, 2]
[1]Laboratory of Biomedical Imaging and Signal Processing, The University of Hong Kong, Hong Kong, China; [2]Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, China

Computer 16 **3914. Combined Echo Volumar Imaging (EVI) and Localized Excitation for Motion Insensitive Fetal fMRI**
Rita G. Nunes[1, 2], Giulio Ferrazzi[1], Anthony Price[1], Matthew Fox[1], Christina Malamateniou[1], Mary Rutherford[1], Joseph Hajnal[1, 3]
[1]Centre for the Developing Brain, King's College London, London, United Kingdom; [2]Instituto de Biofisica e Engenharia Biomedica, Universidade de Lisboa, Lisbon, Portugal; [3]Division of Imaging and Sciences and Biomedical Engineerin, King's College London, London, United Kingdom

Computer 17 **3915.** **Whole Brain BOLD Functional MRI in the Presence of Metallic Orthodontic Braces**
Yuankui Wu[1, 2], David Woods[3], Moshe T. Stern[4], Nicholas I.S. Blair[5], Raag D. Airan[6], James J. Pekar[1, 7], Peter C. M. van Zijl[1, 7], Jun Hua[1, 7]
[1]Neurosection, Div. of MRI Research, Dept. of Radiology, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Department of Medical Imaging, Nanfang Hospital, Southern Medical University, Guangzhou, Guangdong, China; [3]Department of Orthodontics and Pediatric Dentistry, University of Maryland School of Dentistry, Baltimore, MD, United States; [4]Department of Orthodontics and Pediatric Dentistry, University of Maryland, Baltimore, MD, United States; [5]Department of Biomedical Engineering, Johns Hopkins University, Baltimore, MD, United States; [6]Div. of Neuroradiology, Dept. of Radiology, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [7]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States

Computer 18 **3916.** **Acceleration of Task-Based fMRI Using K-T FASTER**
Mark Chiew[1], Nadine N. Graedel[1], Stephen M. Smith[1], Karla L. Miller[1]
[1]FMRIB Centre, University of Oxford, Oxford, Oxfordshire, United Kingdom

Computer 19 **3917.** **Demonstration of Recovery of Signal Loss at 7T in Gradient Echo EPI Using Tailored-RF Pulses**
Catarina Rua[1], Stephen James Wastling[2], Mauro Costagli[3], Laura Biagi[4], Mark Roger Symms[5], Alberto del Guerra[1], Mirco Cosottini[1, 3], Michela Tosetti[3, 4], Gareth John Barker[2]
[1]University of Pisa, Pisa, Italy; [2]Neuroimaging, King's College London, London, United Kingdom; [3]IMAGO7 Foundation, Pisa, Italy; [4]IRCCS Stella Maris, Pisa, Italy; [5]GE Healthcare, Pisa, Italy

Computer 20 **3918.** **MR Inverse Imaging at 7T Has Higher Spatial Resolution Than at 3T**
Ying-Hua Chu[1], Alexandre Vignaud[2], Ruo-Ning Sun[1], Christophe Pallier[3], Wen-Jui Kuo[4], Denis Le Bihan[2], Fa-Hsuan Lin[1]
[1]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan; [2]CEA\DSV\I2BM\Neurospin\UNIRS, Gif sur Yvette, France; [3]CEA\DSV\I2BM\Neurospin\UNICOG, Gif sur Yvette, France; [4]Institute of Neuroscience, National Yang Ming University, Taipei, Taiwan

Computer 21 **3919.** **Fast Functional MRI Using Inverse Imaging with Dynamic Off-Resonance Artifacts Correction**
Ruo-Ning Sun[1], Yi-Cheng Hsu[1], Ying-Hua Chu[1], Shang-Yueh Tsai[2], Wen-Jui Kuo[3], Fa-Hsuan Lin[1]
[1]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan; [2]Institute of Applied Physic, National Chengchi University, Taipei, Taiwan; [3]Institute of Neuroscience, National Yang Ming University, Taipei, Taiwan

Computer 22 **3920.** **PEAK-EPI: Feasibility and Benefits of K-T-Undersampled EPI Acquisition and PEAK-GRAPPA Reconstruction in fMRI**
Rebecca Ramb[1], Pierre Levan[1], Jürgen Hennig[1]
[1]Department of Radiology, Medical Physics, University Medical Center, Freiburg, Germany

Computer 23 **3921.** **A Quantitative Analysis of fMRI Induced Phase Changes Using Averaged-BOSS (A-BOSS)**
Mahdi Khajehim[1], Abbas Nasiraei Moghaddam[1, 2], Gholam-Ali Hossein-Zadeh, [23], Thomas Martin[4], Danny JJ Wang[4]
[1]BME, Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran; [2]School of Cognitive Sciences, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran; [3]ECE, University of Tehran, Tehran, Iran; [4]Neurology, UCLA, Los Angeles, CA, United States

Computer 24 **3922.** **Method for Epileptogenic Focus Localization Using BOLD Signal Complexity Analysis**
Vânia Tavares[1], André Santos Ribeiro[1, 2], Carlos Capela[3], Luís Cerqueira[4], Hugo Alexandre Ferreira[1]
[1]Institute of Biophysics and Biomedical Engineering, Faculy of Sciences of the University of Lisbon, Lisboa, Portugal; [2]Centre for Neuropsychopharmacology, Division of Brain Sciences, Department of Medicine, Imperial College London, London, United Kingdom; [3]Department of Neurology, Centro Hospitalar Lisboa Central, Lisbon, Portugal; [4]Department of Neuroradiology, Centro Hospitalar Lisboa Central, Lisbon, Portugal

Computer 25 **3923.** **Fuzzy General Linear Model for Functional Magnetic Resonance Imaging**
Alejandro Veloz[1, 2], Luis Hernandez-Garcia[3], Hector Allende[2], Claudio Moraga[4], Rodrigo Salas[1], Steren Chabert[1]
[1]Biomedical Engineering School, Universidad de Valparaiso, Valparaiso, Chile; [2]Department of Informatics, Universidad Tecnica Federico Santa Maria, Valparaiso, Chile; [3]Functional Magnetic Resonance Imaging Laboratory, University of Michigan, Ann Arbor, MI, United States; [4]European Centre for Soft-Computing, Mieres, Spain

Computer 26 **3924.** **Sodium fMRI Detects Grey and White Matter Activations: Neuronal Firing or Blood Volume Change?**
Frank Riemer[1, 2], Bhavana S. Solanky[1], Xavier Golay[2], Egidio U. D'Angelo[3], Claudia A. M. Wheeler-Kingshott[1]
[1]NMR Research Unit, Department of Neuroinflammation, Queen Square MS Centre, Institute of Neurology, University College London, London, United Kingdom; [2]Department of Brain Repair and Rehabilitation, Queen Square MS Centre, Institute of Neurology, University College London, London, United Kingdom; [3]Brain Connectivity Center, C. Mondino National Neurological Institute, Pavia, Italy

Computer 27 **3925.** **Investigating Somatotopy in SI and SII with High Resolution Multiband fMRI at 7T**
Rosa Sanchez Panchuelo[1], Keren Yang[1], Martin Buehrer[2], Richard Bowtell[1], Susan Francis[1]
[1]University of Nottingham, Nottingham, United Kingdom; [2]Gyrotools, Zurich, Switzerland

Computer 28 **3926.** **The Neural Basis for the Age-Related Positivity Effect in Language Processing**
Sachiko Kiyama[1], Mitsunobu Kunimi[1], Katsuo Tamaoka[2], Rinus Verdonschot[3], Toshiharu Nakai[1]
[1]National Center for Geriatrics and Gerontology, Ohbu, Aichi, Japan; [2]Nagoya University, Nagoya, Aichi, Japan; [3]Osaka University, Osaka, Japan

Computer 29 **3927.** **Investigating Digit Representation and Tactile Attention in SI/SII with a Novel Paradigm**
Rosa Sanchez Panchuelo[1], Keren Yang[1], Martin Buehrer[2], Miles Humberstone[3], Susan Francis[1]
[1]University of Nottingham, Nottingham, United Kingdom; [2]Gyrotools, Zurich, Switzerland; [3]Nottingham University Hospitals Trust , Nottingham, United Kingdom

Computer 30 **3928.** **Improved Detection of Olfactory fMRI BOLD Signal with Through-Plane Phase Precompensated Spectral-Spatial Pulses**
Christopher Thomas Sica[1], Prasanna Karunanayaka[1], Jeff Vesek[2], Jianli Wang[1], Qing X. Yang[1, 3]
[1]Radiology, Penn State College of Medicine, Hershey, PA, United States; [2]Molecular Biology, Penn State College of Medicine, Hershey, PA, United States; [3]Neurosurgery, Penn State College of Medicine, Hershey, PA, United States

Computer 31 **3929.** **A Simple Approach to Reducing Session-Dependent Behavioural Effects in Multi-Session fMRI Studies**
Nicholas G . Dowell[1], Eleanor Denny[1]
[1]Brighton and Sussex Medical School, Falmer, Brighton, United Kingdom

Computer 32 **3930.** **Overlapping Functional Networks Subserving Single-Digit Multiplication**
Joe S. Cheng[1, 2], Iris Y. Zhou[1, 3], Mengye Lyu[1, 3], Ed X. Wu[1, 3]
[1]Laboratory of Biomedical Imaging and Signal Processing, The University of Hong Kong, Hong Kong, China; [2]Department of Electrical and Electronic Engineering, The University of Hong Kong, , Hong Kong, China; [3]Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, China

Electronic Poster
fMRI: Bold Physiology & Multimodal Imaging

Exhibition Hall Tuesday 17:00-18:00

Computer 24 **3931.** **Change of Venous Susceptibility Upon Visual Activation: 3D Multi-Echo GRE Vs. GRE-EPI Functional QSM**
PINAR SENAY ÖZBAY[1, 2], Cristina Rossi[1], Geoffrey Warnock[3], Felix Kuhn[3], Klaas Paul Prüssmann[2], Daniel Nanz[1]
[1]Department of Radiology, University Hospital Zürich, Zürich, Switzerland; [2]Institute of Biomedical Engineering, ETH Zürich, Zürich, Switzerland; [3]Department of Nuclear Medicine, University Hospital Zürich, Zürich, Switzerland

Computer 25 **3932.** **Independent Component Analysis (ICA) of Functional QSM**
PINAR SENAY ÖZBAY[1, 2], Cristina Rossi[1], Geoffrey Warnock[3], Felix Kuhn[3], Burak Akin[4], Klaas Paul Prüssmann[5], Daniel Nanz[1]
[1]Department of Radiology, University Hospital Zürich, Zürich, Switzerland; [2]Institute of Biomedical Engineering, ETH Zürich, Zürich, Switzerland; [3]Department of Nuclear Medicine, University Hospital Zürich, Zürich, Switzerland; [4]Medical Physics, University Medical Center, Freiburg, Germany; [5]Institute of Biomedical Engineering, ETH Zürich, Zürich, Switzerland

Computer 26 **3933.** **Impaired Cerebrovascular in Obese Children with Obstructive Sleep Apnea Compared to Healthy Controls**
ISMRM MERIT AWARD magna cum laude
Junseok Kim[1, 2], Jackie Leung[2], Indra Narang[2], Paula Louise Croal[2], Andrea Kassner, [12]
[1]University of Toronto, Toronto, ON, Canada; [2]Hospital for Sick Children, Toronto, ON, Canada

Computer 27 **3934.** **Stability of Tissue Model Parameters: Using the Full Analytical Solution or the Asymptotic Approximation?**
Sebastian Domsch[1], Sebastian Weingärtner[1], Jascha Zapp[1], Lothar R. Schad[1]
[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Baden-Württemberg, Germany

Computer 28 **3935.** **Separating the Magnitude and Temporal Responses in a BOLD-Based CO2 Hypercapnia Leads to Improved Inter-Session Reliability as Well as Characterization of Hemodynamic Impairment: A Clinical Multi-Cohort Study**
David E. Crane[1], Anoop Ganda[1], David J. Mikulis[2], Sandra E. Black[1], Bradley J. MacIntosh[1]
[1]Sunnybrook Research Institute, Toronto, ON, Canada; [2]Toronto Western Hospital, Toronto, ON, Canada

Computer 29 **3936.** **Regional and State-Dependent Properties of M for High-Field Calibrated fMRI in Rat Brain**
Christina Y. Shu[1], Daniel Coman[2], Basavaraju G. Sanganahalli[2], Helen Wang[2], Christoph Juchem[2], Peter Herman[2], Fahmeed Hyder[1, 2]
[1]Biomedical Engineering, Yale University, New Haven, CT, United States; [2]Diagnostic Radiology, Yale University, CT, United States

Computer 30 **3937.** **Quantitative β Mapping for High-Field Calibrated fMRI in Rat Brain**
Christina Y. Shu[1], Douglas Rothman[1, 2], Basavaraju G. Sanganahalli[3], Daniel Coman[3], Peter Herman[3], Fahmeed Hyder[1, 3]
[1]Biomedical Engineering, Yale University, New Haven, CT, United States; [2]Diagnostic Radiology, Yale University, New Haven,, CT, United States; [3]Diagnostic Radiology, Yale University, New Haven, CT, United States

Computer 31 **3938.** **Imaging Cerebrovascular Reserve Using Combined ASL Blood Flow and BOLD: A Study Using Acetazolamide Challenge in Patients with Chronic Stenosis of Major Arteries**
Deqiang Qiu[1], Junjie Wu[1], Fadi Nahab[2], Seena Dehkharghani[1]
[1]Radiology and Imaging Sciences, Emory University, Atlanta, GA, United States; [2]Neurology, Emory University, GA, United States

Computer 32 **3939.** **Oxygen Saturation Changes During Hyperoxic and Hypercapnic Stimuli Measured by Near Infrared Spectroscopy (NIRS) Cerebral Oximetry**
Hannah Hare[1], Daniel Bulte[1]
[1]FMRIB, University of Oxford, Oxford, Oxfordshire, United Kingdom

Computer 33 **3940.** **High Resolution Cerebral Metabolic Rate of Oxygen (CMRO2) Using Quantitative Susceptibility Mapping (QSM) and an Oxygen Extraction Fraction (OEF) Constraint**
Jingwei Zhang[1, 2], Thanh D. Nguyen[2], Pascal Spincemaille[2], Tian Liu[3], Dong Zhou[2], Ajay Gupta[2], Yi Wang[1, 2]
[1]Biomedical Engineering, Cornell University, New York, United States; [2]Radiology, Weill Cornell Medical College, New York, United States; [3]Medimagemetric, LLC, NY, United States

Computer 34 **3941.** **Towards High-Quality Simultaneous EEG-fMRI Acquisitions at 7 Tesla: Detection and Reduction of EEG Artifacts Due to Head Motion in B0**
João Jorge[1, 2], Frédéric Grouiller[3], Wietske van der Zwaag[4], Rolf Gruetter[1], Patrícia Figueiredo[2]
[1]Laboratory for Functional and Metabolic Imaging, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [2]Department of Bioengineering, Instituto Superior Técnico, Lisbon, Portugal; [3]Biomedical Imaging Research Center, University of Geneva, Geneva, Switzerland; [4]Biomedical Imaging Research Center, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland

Computer 35 **3942.** **Resting-State Alterations in EEG-fMRI Coupling in Adults with Attention-Deficit/hyperactivity Disorder**
Lars Michels[1, 2], Steffen Bollmann[2], Diego Manuel Baur[2], Anthony Schläpfer[3], Maya Schneebeli[3], Carmen Ghisleni[2], Peter Klaver[2, 4], Daniel Brandeis[3, 5], Ruth O'Gorman[2]
[1]Institute of Neuroradiology, University Hospital Zurich, Zurich, Switzerland; [2]Center for MR-Research, University Children's Hospital, Zurich, Switzerland; [3]Department of Child and Adolescent Psychiatry University of Zürich, University of Zurich, Zurich, Switzerland; [4]Institute of Psychology, University of Zurich, Zurich, Switzerland; [5]Department of Child & Adolescent Psychiatry and Psychotherapy, Central Institute of Mental Health Ma, Medical Faculty Mannheim / Heidelberg University, Mannheim, Germany

Computer 36 **3943.** **Removing the Gradient Artefact Caused by 3D EPI in Simultaneous EEG-fMRI Experiments Using a Gradient Model Fit.**
Muhammad E H Chowdhury[1], Karen J. Mullinger[1, 2], Glyn S. Spencer[1], Richard Bowtell[1]
[1]SPMIC, School of Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom; [2]BUIC, School of Psychology, University of Birmingham , Birmingham, United Kingdom

Computer 37 **3944.** **Do fMRI Resting State Networks Have True High Frequency Electrical Correlates of Neural Dynamics?**
Yun Wang[1], Gopikrishna Deshpande[1, 2]
[1]AU MRI Research Center, Department of Electrical & Computer Engineering, Auburn University, Auburn, AL, United States; [2] Department of Psychology, Auburn University, Auburn, AL, United States

Computer 38 **3945.** **Ballistocardiogram Artefact Correction Taking Into Account Background Physiological Signal Preservation in Simultaneous EEG-fMRI**
Rodolfo Abreu[1], Marco Leite[1, 2], Alberto Leal[3], Patrícia Figueiredo[1]
[1]Institute for Systems and Robotics and Department of Bioengineering, Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal; [2]Department of Clinical and Experimental Epilepsy and The Wellcome Trust Centre for Neuroimaging, University College London Institute of Neurology, Queen Square, London WC1N 3BG, United Kingdom; [3]Centro de Investigação e Intervenção Social and Department of Neurophysiology, Centro Hospitalar Psiquiátrico de Lisboa, Lisbon, Portugal

Computer 39 **3946.** **Interactively Computing and Visualizing Functional and Structural Brain Connectivity in Real-Time**
Maxime Chamberland[1], Michaël Bernier[1], David Fortin[2], Kevin Whittingstall[3], Maxime Descoteaux[4]
[1]Nuclear Medecine and Radiobiology, Université de Sherbrooke, Sherbrooke, Québec, Canada; [2]Neurosurgery, Université de Sherbrooke, Sherbrooke, Québec, Canada; [3]Diagnostic Radiology, Université de Sherbrooke, Sherbrooke, Québec, Canada; [4]Computer science, Université de Sherbrooke, Sherbrooke, Quebec, Canada

Computer 40 **3947.** **Evaluation of a Cerebral-Blood-Volume (CBV) Pharmaco-MRI (PhMRI) Assay Utilizing Low (0.1mg/70kg) and High (0.2mg/70kg) Dose Buprenorphine Infusion and a Novel USPIO Contrast Agent (Ferumoxytol) in Healthy Human Subjects.**
Richard Baumgartner[1], Arie Struyk[2], Jeff Evelhoch[2], Cynthia Gargano[2], Francheska Colon Gonzalez[2], Haiying Liu[1], Ruben Declercq[3], Hans Verheyden[3], Ingeborg Heirman[3], Hans De Pla[4], Griet Van Lancker[4], Sofie Van den Abeele[4], Adelheid Hollebosch[4], Brant Delafontaine[4], Luc Van Bortel[4], Rik Achten[4], Patricia Clement[4], Pieter Vandemaele[4], Dai Feng[1], Sofia Apreleva[1]
[1]Merck and Co, Rahway, NJ, United States; [2]Merck and Co, PA, United States; [3]Merck and Co, Belgium; [4]Ghent University, Belgium

Electronic Poster
Functional Connectivity Materials & Applications

Exhibition Hall Tuesday 16:00-17:00

Computer 42 **3948.** **Aberrant Brain Resting-State Functional Connectivity in Patients with Obstructive Sleep Apnea**
Bumhee Park[1], Jose A. Palomares[1], Mary A. Woo[2], Daniel W. Kang[3], Paul M. Macey[2], Frisca L. Yan-Go[4], Ronald M. Harper[5], Rajesh Kumar[1, 6]
[1]Anesthesiology, University of California at Los Angeles, Los Angeles, CA, United States; [2]School of Nursing, University of California at Los Angeles, Los Angeles, CA, United States; [3]Medicine, University of California at Los Angeles, Los Angeles, CA, United States; [4]Neurology, University of California at Los Angeles, Los Angeles, CA, United States; [5]Neurobiology, University of California at Los Angeles, Los Angeles, CA, United States; [6]Radiological Sciences, University of California at Los Angeles, Los Angeles, CA, United States

Computer 43 **3949.** **Development of the Relationship Between the Default Mode Network and Frontal Task-Positive Areas in Preterm Newborns: A RS-fMRI Study.**
Elisa Marchetta[1, 2], Sara Cirillo[1], Pasquale Della Rosa[3], Silvia Pontesilli[1], Andrea Falini[1, 4], Graziano Barera[5], Cristina Baldoli[1, 4], Paola Scifo[6, 7]
[1]Neuroradiology Dept., San Raffaele Hospital, Milan, -, Italy; [2]University of Milano-Bicocca, Milan, -, Italy; [3]Institute of Molecular Bioimaging and Physiology, CNR, Segrate, -, Italy; [4]Vita-Salute San Raffaele University, Milan, -, Italy; [5]Division of Neonatology, Pediatrics Dept, San Raffaele Hospital, Milan, -, Italy; [6]Nuclear Medicine Dept., San Raffaele Hospital, Milan, -, Italy; [7]CERMAC, San Raffaele Hospital, Milan, -, Italy

Computer 44 **3950. Functional Connectivity Changes of Dentate Nucleus in Autism Spectrum Disorders: A Resting-State fMRI Study.**
Giusy Olivito[1, 2], Maria Leggio[1, 2], Fiorenzo Laghi[3], Roberto Baiocco[3], Anna Maria Tedesco[1], Silvia Clausi[1], Chiara Mastropasqua[4], Marco Molinari[5], Mara Cercignani, [46], Marco Bozzali[4]
[1]Ataxia Research Laboratory, IRCCS Santa Lucia Foundation, Rome, Italy, Italy; [2]Department of Psychology, Faculty of Medicine and Psychology, University of Rome "Sapienza", Rome, Italy, Italy; [3]Department of Developmental and Social Psychology, Faculty of Medicine and Psychology, University of Rome "Sapienza", Rome, Italy, Italy; [4]Neuroimaging Laboratory, IRCCS Santa Lucia Foundation, Rome, Italy, Italy; [5]Neurological and Spinal Cord Injury Rehabilitation, Department A, IRCCS Santa Lucia Foundation, Rome, Italy, Italy; [6]Clinical Imaging Science Center (CISC), Brighton and Sussex Medical School, Brighton, Sussex, United Kingdom

Computer 45 **3951. The Impact of White Matter Hyperintensities on Brain Functional Connectivity in Amnestic Mild Cognitive Impairment Patients.**
Mario Torso[1], Chiara Mastropasqua[1], Giovanni Giulietti[1], Laura Serra[1], Giusy Olivito[2, 3], Elisa Tuzzi[1], Barbara Spanò[1], Carlo Caltagirone[4, 5], Mara Cercignani[6], Marco Bozzali[1]
[1]Neuroimaging Laboratory, Santa Lucia Foundation, IRCCS, Rome, Italy; [2]Ataxia research Laboratory, Santa Lucia Foundation, IRCCS, Rome, Italy; [3]Department of psychology , University of Rome Sapienza, Rome, Italy; [4]Department of Clinical and Behavioural Neurology, Santa Lucia Foundation, IRCCS, Rome, Italy; [5]Department of Neuroscience, University of Rome 'Tor Vergata', Rome, Italy; [6]CISC, Brighton & Sussex Medical School, Brighton, Sussex, United Kingdom

Computer 46 **3952. Observing the Activity Change of the Baseline Brain in Benign Essential Blepharospasm with Fractional Amplitude of Low-Frequency Fluctuation**
Mingfei Ni[1], Weiwei Wang[1], Ziheng Zhang[2], Qingwei Song[1], Ailian Liu[1], Yanwei Miao[1]
[1]Radiology Department, the First Affiliated Hospital of Dalian Medical University, Dalian, Liaoning, China; [2]GE Healthcare China, Beijing, China

Computer 47 **3953. Altered Resting State Functional Connectivity in Hypothyroidism**
Subash Khushu[1], Sadhana Singh[1], Mukesh Kumar[1], Shilpi Modi[1], Prabhjot Kaur[1], L Ravi Shankar[2]
[1]NMR Research Centre, INMAS, DRDO, Delhi, India; [2]Thyroid Research Centre, INMAS, DRDO, Delhi, India

Computer 48 **3954. Functional Connectivity MRI Can Distinguish Experimental Pain from the Resting State with Seed ROI in the Posterior Insula, But Not the Anterior Insula**
Keith M. Vogt[1], James W. Ibinson[2]
[1]Anesthesiology, University of Pittsburgh Medical Center, Pittsburgh, PA, United States; [2]Center for Pain Research, Dept of Anesthesiology, University of Pittsburgh, Pittsburgh, PA, United States

Computer 49 **3955. Resting-State Functional Network Abnormalities in Major Depressive Disorder with Self-Harm: A Connectome Analysis**
Zhen-Hui Li[1, 2], Vincent Chin-Hung Chen[3], Ming-Chou Ho[4], Jun-Cheng Weng[1, 2]
[1]Department of Biomedical Sciences, Chung Shan Medical University Hospital, Taichung, Taiwan; [2]School of Medical Imaging and Radiological Sciences, Chung Shan Medical University, Taichung, Taiwan; [3]Department of Psychiatry, Chung Shan Medical University Hospital, Taichung, Taiwan; [4]Department of Psychology, Chung Shan Medical University, Taichung, Taiwan

Computer 50 **3956. Relationship Between Visual Functional Connectivity and Duration of Blindness Depends on Onset of Visual Deprivation**
Matthew C. Murphy[1], Amy C. Nau[1], Christopher Fisher[1], Seong-Gi Kim[2, 3], Joel S. Schuman[1, 4], Kevin C. Chan[1, 4]
[1]Department of Ophthalmology, University of Pittsburgh, Pittsburgh, PA, United States; [2]Departments of Biological Sciences and Global Biomedical Engineering, Sungkyunkwan University, Suwon, Korea; [3]Department of Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [4]Department of Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States

Computer 51 **3957. Dynamic Changes in Whole-Brain Functional Connectivity During Story Listening**
Gloria Castellazzi[1, 2], Fulvia Palesi, [23], Ahmed T. Toosy[4], Stefania Bruno[5], Egidio D'Angelo, [26], Claudia A.M. Wheeler-Kingshott[7]
[1]Department of Electrical, Computer and Biomedical Engineering, University of Pavia, Pavia, PV, Italy; [2]Brain Connectivity Center , C. Mondino National Neurological Institute , Pavia, PV, Italy; [3]Department of Physics, University of Pavia, Pavia, PV, Italy; [4]Department of Brain Repair and Rehabilitation, Queen Square MS Centre, UCL Institute of Neurology, London, England, United Kingdom; [5]Overdale Hospital, Jersey, England, United Kingdom; [6]Department of Brain and Behavioral Sciences, University of Pavia, Pavia, PV, Italy; [7]NMR Research Unit, Department of Neuroinflammation, Queen Square MS Centre, UCL Institute of Neurology, London, England, United Kingdom

Computer 52 **3958. Wavelet Coherence Analysis of Functional Connectivity Within Default Mode Network Employing Simultaneous MultiSlice (SMS) Resting-State fMRI**

Hesamoddin Jahanian[1], Samantha Holdsworth[1], Thomas Christen[1], Hua Wu[2], Kangrong Zhu[3], Adam Kerr[3], Mathew J. Middione[4], Robert F. Dougherty[2], Michael Moseley[1], Greg Zaharchuk[1]
[1]Department of Radiology, Stanford University, Stanford, CA, United States; [2]Center for Cognitive and Neurobiological Imaging, Stanford University, Stanford, CA, United States; [3]Department of Electrical Engineering, Stanford University, Stanford, CA, United States; [4]Applied Sciences Laboratory West, GE Healthcare, Menlo Park, CA, United States

Computer 53 **3959. Dynamic Wavelet Coherence Maps and Frequency-Dependent Connectivity Strength in Default Mode Network**

Hsu-Lei Lee[1], Jakob Assländer[1], Pierre LeVan[1], Jürgen Hennig[1]
[1]Medical Physics, University Medical Center Freiburg, Freiburg, BW, Germany

Computer 54 **3960. Default Mode Network Activity During Spontaneous Movement Events**

Francisca Marie Tan[1, 2], Karen Mullinger[1], Yaping Zhang[2], David Siu-Yeung Cho[2], Susan Francis[1], Penny Gowland[1]
[1]Sir Peter Mansfield Imaging Centre, The University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]Department of Electrical and Electronic Engineering, The University of Nottingham Ningbo China, Ningbo, Zhejiang, China

Computer 55 **3961. Alterations in Regional Homogeneity of Resting-State Brain Activity in Patients with Chronic Prostatitis/Chronic Pelvic Pain Syndrome**

Yan Bai[1], Carlos Torres[2], Peng Liu[3], Xuejuan Yang[3], Dapeng Shi[4], Jie Tian[5], Meiyun Wang[4]
[1]Department of Radiology, Henan Provincial People¡¯s Hospital , Zhengzhou, Henan, China; [2]Division of Neuroradiology, Department of Radiology,, University of Ottawa, Ottawa, ON, Canada; [3]School of Life Sciences and Technology, Xidian University,, Shaanxi, China; [4]Department of Radiology, Henan Provincial People¡¯s Hospital, Zhengzhou, Henan, China; [5]Institute of Automation, Chinese Academy of Sciences, Beijing, China

Computer 56 **3962. Investigation of Local Brain Activity Changes in Restless Legs Syndrome Using Regional Homogeneity: A Preliminary Study**

Yong Zhang[1], Kang-An Li[2], Yun-Cheng Wu[2], Qian Jiang[1], Zhenyu Zhou[3], Gui-Xiang Zhang[2]
[1]GE Healthcare China, Shanghai, China; [2]Shanghai First People's Hospital, Shanghai, China; [3]GE Healthcare China, Beijing, China

Computer 57 **3963. An Exploration of Task Based fMRI in Neonates Using Echo-Shifting to Allow Acquisition at Longer TE Without Loss of Temporal Efficiency**

Giulio Ferrazzi[1], Rita G. Nunes[1, 2], Tomoki Arichi[1], Maryam Abaei[1], Emer Hughes[1], Anthony Price[1], Joseph Hajnal[1, 3]
[1]Centre for the Developing Brain, King's College London, London, United Kingdom; [2]Instituto de Biofisica e Engenharia Biomedica, Universidade de Lisboa, Lisbon, Portugal; [3]Division of Imaging and Sciences and Biomedical Engineering, King's College London, London, United Kingdom

Computer 58 **3964. Analysis of Functional Connectivity by Local Bold Signal Variance**

Gregory Kirk[1], Rasmus Birn[2], Andrew Alexander[3]
[1]Waisman Laboratory for Brain Imaging and Behavior, University of Wisconsin,Madison, Madison, Wi, United States; [2]Psychiatry, University of Wisconsin,Madison, Madison, Wi, United States; [3]University of Wisconsin,Madison, Madison, WI, United States

Computer 59 **3965. Functional Connectivity Assessment Using R2* Resting-State Functional MRI**

Venkata Veerendra Nadh Chebrolu[1], Suresh Joel[1], Brice Fernandez[2], Ek Tsoon Tan[3], Luca Marinelli[3], Dattesh Shanbhag[1], Radhika Madhavan[1], Rachel Connett[4], Ajit Shankaranarayanan[4], John Schenck[5]
[1]Medical Image Analysis Lab, GE Global Research, Bangalore, Karnataka, India; [2]GE Healthcare, Muenchen, Germany; [3]MRI Laboratory, GE Global Research, NY, United States; [4]GE Healthcare, CA, United States; [5]MRI Technologies & Systems, GE Global Research, NY, United States

Computer 60 **3966. 3D Hybrid Radial-Cartesian Sampling for Improved Resting State fMRI Using K-T FASTER**

Mark Chiew[1], Nadine N. Graedel[1], Jennifer A. McNab[2], Stephen M. Smith[1], Karla L. Miller[1]
[1]FMRIB Centre, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]Radiology, Stanford University, CA, United States

Computer 61 **3967. Characterization of Whole-Brain Dynamic Connectivity Patterns Using Simultaneous MultiSlice (SMS) Resting-State fMRI**

Hesamoddin Jahanian[1], Samantha Holdsworth[1], Thomas Christen[1], Hua Wu[2], Kangrong Zhu[3], Adam Kerr[3], Matthew J. Middione[4], Robert F. Dougherty[2], Michael Moseley[1], Greg Zaharchuk[1]
[1]Department of Radiology, Stanford University, Stanford, CA, United States; [2]Center for Cognitive and Neurobiological Imaging, Stanford University, Stanford, CA, United States; [3]Department of Electrical Engineering, Stanford University, Stanford, CA, United States; [4]Applied Sciences Laboratory West, GE Healthcare, Menlo Park, CA, United States

Computer 62 **3968. Hierarchical Parcellation Using Discrete Morse Theory of Whole-Brain High-Resolution Resting-State 7T fMRI Data**

Afonso Dias[1], Marta Bianciardi[2], Sandro Nunes[1], Rodolfo Abreu[1], Juliana Rodrigues[1], L. Miguel Silveira[3], Lawrence L. Wald[2], Patricia Figueiredo[1]
[1]Institute for Systems and Robotics and Department of Bioengineering, Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal; [2]Department of Radiology, A.A. Martinos Center for Biomedical Imaging, MGH and Harvard Medical School, Boston, MA, United States; [3]INESC-ID and Department of Electrical and Computer Engineering, Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal

Electronic Poster
Lung/Mediastinum/Hyperpolarized Gas Imaging

Exhibition Hall Wednesday 10:00-11:00

Computer 1 **3969. Chemical Exchange Saturation Transfer (CEST) Imaging for Thoracic Oncology: Preliminary Experience for Characterization of Thoracic Nodule and Mass**

Yoshiharu Ohno[1, 2], Masao Yui[3], Cheng Ouyang[4], Mitsue Miyazaki[4], Hisanobu Koyama[5], Shinichiro Seki[5], Katsusuke Kyotani[6], Yoshiko Ueno[5], Takeshi Yoshikawa[1, 2], Sumiaki Matsumoto[1, 2], Kazuro Sugimura[5]
[1]Advanced Biomedical Imaging Research, Kobe University Graduate School of Medicine, Kobe, Hyogo, Japan; [2]Division of Functional and Diagnostic Imaging Research, Department of Radiology, Kobe University Graduate School of Medicine, Kobe, Hyogo, Japan; [3]Toshiba Medical Systems Corporation, Tochigi, Japan; [4]Toshiba Medical Research Institute USA, IL, United States; [5]Division of Radiology, Department of Radiology, Kobe University Graduate School of Medicine, Kobe, Hyogo, Japan; [6]Center for Radiology and Radiation Oncology, Kobe University Hospital, KObe, Hyogo, Japan

Computer 2 **3970. Automated Registration-Segmentation Pipeline to Generate Lobar Ventilation Measurements in Diffuse and Localized Bronchiectasis**

ISMRM MERIT AWARD magna cum laude

Sarah Svenningsen[1, 2], Fumin Guo[1, 3], Roya Etemad-Rezai[4], David G. McCormack[5], Grace Parraga[1, 2]
[1]Imaging Research Laboratories, Robarts Research Institute, London, Ontario, Canada; [2]Department of Medical Biophysics, The University of Western Ontario, London, Ontario, Canada; [3]Graduate Program in Biomedical Engineering, The University of Western Ontario, London, Ontario, Canada; [4]Department of Medical Imaging, The University of Western Ontario, London, Ontario, Canada; [5]Division of Respirology, Department of Medicine, The University of Western Ontario, London, Ontario, Canada

Computer 3 **3971. Investigation of the Dependence of Measured Lung T_1 on TE Using UTE**

Simon MF Triphan[1, 2], Bertram J. Jobst[1], Felix A. Breuer[2], Mark O. Wielpuetz[1], Claus Peter Heussel[3], Hans-Ulrich Kauczor[1], Juergen Biederer[1, 4], Peter M. Jakob, [25]
[1]Diagnostic and Interventional Radiology, University Hospital Heidelberg, Heidelberg, Germany; [2]Research Centre Magnetic Resonance Bavaria e.V., Wuerzburg, Germany; [3]Dept. of Radiology, Thoraxklinik Heidelberg, Heidelberg, Germany; [4]Radiologie Darmstadt, Darmstadt, Germany; [5]Experimental Physics 5, University of Wuerzburg, Wuerzburg, Germany

Computer 4 **3972. Intratracheal Manganese-Enhanced MRI (MEMRI) at Very Low Dose: an Effective Approach for Lung Tumor Detection**

Andrea Bianchi[1], Oliviero G. Gobbo[2], Sandrine Dufort[3], Lucie Sancey[4], François Lux[4], Olivier Tillement[4], Jean-Luc Coll[3], Yannick Crémillieux[1]
[1]Centre de Résonance Magnétique des Systèmes Biologiques, University of Bordeaux, Bordeaux, France; [2]Trinity College Dublin, School of Biochemistry and Immunology, Dublin, Ireland; [3]IAB-INSERM, UJF U 823, Grenoble, France; [4]ILM UMR 5306, University Lyon 1, Lyon, France

Computer 5 **3973. Evaluation of a Novel Whole Lung 3D Dynamic OE-MRI Protocol in Healthy Subjects**

Jose L. Ulloa[1, 2], Alexandra R. Morgan[1, 2], Geoff JM Parker[1, 2]
[1]Bioxydyn Ltd, Manchester, United Kingdom; [2]Centre for Imaging Sciences, University of Manchester, Manchester, United Kingdom

Computer 6 **3974. High-Resolution ZTE MR Imaging of Emphysematous Lungs in Rats**
Andrea Bianchi[1], Marta Tibiletti[2], David Kind[1], Andrea Vögtle[1], Michael Neumaier[1], Thomas Kaulisch[1], Volker Rasche[2], Detlef Stiller[1]
[1]Targeting Discovery Research, In vivo imaging laboratory, Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach an der Riss, Baden-Württemberg, Germany; [2]Core Facility Small Animal MRI, Ulm University, Baden-Württemberg, Germany

Computer 7 **3975. On the Estimation of the Alveolar Size in the Human Lung Using Proton MRI**
Flavio Carinci[1, 2], Felix A. Breuer[1], Peter M. Jakob[1, 2]
[1]Research Center Magnetic Resonance Bavaria (MRB), Würzburg, Bayern, Germany; [2]Department of Experimental Physics 5, University of Würzburg, Würzburg, Bayern, Germany

Computer 8 **3976. Oxygen-Enhanced Ventilation Mapping of Whole Lungs Using 3D UTE at 3T**
Crystal E. Harrison[1], Masaya Takahashi[1], Robert E. Lenkinski[1], Ananth J. Madhuranthakam[1]
[1]Radiology and Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States

Computer 9 **3977. Optimized Ultra-Short Echo Time Breathhold 3D Lung Imaging**
Neville D. Gai[1], Robert Evers[1], Harsh Agarwal[2], Ashkan Malayeri[1], David Bluemke[1]
[1]Radiology & Imaging Sciences, NIH, Bethesda, MD, United States; [2]Philips Research N.A., Briarcliff Manor, NY, United States

Computer 10 **3978. Three-Dimensional Oxygen-Enhanced Human Lung MRI Using Ultra-Fast Balanced Steady-State Free Precession**
Orso Pusterla[1], Grzegorz Bauman[1], Gregor Sommer[2], Christoph Jud[3], Philippe C. Cattin[3], Oliver Bieri[1]
[1]Radiological Physics, Department of Radiology, University of Basel Hospital, Basel, Switzerland; [2]Clinic of Radiology and Nuclear Medicine, Department of Radiology, University of Basel Hospital, Basel, Switzerland; [3]Medical Image Analysis Center (MIAC), University of Basel Hospital, Basel, Switzerland

Computer 11 **3979. Breath-Held 3D Radial MRI for Simultaneous Assessment of Lung Structure and Function for Detection of Pulmonary Embolism**
Laura C. Bell[1], Peter Bannas[2], Kevin M. Johnson[2], Grzegor Bauman[3], Sean B. Fain[1, 2], Thomas M. Grist[1, 2], Scott K. Nagle[1, 2]
[1]Department of Medical Physics, University of Wisconsin - Madison, Madison, WI, United States; [2]Department of Radiology, University of Wisconsin - Madison, Madison, WI, United States; [3]Department of Radiology, University of Basel Hospital, Basel, Switzerland

Computer 12 **3980. Quantitative Gd-DOTA-Based Aerosol Deposition in Asthmatic and Emphysematous Rats Using UTE-MRI**
Hongchen Wang[1], Catherine Sebrié[1], Sébastien Judé[2], Anne Maurin[2], Stéphanie Rétif[3], Marilyne Le Mée[3], Rose-Marie Dubuisson[1], Georges Willoquet[1], Khaoula Bouazizi-Verdier[1], Luc Darrasse[1], Geneviève Guillot[1], Xavier Maître[1], Ludovic de Rochefort[1]
[1]Imagerie par Résonance Magnétique Médicale et Multi-Modalités (UMR8081) IR4M, CNRS, Univ. Paris-Sud, Orsay, France; [2]Centre de Recherches Biologiques CERB, Baugy, France; [3]Centre d'Imagerie du Petit Animal CIPA, CNRS-TAAM UPS44, Orléans, France

Computer 13 **3981. What Can Multiple B-Value ^{3}He MRI Tell Us About Lung Micro-Structure in Healthy Elderly Never-Smokers?**
Gregory Paulin[1, 2], Alexei Ouriadov[1, 2], Khadija Sheikh[1, 2], David G. McCormack[3], Grace Parraga[1, 2]
[1]Imaging Research Laboratories, Robarts Research Institute, London, Ontario, Canada; [2]Department of Medical Biophysics, The University of Western Ontario, London, Ontario, Canada; [3]Division of Respirology, Department of Medicine, The University of Western Ontario, London, Ontario, Canada

Computer 14 **3982. Dual-Nuclei ^{19}F-^{1}H MRI for Studying Administration and Clearance of Perfluorooctane in Rat Lungs**
Maya Khalifé[1], Hongchen Wang[1], Lizheng Qiu[1], Catherine Sebrié[1], Ludovic De Rochefort[1]
[1]IR4M (Imagerie par Résonance Magnétique Médicale et Multi-Modalités), Université Paris-Sud, CNRS, UMR8081, Orsay, France

Computer 15 **3983. Second-Order Texture Analysis of Hyperpolarized ^{3}He MRI - Beyond the Ventilation Defect**
Damien Pike[1, 2], Dante Capaldi[1, 2], Sarah Ashley Mattonen[2], Fumin Guo[1, 3], Aaron Ward[2], David McCormack[4], Grace Parraga[1, 2]

[1]Imaging Research Laboratories, Robarts Research Institute, London, Ontario, Canada; [2]Department of Medical Biophysics, The University of Western Ontario, London, Ontario, Canada; [3]Graduate Program in Biomedical Engineering, The University of Western Ontario, London, Ontario, Canada; [4]Division of Respirology, Department of Medicine, The University of Western Ontario, London, Ontario, Canada

Computer 16 **3984. Parallel Imaging for Short Breath Hold Times in Perfluorinated Gas Imaging of the Lung**

Hal Cecil Charles[1], Randall W. Jones[2], Ahmed F. Halaweish[3], Maureen D. Ainslie[1]
[1]Radiology, Duke Image Analysis Laboratory, Duke University Medical School, Durham, NC, United States; [2]ScanMed, Omaha, NE, United States; [3]Currently at Siemens Healthcare, MN, United States

Computer 17 **3985. Numerical Simulations of Xenon Diffusive Exchange in Human Lung Tissue and Capillaries Using Geometrical Models Based on Histology Sections**

Neil James Stewart[1], Juan Parra-Robles[1], Jim Michael Wild[1]
[1]Academic Unit of Radiology, University of Sheffield, Sheffield, South Yorkshire, United Kingdom

Computer 18 **3986. MRI Measurements of Regional Ventilation Heterogeneity: Ventilation Defect Clusters**

Dante Capaldi[1, 2], Khadija Sheikh[1, 2], Sarah Svenningsen[1, 2], Damien Pike[1, 2], David G. McCormack[3], Grace Parraga[1, 2]
[1]Imaging Research Laboratories, Robarts Research Institute, London, Ontario, Canada; [2]Department of Medical Biophysics, The University of Western Ontario, London, Ontario, Canada; [3]Division of Respirology, Department of Medicine, The University of Western Ontario, London, Ontario, Canada

Computer 19 **3987. Imaging Ventilator-Induced Alveolar Overdistension with Hyperpolarized Xenon Diffusion MRI**

Yi Xin[1], Hooman Hamedani[1], Maurizio Cereda[2], Sarmad Siddiqui[1], Mehrdad Pourfathi[1], Harrilla Profka[1], Stephen Kadlecek[1], Justin Clapp[1], Masaru Ishii[1, 3], Rahim R. Rizi[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Anesthesiology and Critical Care, University of Pennsylvania, Philadelphia, PA, United States; [3]Otolaryngology, Johns Hopkins University, MD, United States

Computer 20 **3988. Single Breath-Hold, Whole Lung Morphometry with Hyperpolarized ^{3}He Using Parallel Imaging**

Yulin V. Chang[1], James D. Quirk[1], Mario Castro[2], Dmitriy A. Yablonskiy[1]
[1]Radiology, Washington University in St. Louis, St. Louis, MO, United States; [2]Medicine, Washington University in St. Louis, St. Louis, MO, United States

Computer 21 **3989. Functional MRI Ventilation Discriminates Well-Controlled Asthmatic and Healthy Subjects: Sensitivity, Specificity and Comparison with FEV_1**

Sarah Svenningsen[1, 2], Bastiaan Driehuys[3], David G. McCormack[4], Grace Parraga[1, 2]
[1]Imaging Research Laboratories, Robarts Research Institute, London, Ontario, Canada; [2]Department of Medical Biophysics, The University of Western Ontario, London, Ontario, Canada; [3]Department of Radiology, Duke University, Durham, NC, United States; [4]Division of Respirology, Department of Medicine, The University of Western Ontario, London, Ontario, Canada

Computer 22 **3990. Pulmonary Time Constant of Oxygen Consumption Evaluated by Hyperpolarized ^{129}Xe MR**

Haidong Li[1], Zhiying Zhang[1], Xiuchao Zhao[1], Xianping Sun[1], Chaohui Ye[1], Xin Zhou[1]
[1]National Center for Magnetic Resonance in Wuhan, Wuhan Institute of Physics and Mathematics, Chinese Academy of Sciences, Wuhan, Hubei, China

Computer 23 **3991. Measurement of P_AO_2 with Hyperpolarized ^{129}Xe: Correction for Signal Decay Due to Gas Exchange.**

Iga Muradyan[1], Samuel Patz[1], Mikayel Dabaghyan[2], Mirko Hrovat[2], James P. Butler[1]
[1]Department of Radiology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, United States; [2]Mirtech, Inc., Brockton, MA, United States

Computer 24 **3992. Bronchodilatation Effect on Alveolar Oxygen Partial Pressure and Gas Exchange Rate of Asthma Patients: First Results of Clinical Study**

Maxim Terekhov[1], Ursula Wolf[2], Klaus K Gast[2], Christian Hoffmann[2], Sergei Karpuk[3], Christian Mrozek[3], Christoph Dueber[2], Laura Maria Schreiber[1]

[1]Radiology Department, Section of Medical Physics, Johannes Gutenberg University Medical Center Mainz, Mainz, Germany; [2]Radiology Department, Johannes Gutenberg University Medical Center Mainz, Mainz, Germany; [3]Institute of Physics, Johannes Gutenberg University, Mainz, Germany

Electronic Poster
Body DWI, Technical Development & Contrast

Exhibition Hall Wednesday 10:00-11:00

Computer 25 **3993. Improved Lesion Detection in Regions with Strong Susceptibility Using IShim-WBDWI as Compared to 3D-Shimming WBDWI**

ISMRM MERIT AWARD magna cum laude

Haibo Zhang[1], Huadan Xue[1], Hui Liu[2], Stemmer Alto[3], Kannengiesser Stephan[3], Kiefer Berthold[4], Zhengyu Jin[1]
[1]Radiology, Peking Union Medical College Hospital, Beijing, China; [2]NEA MR Collaboration, Siemens Ltd., China, Shanghai, China; [3]Healthcare, Siemens AG, Erlangen, Germany; [4]Radiology, Siemens, Erlangen, China

Computer 26 **3994. Accelerated, Segmented Diffusion-Weighted Imaging in the Prostate Achieves High Resolution, Speed and Geometric Fidelity**

ISMRM MERIT AWARD magna cum laude

Pelin Aksit Ciris[1, 2], Jr-yuan George Chiou[1, 2], Andriy Fedorov[1, 2], Clare M. Tempany-Afdhal[1, 2], Bruno Madore[1, 2], Stephan E. Maier[1, 2]
[1]Brigham and Women's Hospital, Boston, MA, United States; [2]Harvard Medical School, Boston, MA, United States

Computer 27 **3995. Diffusion Imaging of Mouse Kidney with Oscillating Gradients: Feasibility Study**

Hua Li[1], Feng Wang[1], Xiaoyu Jiang[1], Junzhong Xu[1], John C. Gore[1]
[1]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States

Computer 28 **3996. Comparison Between Whole-Body Coronal and Axial DWI Performed During PET-MR**

Piotr Obara[1], Valentina Taviani[1], Andreas Loening[1], Andrei Iagaru[1], Brian Hargreaves, Shreyas Vasanawala
[1]Radiology, Stanford Hospital, Stanford, CA, United States

Computer 29 **3997. Concurrent Chemoradiotherapy-Induced Pelvic Bone Marrow Changes Based on Intravoxel Incoherent Motion MR Imaging in Patients with Cervical Cancer: Initial Findings**

Jian He[1], Bin Zhu[1]
[1]Department of Radiology, Nanjing Drum Tower Hospital, Nanjing, Jiangsu, China

Computer 30 **3998. Evaluation of Pseudo-Hepatic Anisotropy Artifact in Liver Intravoxel Incoherent Motion (IVIM) Based on Clustering Technique**

Oi Lei Wong[1, 2], Gladys Goh Lo[3], Jing Yuan[4], Wai Kit Chung[3], Max W. K. Law[4], Benny W. H. Ho[3], Michael D. Noseworthy, [25]
[1]Department of Medical Physics and Applied Radiation Science, McMaster University, Hamilton, Ontario, Canada; [2]Imaging Research Center, St.Joseph's Healthcare, Hamilton, Ontario, Canada; [3]Department of Diagnostic & Interventional Radiology, Hong Kong Sanatorium & Hospital, Hong Kong, China; [4]Medical Physics and Research Department, Hong Kong Sanatorium & Hospital, Hong Kong, China; [5]Department of Electrical and Computer Engineering, McMaster Univeristy, Hamilton, Ontario, Canada

Computer 31 **3999. Time-SLIP Non-Contrast MR Hepatic Arteriography: Comparison with Contrast-Enhanced CT Arteriography**

Takeshi Yoshikawa[1], Yoshiharu Ohno[1], Katsusuke Kyotani[2], Saori Sato[3], Yoshimori Kassai[3], Hisanobu Koyama[4], Keitaro Sofue[4], Kazuro Sugimura[4]
[1]Advanced Biomedical Imaging Research Center, Kobe University Graduate School of Medicine, Kobe, Hyogo, Japan; [2]Center for Radiology and Radiation Oncology, Kobe University Hospital, Kobe, Hyogo, Japan; [3]Toshiba Medical Systems Corporation, Otawara, Tochigi, Japan; [4]Radiology, Kobe University Graduate School of Medicine, Kobe, Hyogo, Japan

Computer 32 **4000. Non-Contrast-Enhanced MR Arteriography with Balanced Steady-State Free-Precession Sequence and Time-Spatial Labeling Inversion Pulses: Visualization of the Left Gastric Vein with Information of Flow Direction to Predict Developing Esophageal Varices**

Akihiro Furuta[1], Hiroyoshi Isoda[1], Tsuyoshi Ohno[1], Rikiya Yamashita[1], Shigeki Arizono[1], Aki Kido[1], Koji Fujimoto[1], Naotaka Sakashita[2], Kaori Togashi[1]
[1]Kyoto University Graduate School of Medicine, Kyoto, Japan; [2]Toshiba Medical Systems Corporation, Otawara, Tochigi, Japan

Computer 33 4001. Evaluation of B-Value Distributions for Monoexponential Model of Prostate Cancer Diffusion-Weighted Imaging Using B Values Up to 2000 S/mm^2: A Repeatability Study on Region of Interest Level

Harri Merisaari[1], Jussi Toivonen[2], Marko Pesola[3], Pekka Taimen[4], Peter J. Boström[5], Tapio Pahikkala[2], Hannu J. Aronen[3], Ivan Jambor[3]
[1]Turku PET Centre, University of Turku, Turku, Finland; [2]Department of Information Technology, University of Turku, Turku, Finland; [3]Department of Diagnostic Radiology, University of Turku, Turku, Finland; [4]Department of Pathology, Turku University Hospital, Turku, Finland; [5]Department of Urology, Turku University Hospital, Turku, Finland

Computer 34 4002. Evaluation of Liver Fibrosis with Intravoxel Incoherent Motion MR Imaging: An Experimental Study in Rat Model

Caiyuan Zhang[1], Yanfen Cui[2], Yong Zhang[3], Dengbin Wang[2]
[1]Department of Radiology, Xinhua Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai , China; [2]Department of Radiology, Xinhua Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, China; [3]MR Research, GE healthcare, Shanghai, China

Computer 35 4003. Isotropic 3D MR Cholangiopancreatography (MRCP) Imaging in Breath-Hold Using SPARSE-SENSE Acceleration

Hersh Chandarana[1, 2], Annie Wang[1], Akio Yoshimoto[1], Alampady Shanbhogue[1], Mary Bruno[1], Tiejun Zhao[3], Esther Raithel[4], Ricardo Otazo[1, 2]
[1]Radiology, Center for Biomedical Imaging, NYU School of Medicine, New York, NY, United States; [2]Radiology, Center for Advanced Imaging Innovation and Research (CAI2R), NYU School of Medicine, New York, NY, United States; [3]Siemens Medical Solutions, New York, NY, United States; [4]Siemens AG, Healthcare , Erlangen, Germany

Computer 36 4004. Quantitative BOLD Imaging at 3T: Temporal Changes Within Hepatocellular Carcinoma Following Oxygen Challenge

Andrew J. Patterson[1], Andrew N. Priest[1], David J. Bowden[1], Martin J. Graves[1], David J. Lomas[1]
[1]Department of Radiology, Addenbrooke's Hospital & University of Cambridge, Cambridge, England, United Kingdom

Computer 37 4005. *In Vitro* Imaging of Kidney Stones in Pig Kidneys with Ultra-Short Echo-Time MRI

El-Sayed H. Ibrahim[1, 2], Robert Pooley[2], Joseph Cernigliaro[2], Mellena Bridges[2], Jamie Giesbrandt[2], James Williams[3], William Haley[2]
[1]University of Michigan, Ann Arbor, MI, United States; [2]Mayo Clinic, Jacksonville, FL, United States; [3]Indiana Unicersity, IN, United States

Computer 38 4006. Modeling of the Spatio-Temporal Distribution of Pulmonary Ventilation Via Perfluoropropane Gas Enhanced MRI

Brian J. Soher[1], Ahmed F. Halaweish[2], H. Cecil Charles[1]
[1]Duke University Medical Center, Durham, NC, United States; [2]Siemens Healthcare, MN, United States

Computer 39 4007. The Value of Gd-EOB-DTPA Enhanced MR Imaging in Characterizing Cirrhotic Nodules with Atypical Enhancement in Gd-DTPA Enhanced MRI Imaging

Yi-Chun Wang[1, 2], Wen-Pei Wu[2, 3], Cheng-In Hoi[2], Chen-Te Chou, [23], Ran-Chou Chen, [24]
[1]Radiology, taoyuan general hospital ministry of health and welfare, Taiwan, Taoyuan, Taiwan; [2]Biomedical Imaging and Radiological Science, National Yang-Ming Medical University, Taipei, Taiwan; [3]Radiology, Chang-Hua Christian Hospital, Taiwan; [4]Radiology, Taipei city Hospital, Taiwan, Taipei, Taiwan

Computer 40 4008. Diffusion Tensor Imaging and Multiparametric Mapping of Experimental Acute and Chronic Kidney Disease at 7T

Jutta Janke[1], Gunnar Schley[2], Michael Uder[1], Kai-Uwe Eckardt[2], Carsten Willam[2], Tobias Bäuerle[1]
[1]Institute of Radiology, University Hospital Erlangen, Erlangen, Germany; [2]Nephrology and Hypertensiology, University Hospital Erlangen, Erlangen, Germany

Computer 41 4009. Measurement of Body Fat Composition in Chick Embryos Using a 7T MRI

Qun Zhao[1, 2], Houchun H. Hu[3], Qingying Meng[1], Forrest Goodfellow, [24], Steve Stice, [24]
[1]Bioimaging Research Center, University of Georgia, Athens, GA., United States; [2]Regenerative Bioscience Center, University of Georgia, Athens, GA., United States; [3]Dept. of Radiology, Phoenix Children's Hospital, Phoenix, AZ, United States; [4]Department of Animal & Dairy Science, University of Georgia, GA., United States

Computer 42 **4010. Non-Invasive Assessment of Fibrosis and Inflammation in Rat Kidney Models with Diffusion-Weighted MRI**

Lindsey Alexandra Crowe[1], Iris Friedli[1], Christian Vesin[2], Lena Berchtold[3], Pierre-Yves Martin[4], Sophie de Seigneux[4], Jean-Paul Vallée[1]
[1]Division of Radiology / Faculty of Medicine, Geneva University Hospital, Geneva, Switzerland; [2]Division of Cell Physiology and Metabolism, Geneva University Hospital, Geneva, Switzerland; [3]Division of General Internal Medicine, Geneva University Hospital, Geneva, Switzerland; [4]Division of Nephrology, Geneva University Hospital, Geneva, Switzerland

Computer 43 **4011. DW-MRI Evaluation of the Serial Changes of Diffusion and Microperfusion in Adriamycin Induced Renal Injury Rat**

Haoran Sun[1], Huanhuan Wu[2], Ziheng Zhang[3]
[1]Radiology, Tianjin Medical University Hospital, Tianjin, China; [2]Tianjin Medical University Hospital, China; [3]MR Research China,GE Healthcare, Shanghai, China

Computer 44 **4012. Quantification of Intrapancreatic Fat (IPF) Using 1H-MR Spectroscopy and Multi-Echo Dixon: A Feasibility Study**

Annelise M. Silva[1, 2], Anshuman Panda[3], Raul Pannala[4], Vijay P. Singh[4], Krutika Patel[4], Vishnu T. Kommineni[4], Teresa Wu[5], Yinlin Fu[5], Alvin C. Silva[3]
[1]Research, Mayo Clinic , Phoenix, AZ, United States; [2]Arizona State University, Tempe, AZ, United States; [3]Radiology, Mayo Clinic , Phoenix, AZ, United States; [4]Gastroenterology, Mayo Clinic, Phoenix, AZ, United States; [5]School of Computing, Informatics, and Decision Systems Engineering, Arizona State University, Tempe, AZ, United States

Computer 45 **4013. Examining Intrauterine Growth Restriction Due to Placental Insufficiency in Fetal Guinea Pigs in Utero Using MRI**

ISMRM MERIT AWARD magna cum laude

Kevin J. Sinclair[1], Lanette J. Friesen-Waldner[1], Colin M. McCurdy[1], Curtis N. Wiens[2], Trevor P. Wade[1, 3], Barbra de Vrijer[4], Timothy RH Regnault[4, 5], Charles A. McKenzie[1, 3]
[1]Medical Biophysics, University of Western Ontario, London, Ontario, Canada; [2]Radiology, University of Wisconsin, Madison, WI, United States; [3]Robarts Research Institute, University of Western Ontario, London, Ontario, Canada; [4]Obstetrics and Gynaecology, University of Western Ontario, London, Ontario, Canada; [5]Physiology and Pharmacology, University of Western Ontario, London, Ontario, Canada

Computer 46 **4014. Assessing Renal Ischemia/reperfusion Injury in Mice Using Time-Dependent BOLD and DTI at 9.4T**

Dong-Cheol Woo[1], Do-Wan Lee[1], Nayoung Kim[1], Chul-Woong Woo[1], Sang-Tae Kim[1], Jeong-Kon Kim[1], Kyungwon Kim[1], Youyol Song[1], Hyun-Kwon Ha[1], Jin Seong Lee[1]
[1]Asan Institute for Life Sciences, Asan Medical Center, Seoul, Korea

Computer 47 **4015. High-Resolution Abdominal Diffusion-Weighted Imaging Based on Multi-Shot and Multiplexed Sensitivity Encoded Echo-Planar Imaging**

Hing-Chiu Chang[1], Arnaud Guidon[2], Dan Xu[3], Lloyd Estkowski[4], Ersin Bayram[5], Mei-Lan Chu[1, 6], Mustafa R. Bashir[1], Allen W. Song[1], Nan-kuei Chen[1]
[1]Duke University Medical Center, Durham, NC, United States; [2]Global MR Applications and Workflow, GE Healthcare, Boston, MA, United States; [3]Global MR Applications and Workflow, GE Healthcare, Waukesha, WI, United States; [4]Global MR Applications and Workflow, GE Healthcare, Menlo Park, CA, United States; [5]Global MR Applications and Workflow, GE Healthcare, Houston, TX, United States; [6]National Taiwan University, Taipei, Taiwan, Taiwan

Computer 48 **4016. Simultaneous Multislice Accelerated Free-Breathing Diffusion-Weighted Imaging of the Liver at 3T**

Chika C. Obele[1], Christopher Glielmi[2], Justin Ream[1], Ankur Doshi[1], Naomi Campbell[1, 3], Cheung Hoi Zhang[1], James Babb[1], Himanshu Bhat[4], Hersh Chandarana[1]
[1]Radiology, NYU Scool of Medicine and NYU Langone Medical Center, New York, NY, United States; [2]Siemens HealthCare, New York, NY, United States; [3]Radiology, Memorial Sloan Ketteringý, NY, United States; [4]Siemens Healthcare, Charlestown, MA, United States

Electronic Poster
Renal, Adrenal & Male Pelvis

Exhibition Hall Wednesday 10:00-11:00

Computer 49 **4017. Assessment of Diabetic Nephropathy in Mouse Models: GlucoCEST**

Feng Wang[1, 2], David Kopylov[3], Zhongliang Zu[1, 2], Keiko Takahashi[4, 5], John C. Gore[1, 2], Raymond C. Harris[4, 5], Takamune Takahashi[4, 5], C. Chad Quarles[1, 2]

[1]Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [2]Institute of Imaging Sciences, Vanderbilt University, TN, United States; [3]Drexel University, PA, United States; [4]Vanderbilt O'Brien Mouse Kidney Physiology and Disease Center, Vanderbilt University, TN, United States; [5]Division of Nephrology and Hypertension, Vanderbilt University, TN, United States

Computer 50 **4018. Sodium Quantification of Transplanted Kidney Using Dual-Tuned Proton/sodium MRI**

Chan Hong Moon[1], Alessandro Furlan[2], Jung-Hwan Kim[2], Tiejun Zhao[3], Ron Shapiro[4], Kyongtae Ty Bae[2]

[1]University of Pittsburgh, Pittsburgh, PA, United States; [2]University of Pittsburgh, PA, United States; [3]Siemens Medical Solutions, PA, United States; [4]Thomas E. Starzl Transplantation Institute, PA, United States

Computer 51 **4019. Diffusion Kurtosis Imaging of Transplanted Kidneys: Preliminary Results**

Yanjun Li[1], Yuan Xie[1], Yong Zhang[2], Dandan Zheng[3], Guangming Lu[1]

[1]Medical Imaging, Jingling Hospital, School of Medicine, Nanjing University, Nanjing, Jiangsu, China; [2]GE healthcare China, Shanghai, China; [3]GE healthcare China, Beijing, China

Computer 52 **4020. Optimizing Dose and Imaging Parameters in MR Renography for Quantitative Measurement of Renal Function**

Jeff L. Zhang[1], Christopher C. Conlin[1], Kristi Carlston[1], Daniel Kim[1], Glen Morrell[1], Kathryn Morton[1], Vivian S. Lee[1]

[1]Radiology, University of Utah, Salt Lake City, UT, United States

Computer 53 **4021. Optimization for Non-Contrast Enhanced MRA of Renal Artery at 3T: Evaluation of BBTI with Consideration of Renal Blood Velocity**

Yasuhisa Kurata[1], Aki Kido[1], Koji Fujimoto[1], Kayo Kiguchi[1], Kyoko Takakura[1], Kaori Togashi[1]

[1]Department of Diagnostic Imaging and Nuclear Medicine, Kyoto University Graduate School of Medicine, Kyoto, Japan

Computer 54 **4022. Modification of EGFR Formulas Using Estimates of Fat-Infiltration from MRI: A Preliminary Study in Cirrhosis Patients**

Christopher C. Conlin[1], Jeff L. Zhang[1], Glen Morrell, [12], Kristi Carlston[1], Tom Greene[3], Kathryn A. Morton[2], Vivian S. Lee[1, 2]

[1]Utah Center for Advanced Imaging Research, University of Utah, Salt Lake City, UT, United States; [2]Department of Radiology, University of Utah School of Medicine, Salt Lake City, UT, United States; [3]Internal Medicine, University of Utah School of Medicine, Salt Lake City, UT, United States

Computer 55 **4023. MRI- R2* Relaxometry for Assessment of Kidney Iron Accumulation as a Cause of Renal Dysfunction in Patients with Sickle Cell Disease (SCD)**

Sarah Keller[1], Bjoern Schoennagel[1], Zhiyue Jerry Wang[2], Regine Grosse[3], Peter Nielsen[4], Gerhard Adam[1], Roland Fischer[1], Jin Yamamura[1]

[1]Diagnostic and Interventional Radiology, University Medicine Hamburg Eppendorf, Hamburg, Germany; [2]Radiology, Children's Medical Center Dallas, Dallas, TX, United States; [3]Pediatric Hematology and Oncology, University Medicine Hamburg Eppendorf, Hamburg, Germany; [4]Institute of Biochemistry and Molecular Biology, Center of Experimental Medicine, Hamburg, Germany

Computer 56 **4024. An Apparatus for *In Vivo* Simultaneous Oxygen Probe Measurements During Renal BOLD MRI in a Porcine Model**

Joshua Kaggie[1], Vivian S. Lee[1], Robb Merrill[1], Glen Morrell[1]

[1]Utah Center for Advanced Imaging Research, Radiology, University of Utah, Salt Lake City, UT, United States

Computer 57 **4025. Preliminary Study of BOLD-MRI in Early Detection of the Renal Hypoxia in Diabetes**

Junjie Ren[1], Shengzhang Ji[1], Chunxia Li[1], Weidong Su[1], Chunqing Song[1], Lijun Qiu[1], Donghong Xu[1], Hao Wang[1], Queenie Chan[2], Yu Zhang[3]

[1]The 4th center hospital of TianJin, Tianjin, China; [2]Philips Healthcare, Hongkong, China; [3]Philips Healthcare, Beijing, China

Computer 58 **4026. Early Changes in Renal Hypoxia Following Iodinated Contrast: Need for Real-Time Monitoring**

Lu-Ping Li[1, 2], Jing Lu, [23], Tammy Franklin[4], Ying Zhou[5], Richard Solomon[6], Pottumarthi V. Prasad, [24]
[1]Department of Radiology / Center for Advanced Imaging, Northshore University Healthsystem, Evanston, IL , United States; [2]Pritzker School of Medicine, University of Chicago, Chicago, IL , United States; [3]Department of Obstetrics and Gynecology, Northshore University Healthsystem, Evanston, IL, United States; [4]Department of Radiology / Center for Advanced Imaging, Northshore University Healthsystem, Evanston, IL, United States; [5]Center for Clinical & Research Informatics, Northshore University Healthsystem, Evanston, IL, United States; [6]Nephrology, University of Vermont, VT, United States

Computer 59 **4027. The Influence of Vibration Frequency and Imaging Plane on Stiffness Measurements in Renal Magnetic Resonance Elastography**

Gavin Low[1, 2], Nicola Eve Owen[3], Ilse Joubert[1], Andrew J. Patterson[1], Martin J. Graves[1], Graeme J.M. Alexander[3], David J. Lomas[1]
[1]Radiology, Addenbrooke's Hospital, Cambridge, England, United Kingdom; [2]University of Alberta, Edmonton, Alberta, Canada; [3]Hepatology & Gastroenterology, Addenbrooke's Hospital, Cambridge, England, United Kingdom

Computer 60 **4028. Preclinical Magnetic Resonance Fingerprinting: Taking Advantage of Inherent Resistance to Motion Artifacts**

Ying Gao[1], Yong Chen[2], Dan Ma[1], Yun Jiang[1], Katherine M. Dell[3], Mitchell L. Drumm[3, 4], Mark A. Griswold[1, 2], Chris A. Flask, [12], Lan Lu[2, 5]
[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Radiology, Case Western Reserve University, Cleveland, OH, United States; [3]Pediatrics, Case Western Reserve University, Cleveland, OH, United States; [4]Genetics, Case Western Reserve University, Cleveland, OH, United States; [5]Urology, Case Western Reserve University, Cleveland, OH, United States

Computer 61 **4029. Texture Analysis in the Characterisation of Ovarian Lesions: Use of Synthetic Minority Oversampling**

Peter Gibbs[1], Martine Dujardin[1], Lindsay Turnbull[1]
[1]Centre for MR Investigations, University of Hull, Hull, East Yorkshire, United Kingdom

Computer 62 **4030. Preoperative Sentinel Lymph Node Diagnosis with Interstitial MR Lymphography in Cervical Cancer: A Pilot Study**

zhengyang zhou[1], Haiping yu[1], Ying Hong[2], Jing Fang[2]
[1]Radiology, Affiliated Drum Tower Hospital,School of Medicine,Nanjing University,China, Nanjing, Jiangsu, China; [2]Gynecology, Affiliated Drum Tower Hospital,School of Medicine,Nanjing University,China, Nanjing, Jiangsu, China

Computer 63 **4031. Feasibility of T2*-Weighted Image(T2*W) in the Assessment of Non-Perfused Volume (NPV) Inside Uterine Fibroids Response to MR-Guided High Intensity Focused Ultrasound (HIFU) Ablation**

Jintang Ye[1], Jing Liu[1], Juan Wei[2], Bilgin Keserci[3], Jianhua Zhang[4], Xuedong Yang[1], Rong Rong[1], Ying Zhu[1], Queenie Chan[5], Xiaoying Wang[1]
[1]Department of Radiology, Peking University First Hospital, Beijing, China; [2]Philips Research China, Shanghai, China; [3]MR Therapy Clinical Science, Philips Healthcare, Seoul, Korea; [4]Philips (China) Investment Co., Ltd, Beijing, China; [5]MR Clinical Science, Philips Healthcare, Hongkong, China

Computer 64 **4032. Gradient Echo Signal Decays in Gynecological Cancers Require a Gaussian Augmentation of the Mono-Exponential (GAME) Model: Preliminary Evaluation Post External Beam Radiation Therapy at 3T**

Pelin Aksit Ciris[1, 2], Robert V. Mulkern, [23], Mukund Balasubramanian, [23], Antonio L. Damato, [24], Ravi T. Seethamraju[5], Janice Fairhurst[1], Ferenc A. Jolesz[1, 2], Clare M. Tempany-Afdhal[1, 2], Ehud Schmidt[1, 2], Akila N. Viswanathan, [24]
[1]Brigham and Women's Hospital, Boston, MA, United States; [2]Harvard Medical School, Boston, MA, United States; [3]Boston Children's Hospital, Boston, MA, United States; [4]Dana-Farber Cancer Institute, Boston, MA, United States; [5]Siemens Healthcare, MA, United States

Computer 65 **4033. A Simple and Clinically Applicable Decision Tree for Accurate Classification of Complex Adnexal Masses Based on Quantitative DCE-MRI**

Mahnaz Nabil[1, 2], Anahita Fathi Kazerooni[1, 3], Hamidreza Haghighatkhah[4], Sanam Assili[1], Hamidreza Saligheh Rad[1, 3]
[1]Quantitative MR Imaging and Spectroscopy Group, Research Center for Molecular and Cellular Imaging, Tehran University of Medical Sciences, Tehran, Iran; [2]Department of Statistics, Tarbiat Modares University, Tehran, Iran; [3]Department of Medical Physics and Biomedical Engineering, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran; [4]Department of Radiology, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran

Computer 66 **4034. Reproducibility of Diffusional Kurtosis Imaging Measurement in Uterine Cervix *In Vivo***
Xiang Zheng[1], Xisheng Cao[1], Youping Xiao[1], Yunbin Chen[1], Weibo Chen[2]
[1]Radiology Department, Fujian Provincial Cancer Hospital, Fuzhou, Fujian, China; [2]Philips Healthcare, Shanghai, China

Computer 67 **4035. Faster MR Imaging of Cervical and Endometrial Carcinoma Through a Limited Sequence Protocol Based on High-Resolution, Free-Breathing, Post-Contrast 3D SPGR Imaging with Comparison to Standard Care**
Stephanie T. Chang[1], Andreas M. Loening[1], Marcus T. Alley[1], Shreyas S. Vasanawala[1]
[1]Dept. of Radiology, Stanford University, Stanford, CA, United States

Computer 68 **4036. Advanced Cervical Cancer: Quantitative Assessment of Early Response with Intravoxel Incoherent Motion Diffusion-Weighted Magnetic Resonance Imaging After Neoadjuvant Chemotherapy**
Yanchun Wang[1], Daoyu Hu[1]
[1]Tongji Hospital Tongji Medical College, Wuhan, Hubei, China

Computer 69 **4037. A Comparison Study of Intravoxel Incoherent Motion (IVIM) Based DWI and Pharmacokinetics Analysis Based Dynamic Contrast Enhanced MRI in Case of Cervical Cancer**
Yan Zhou[1], Jianyu Liu[1], Wei He[1], Yang Shen[1], Weidan Lu[1], Huici Zhu[1], Lizhi Xie[2], Zhenyu Zhou[2]
[1]Peking University Third Hospital, Beijing, China; [2]GE Healthcare, Beijing, China

Computer 70 **4038. Modelling Diffusion-Weighted MRI Data from Primary and Metastatic Ovarian Tumours**
Jessica M. Winfield[1], Nandita M. deSouza[1, 2], Andrew N. Priest[3], Jennifer C. Wakefield[2], Charlotte Hodgkin[3], Susan Freeman[3], Matthew R. Orton[2], David J. Collins[1, 2]
[1]MRI, Royal Marsden Hospital, Sutton, Surrey, United Kingdom; [2]CRUK Cancer Imaging Centre, Institute of Cancer Research, Sutton, Surrey, United Kingdom; [3]Department of Radiology, Addenbrooke's Hospital, Cambridge, United Kingdom

Computer 71 **4039. Non-Invasive Assessment of Fibrosis and Inflammation in the Whole Kidney of CKD Patients by Diffusion-Weighted Imaging with Readout-Segmented EPI**
Iris Friedli[1], Lindsey Alexandra Crowe[1], Lena Berchtold[2], Solange Moll[3], Karine Hadaya[4], Thomas De Perrot[1], Pierre-Yves Martin[4], Sophie De Seigneux[4], Jean-Paul Vallée[1]
[1]Division of Radiology, Faculty of Medicine, Geneva University Hospital, University of Geneva, Geneva, Switzerland; [2]Division of Internal Medicine, Faculty of Medicine, Geneva University Hospital, University of Geneva, Geneva, Switzerland; [3]Division of Pathology, Faculty of Medicine, Geneva University Hospital, University of Geneva, Geneva, Switzerland; [4]Division of Nephrology, Faculty of Medicine, Geneva University Hospital, University of Geneva, Geneva, Switzerland

Computer 72 **4040. Introvoxel Incoherent Motion (IVIM) with Multi-B Values DWI in the Diagnosis and Grading of Cervical Cancer**
Yan Zhou[1], Jianyu Liu[1], Wei He[1], Yang Shen[1], Weidan Lu[1], Huici Zhu[1], Dandan Zheng[2], Ziheng Zhang[2]
[1]Peking University Third Hospital, Beijing, China; [2]GE Healthcare, Beijing, China

Electronic Poster
Thermometry & Thermotherapy

Exhibition Hall Wednesday 10:00-11:00

Computer 73 **4041. MR-ARFI for the Quantification of Tissue Elastic Properties**
Tetiana Dadakova[1], Ali Caglar Özen[1], Axel Joachim Krafft[1], Jurgen Fütterer[2], Martijn Hoogenboom[2], Jürgen Walter Jenne[3], Erik Dumont[4], Christakis Damianou[5], Jan Gerrit Korvink[6], Michael Bock[1]
[1]Department of Radiology - Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]Department of Radiology and Nuclear medicine, Radboud University Medical Center, Nijmegen, Netherlands; [3]Fraunhofer MEVIS, Bremen, Germany; [4]Image Guided Therapy, Pessac, France; [5]Department of Electrical Engineering, Computer Engineering and Informatics, Cyprus University of Technology, Limassol, Cyprus; [6]Department of Microsystems Engineering (IMTEK), University of Freiburg, Freiburg, Germany

Computer 74 **4042. Acoustic Radiation Force Imaging (ARFI) Based on Fast Spin Echo**
Yuval Zur[1]
[1]GE Healthcare, Tirat Carmel, Israel

Computer 75 **4043. Dynamic 3D MR Acoustic Radiation Force Imaging for Tissue Property Estimation**
Joshua Thomas de Bever[1], [2], Henrik Odéen, [23], Dennis L. Parker, [24]
[1]School of Computing, University of Utah, Salt Lake City, UT, United States; [2]Utah Center for Advanced Imaging Research, Salt Lake City, UT, United States; [3]Department of Physics, University of Utah, Salt Lake City, UT, United States; [4]Department of Radiology, University of Utah, Salt Lake City, UT, United States

Computer 76 **4044. Temperature and Thermal Dose Analysis Associated with Acoustic Radiation Force from High Intensity Focused Ultrasound in Phantom for Viscoelasticity Measurement**
Jiming Zhang[1], Amol Pednekar[2], Pei-Herng Hor[3], Raja Muthupillai[1]
[1]Diagnostic and Interventional radiology, CHI St Lukes' Health, Houston, TX, United States; [2]Philips Healthcare, TX, United States; [3]Physics, University of Houston, Houston, TX, United States

Computer 77 **4045. Real-Time MR Thermometry Feedback Control for Prostate Hyperthermia with a Commercial HIFU System**
Eugene Ozhinsky[1], Vasant A. Salgaonkar[2], Chris J. Diederich[2], Viola Rieke[1]
[1]Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [2]Radiation Oncology, University of California San Francisco, San Francisco, CA, United States

Computer 78 **4046. Pre-Clinical Head-Mounted MRgFUS Device for Large Animals**
Robb Merrill[1], Henrik Odeen[1], Emilee Minalga[1], J. Rock Hadley[1], Dennis Parker[1], Allison Payne[1]
[1]Radiology, University of Utah, Salt Lake City, UT, United States

Computer 79 **4047. Investigating the Utility of Diffusion-Weighted Imaging (DWI) for Monitoring Treatment Efficacy During MR Guided High Intensity Focused Ultrasound (MRgHIFU) Therapy in Bone Applications**
Sharon L. Giles[1], Jessica M. Winfield[2], Ian Rivens[3], David J. Collins[2], Gail R. ter Haar[3], Nandita M. deSouza[2]
[1]MRI Unit, Royal Marsden Hospital, Sutton, Surrey, United Kingdom; [2]CRUK Cancer Imaging Centre, The Institute of Cancer Research, Sutton, Surrey, United Kingdom; [3]Therapeutic Ultrasound, The Institute of Cancer Research, Sutton, Surrey, United Kingdom

Computer 80 **4048. Clinical Feasibility of Motion Compensation for MR-Based Thermometry for Treatment in the Head and Neck Region Using Magnetic Resonance-Guided Focused Ultrasound**
Samuel Pichardo[1], [2], Justin Lee[3], Kullervo Hynynen[4]
[1]Thunder Bay Regional Research Institute, Thunder Bay, ON, Canada; [2]Electrical Engineering & Physics, Lakehead University, Thunder Bay, Ontario, Canada; [3]Odette Cancer Centre, Toronto, Ontario, Canada; [4]Physical Sciences, Sunnybrook Research Institute, Toronto, Ontario, Canada

Computer 81 **4049. The Changes of Uterine Fibroids' Diffusion and Perfusion Status After MR-Guided HIFU Ablation Evaluated from IVIM MR Imaging with Different B-Values Combination**
Jia Liu[1], Bilgin Keserci[2], Juan Wei[3], Queenie Chan[4], Yu Zhang[5], Rong Rong[1], Xiaoying Wang[1]
[1]Radiology, Peking University First Hospital, Beijing, China; [2]Philips Healthcare, Seoul, Korea; [3]Philips Research China, Shanghai, China; [4]Philips Healthcare, Hong Kong, China; [5]Philips Healthcare, Beijing, China

Computer 82 **4050. MRI Guided High Intensity Focused Ultrasound (HIFU) of Visceral Fat in Overweight Rats**
Patrick Winter[1], Matthew Lanier[1], Ari Partanen[2], Charles Dumoulin[1]
[1]Radiology, Cincinnati Children’s Hospital, Cincinnati, OH, United States; [2]Clinical Science MR Therapy, Philips Healthcare, Andover, MA, United States

Computer 83 **4051. MR-Guided High Intensity Focused Ultrasound for Ablated Kidney: MR Perfusion Assessment and Microscopic Characterization**
Maythem Saeed[1], Loi Do[1], Mark W. Wilson[1], Roland Krug[1]
[1]Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, Ca, United States

Computer 84 **4052. Localized Hyperthermia in Rodent Models Using a MRI-Compatible High-Intensity Focused Ultrasound System**
Chenchen Bing[1], Joris Nofiele[1], Robert Staruch, [12], Yonatan Chatzinoff[1], Michele Harbeson[3], Danny Maples[3], Jerry Malayer[3], Samuel Pichardo[4], Ashish Ranjan[3], Rajiv Chopra[1]

[1]Radiology, UT Southwestern Medical Center, Dallas, TX, United States; [2]Clinical Sites Research Program, Philips Research North Amarica, Briarcliff Manor, NY, United States; [3]Center for Veterinary Health Sciences, Oklahoma State University, Stillwater, OK, United States; [4]Thunder Bay Regional Research Institute, Thunder Bay, ON, Canada

Computer 85 **4053. MR Thermometry in *In-Vitro* Flows**

Waltraud B. Buchenberg[1], Florian Wassermann[2], Sven Grundmann[2], Bernd Jung[3], Robin Simpson[1]
[1]Dept. of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]Center of Smart Interfaces, Technische Universität Darmstadt, Darmstadt, Germany; [3]Institute of Diagnostic, Interventional and Pediatric Radiology, University Hospital, Bern, Switzerland

Computer 86 **4054. A New Time Shifted Fast Spin Echo Thermometry Sequence**

Yuval Zur[1]
[1]GE Healthcare, Tirat Carmel, Israel

Computer 87 **4055. Proton Resonance Shift Based Temperature Mapping with Field Monitoring**

David O. Brunner[1], Simon Gross[1], Lars Kasper[1], Bertram J. Wilm[1, 2], Christoph Barmet[1, 2], Klaas P. Pruessmann[1]
[1]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [2]Skope Magnetic Resonance Technologies LLC, Zurich, Switzerland

Computer 88 **4056. T1-Based MR Thermometry Close to Metal**

Hans Weber[1], Daehyun Yoon[1], Valentina Taviani[1], Kim Butts Pauly[1, 2], Brian A. Hargreaves[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Bioengineering, Stanford University, Stanford, CA, United States

Computer 89 **4057. Feasibility of Temperature Imaging of Knee Joint Cartilage Under Thermal Therapy Using Water Proton Resonance Frequency Shift**

Atsushi Shiina[1], Kenji Takahashi[2], Jiro Nakano[3], Kagayaki Kuroda[1]
[1]Graduate School of Engineering, Tokai University, Hiratsuka, Kanagawa, Japan; [2]Department of Orthopaedic Surgery, Nippon Medical School, Bunkyo, Tokyo, Japan; [3]School of Information Science and Technology, Tokai University, Hiratsuka, Kanagawa, Japan

Computer 90 **4058. Direct Virtual Coil (DVC) for Bone Tumor Temperature Mapping**

Yuxin Hu[1], Shuo Chen[2], Bingyao Chen[3], Jiafei Yang[3], Xing Wei[3], Shi Wang[2], Kui Ying[2]
[1]Tsinghua University, Beijing, China; [2]Engineering Physics, Tsinghua University, Beijing, China; [3]Department of Orthopedics, First Affiliated Hospital of PLA General Hospital, Beijing, China

Computer 91 **4059. Real-Time Online Reconstruction of 3D MR Thermometry Data for MRgFUS Applications**
ISMRM MERIT AWARD magna cum laude

Henrik Odéen[1, 2], John Roberts[1], Joshua de Bever[1, 3], Dennis L. Parker
[1]Utah Center for Advanced Imaging Research, Department of Radiology, University of Utah, Salt Lake City, UT, United States; [2]Department of Physics and Astronomy, University of Utah, Salt Lake City, UT, United States; [3]School of Computing, University of Utah, Salt Lake City, UT, United States

Computer 92 **4060. Improving the Referenceless MR Thermometry Using Adaptive ROI**

Changjun Tie[1], Chao Zou[1], Xin Liu[1]
[1]Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, Guangdong, China

Computer 93 **4061. Simultaneous T2 Mapping in Near-Field Subcutaneous Fat Layer and PRFS Temperature Mapping in the Target Region Using Fast Interleaved Sequences to Monitor MR-HIFU Sonication**

Jochen Keupp[1], Steffen Weiss[1], Jaakko Tolo[2], Holger Gruell[3, 4], Edwin Heijman[3]
[1]Philips Research, Hamburg, Germany; [2]Philips Healthcare, Helsinki, Finland; [3]Philips Research, Eindhoven, Netherlands; [4]Eindhoven University of Technology, Eindhoven, Netherlands

Computer 94 **4062. Multivoxel Proton Magnetic Resonance Spectroscopy for Non-Invasive Thermometry: Improvements in Spectral Quality Using SemiLASER with GRE Shim**

Candace C. Fleischer[1, 2], Deqiang Qiu[3], Xiaodong Zhong[4], Hui Mao[3], John N. Oshinksi[3], Xiaoping Hu[1, 2], Seena Dehkharghani[3]

[1]Biomedical Imaging Technology Center, Emory University, Atlanta, GA, United States; [2]Biomedical Engineering, Emory University, Atlanta, GA, United States; [3]Radiology and Imaging Sciences, Emory University Hospital, Atlanta, GA, United States; [4]MR R&D Collaborations, Siemens Healthcare, Atlanta, GA, United States

Computer 95 **4063. Feasibility and Functionality of Quantitative Real-Time Monitoring During MRI-Guided Percutaneous Cryoablation**
Jonathan Scalera[1], Gary P. Zientara[2], Kumal Tuncali[1]
[1]Brigham and Women's Hospital, Boston, MA, United States; [2]US Army Research Institute of Environmental Medicine, Natick, MA, United States

Computer 96 **4064. MRI Temperature Mapping of NIR Absorbing Gold Nanoparticles Mediated Photothermal Therapy**
Dong-Hyun Kim[1, 2], Ken Zhao[1], Daniele Procissi[1], Andrew Gordon[1], Weiguo Li[1], Andrew C. Larson[1, 2]
[1]Department of Radiology, Northwestern University Feinberg School of Medicine, Chicago, IL, United States; [2]R.H. Lurie Cancer Center, Chicago, IL, United States

Electronic Poster
Hepatobiliary I

Exhibition Hall Wednesday 11:00-12:00

Computer 1 **4065. Quantitative Magnetic Resonance Elastography of Solid Pancreatic Masses**
Yu Shi[1], He An[1], Qiyong Guo[1], Richard L. Ehman[2], Kevin J. Glaser[2]
[1]Department of radiology, Shengjing hospital of china medical university, Shenyang, Liaoning, China; [2]Department of Radiology, Mayo Clinic, Rochester, MN, United States

Computer 2 **4066. The Comparison of Gd-EOB-DTPA Enhanced-Magnetic Resonance Imaging and Magnetic Resonance Elastography for the Detection and Staging of Hepatic Fibrosis**
Cheng-In Hoi[1], Wen-Pei Wu[1, 2], Yi-Chun Wang[1, 3], Chen-Te Chou[1, 2], Ran-Chou Chen[1, 4]
[1]Department of Biomedical Imaging and Radiological Sciences, National Yang-Ming University, Taipei, Taiwan, Taiwan; [2]Department of Radiology, Chang-Hua Christian Hospital, Taiwan, Taiwan; [3]Department of Radiology, Taoyuan general hospital ministry of health and welfare, Taiwan, Taiwan; [4]Department of Radiology, Taipei City Hospital, Taiwan, Taiwan

Computer 3 **4067. MR Elastography of the Liver: Qualitative and Quantitative Comparison of GRE and EPI Sequences.**
Temel Kaya Yasar[1], Cecilia Besa[1], Jad Bou Ayache[1], Octavia Bane[1], Maggie Fung[2], Bachir Taouli[1]
[1]Icahn School of Medicine at Mount Sinai, New York, NY, United States; [2]GE Healthcare, New York, NY, United States

Computer 4 **4068. Prospective Comparison of MR Elastography and US Acoustic Radiation Force Impulse for Evaluation of Hepatic Fibrosis**
Chen-Te Chou[1, 2], Wen-Pei Wu[2], Yi-Jun Wang[2], Ran-Chou Chen[2, 3]
[1]Radiology, Chang-Hua Christian hospital, Chang-Hua, Taiwan; [2]Biomedical Imaging and Radiological Sciences, National Yang-Ming University, Taipei, Taiwan, Taiwan; [3]Radiology, Taipei City Hospital, Taipei, Taiwan, Taiwan

Computer 5 **4069. Multi-Model Direct Inversion Algorithms at 3.0T MR Elastography of the Liver: Comparison with Conventional Multi-Scale Algorithm**
Kengo Yoshimitsu[1], Atsushi Nozaki[2], Richard L. Ehman[3]
[1]Radiology, Fukuoka University, Fukuoka, Japan; [2]GE Healthcare, Tokyo, Japan; [3]Mayo Clinic, Minessota, United States

Computer 6 **4070. Detection of Cytoplasmic Lipid Within Neuroendocrine Tumors of the Pancreas on Chemical Shift MRI**
YOSHIHIKO FUKUKURA[1], Koji Takumi[1], Toshikazu Shindo[1], Tomokazu Umanodan[1], Aya Umanodan[1], Junichi Ideue[1], Hiroto Hakamada[1], Kiyohisa Kamimura[1], Masanori Nakajo[1], Takashi Yoshiura[1]
[1]Kagoshima University Graduate School of Medical and Dental Sciences, Kagoshima, Japan

Computer 7 **4071. Repeatability of Measurement of Liver T1, T2 and PDFF by Multi-TR, Multi-TE Single Breath-Hold ^{1}H MR Spectroscopy.**
Gavin Hamilton[1], Michael S. Middleton[1], William M. Haufe[1], Jonathan C. Hooker[1], Yesenia Covarrubias[1], Rohit Loomba[2], Claude B. Sirlin[1]

[1]Department of Radiology, UC San Diego, San Diego, CA, United States; [2]Department of Medicine, UC San Diego, San Diego, CA, United States

Computer 8 **4072. Proton Density Fat Fraction and Liver Water and Fat T2 as Measured by Multi-TR, Multi-TE ^{1}H MRS Compared to Multi-TE ^{1}H MRS.**

Gavin Hamilton[1], Michael S. Middleton[1], Alexandra N. Schlein[1], Catherine A. Hooker[1], Lisa Clark[1], Rohit Loomba[2], Claude B. Sirlin[1]
[1]Department of Radiology, UC San Diego, San Diego, CA, United States; [2]Department of Medicine, UC San Diego, San Diego, CA, United States

Computer 9 **4073. Whole Liver Fat Quantification in Pediatric Patients with NonAlcoholic Fatty Liver Disease (NAFLD)**

Xiaodong Zhong[1], Jie Deng[2, 3], Brian M. Dale[4], Cynthia K. Rigsby[2, 3], Mark H. Fishbein[5]
[1]MR R&D Collaborations, Siemens Healthcare, Atlanta, GA, United States; [2]Department of Medical Imaging, Ann & Robert H. Lurie Children's Hospital of Chicago, Chicago, IL, United States; [3]Department of Radiology, Feinberg School of Medicine, Northwestern University, Chicago, IL, United States; [4]MR R&D Collaborations, Siemens Healthcare, Cary, NC, United States; [5]Division of Gastroenterology, Hepatology, and Nutrition, Ann & Robert H. Lurie Children's Hospital of Chicago, Chicago, IL, United States

Computer 10 **4074. Optimization of the Fat Fraction and T2* Measurements in Mice at 4.7T with the IDEAL Algorithm**

Roberto Salvati[1, 2], Pierre-Antoine Eliat[3], Orlando Musso, [4], Christine Perret[5], Eric Hitti[1, 2], Marie Sicard, [4], Herve Saint-Jalmes[1, 2], Giulio Gambarota[1, 2]
[1]LTSI, Université de Rennes 1, Rennes, France; [2]INSERM, UMR 1099, Rennes, France; [3]PRISM-Biosit CNRS UMS 3480, Université de Rennes 1, INSERM UMS 018, Rennes, France; [4]Institut National de la Santé et de la Recherche Médicale, Unit 991, Liver Metabolisms and Cancer, Rennes, France; [5]Oncogenèse de l'épithélium digestif, INSERM UMRS 1016, Institut Cochin, Paris, France

Computer 11 **4075. MRI-R2* Relaxometry for Cardiac, Pancreatic and Hepatic Iron Assessment in Patients with Hereditary Hemochromatosis**

Sarah Keller[1], Bjoern Schoennagel[1], Zhiyue Jerry Wang[2], Regine Grosse[3], Peter Nielsen[4], Gerhard Adam[1], Roland Fischer[1], Jin Yamamura[1]
[1]Diagnostic and Interventional Radiology, University Medicine Hamburg Eppendorf, Hamburg, Germany; [2]Radiology, Children's Medical Center Dallas, Dallas, TX, United States; [3]Pediatric Hematology and Oncology, University Medicine Hamburg Eppendorf, Hamburg, Germany; [4]Institute of Biochemistry and Molecular Biology, Center of Experimental Medicine, Hamburg, Germany

Computer 12 **4076. Repeatability of MRI-Based Liver Fat and Iron Quantification Using a Multistep Adaptive Fitting Algorithm**

Keitaro Sofue[1, 2], Xiaodong Zhong[3], Marcel Dominik Nickel[4], Brian Marshall Dale[5], Mustafa Rifaat Bashir[1]
[1]Radiology, Duke University Medical Center, Durham, NC, United States; [2]Radiology, Kobe University Graduate School of Medicine, Kobe, Hyogo, Japan; [3]Siemens Healthcare, Atlanta, GA, United States; [4]Siemens Healthcare, Erlangen, Germany; [5]Siemens Healthcare, Morrisville, NC, United States

Computer 13 **4077. Correcting the Influence of Iron on Steatosis Measurements**

Peter A. Hardy[1], Jimmy Lee[1]
[1]Radiology, University of Kentucky, Lexington, KY, United States

Computer 14 **4078. Liver R2* Value from Multi-Echo IDEAL at 3.0 T: A Potential Biomarker for Adjusting IV Iron Dose and Anemia Management Practices on Maintenance Hemodialysis Patients**

Bing Wu[1], Xinhuai Wu[1], Wenbo Zhang[2], Dandan Zheng[3], Mingmei Ge[1], Xiao Li[1], Yingkui Zhang[3]
[1]Radiology Dept., Beijing Military General Hospital, Bejing, Beijing, China; [2]Nephrology Dept., Beijing Military General Hospital, Bejing, Beijing, China; [3]GE Healthcare China, Beijing, China

Computer 15 **4079. Liver Iron Content Determination Using GRE and Signal Intensity Ratio Analysis in MR Systems from Different Vendors**

Arthur Peter Wunderlich[1, 2], Meinrad Beer[1], Peter Bernhardt[3], Holger Cario[4], Vinzenz Hombach[3], Reinhard Meier[1], Wolfgang Rottbauer[3], Stefan Andreas Schmidt[1], Volker Rasche[3]
[1]Clinic for Diagnostic and Interventional Radiology, Univ.-Clinic Ulm, Ulm, Germany; [2]Section for Experimental Radiology, Univ.-Clinic Ulm, Ulm, Germany; [3]Clinic for Internal Medicine II - Cardiology, Univ.-Clinic Ulm, Ulm, Germany; [4]Clinic for Pediatrics, Univ.-Clinic Ulm, Ulm, Germany

Computer 16 **4080.** **Pancreatic Iron: A Future Major Organ in Iron Overload Diseases - The Role of R2*-Relaxometry**
Jin Yamamura[1], Sarah Keller[1], Björn Schönnagel[1], Regine Grosse[2], Zhiyue Jerry Wang[3], Peter Nielsen[4], Gerhard Adam[1], Roland Fischer[1, 5]
[1]Diagnostic and Interventional Radiology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Pediatric Hematology and Oncology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [3]Department of Radiology, University of Texas Southwestern Medical Center, Dallas, TX, United States; [4]Biochemistry, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [5]Department of Radiology, Children's Hospital & Research Center Oakland, Oakland, CA, United States

Computer 17 **4081.** **Fast ^{1}H-MRS Measurement of Pancreatic Fat Content in a Single Breath-Hold**
Ronald Ouwerkerk[1], Ahmed M. Gharib[1]
[1]The Biomedical and Metabolic Imaging Branch, NIDDK/NIH, Bethesda, MD, United States

Computer 18 **4082.** **Quantification of Hepatic and Myocellular Glycogen After Two Days of Diet and Activity Standardization: A ^{13}C MRS Reproducibility Study in Individuals with Type 1 Diabetes and Matched Healthy Controls**
Tania Buehler[1], Lia Bally[2], Ayse Sila Dokumaci[1], Christoph Stettler[2], Chris Boesch[1]
[1]Depts. Radiology and Clinical Research, University Bern, Bern, Switzerland; [2]Division of Endocrinology, Diabetes and Clinical Nutrition, Inselspital Bern, Bern, Switzerland

Computer 19 **4083.** **Extramedullary Hematopoiesis Is Associated with a Thalassaemia Intermedia-Like Pattern of Myocardial and Liver Iron Loading in Regularly Polytransfused Thalassaemia Patients**
Antonella Meloni[1], Paolo Ricchi[2], Paolo Preziosi[3], Vincenzo Positano[1], Maria Chiara Resta[4], Gennaro Restaino[5], Antonino Vallone[6], Maria Giovanna Neri[1], Graziella Filati[7], Anna Pietrapertosa[8], Petra Keilberg[1], Alessia Pepe[1]
[1]CMR Unit, Fondazione G. Monasterio CNR-Regione Toscana, Pisa, Italy; [2]UOSD Centro per le Microcitemie, AORN Cardarelli, Napoli, Italy; [3]U.O.C. Diagnostica per Immagini e Interventistica, Policlinico "Casilino", Roma, Italy; [4]Struttura Complessa di Radiologia, OSP. SS. Annunziata ASL Taranto, Taranto, Italy; [5]Istituto di Radiologia, Università Cattolica del Sacro Cuore, Campobasso, Italy; [6]Istituto di Radiologia, Az. Osp. "Garibaldi" Presidio Ospedaliero Nesima, Catania, Italy; [7]Pediatria, Ospedale "G. Da Saliceto", Piacenza, Italy; [8]Policlinico di Bari, Servizio Regionale Talassemie, Bari, Italy

Computer 20 **4084.** **Measuring the Unsaturation Index in Red and Yellow Bone Marrow Using ^{1}H MR Spectroscopy**
Alessandra Bierwagen[1, 2], Bettina Nowotny[1, 2], Julia Szendroedi[1, 3], Karsten Müssig[1, 3], Michael Roden[1, 3], Jesper Lundbom[1, 2]
[1]Institute for Clinical Diabetology, German Diabetes Center, Leibniz Institute for Diabetes Research, Heinrich Heine University, Duesseldorf, Germany; [2]German Center for Diabetes Research (DZD e.V.), Partner Düsseldorf, Duesseldorf, Germany; [3]Department of Endocrinology and Diabetology, University Hospital Duesseldorf, Germany

Computer 21 **4085.** **Magnetic Resonance Spectroscopy of Breast Cancer Using the SLIM Technique – Initial Results**
Patrick J. Bolan[1, 2], Steen Moeller[1], Gregory J. Metzger[1, 2], Michael Garwood[1, 2], Douglas Yee[2, 3], Michael T. Nelson[1, 2]
[1]Radiology, University of Minnesota, Minneapolis, MN, United States; [2]Masonic Cancer Center, University of Minnesota, Minneapolis, MN, United States; [3]Medicine, University of Minnesota, Minneapolis, MN, United States

Computer 22 **4086.** **Investigation of 3D Lava-Flex in Fat Fraction Estimation for Patients with Hepatic Iron-Overloading**
Tianyong Xu[1], Qian Jiang[1], Bing Wu[1], Kai Xu[2], Zhenyu Zhou[1]
[1]GE Healthcare China, Beijing, China; [2]The Affiliated Hospital of Xuzhou Medical College, Xuzhou, Jiangsu, China

Computer 23 **4087.** **Visualization of Pancreas in Rats Using Clinical MRI and CT: From in Situ to *In Vivo***
Ting Yin[1], Walter Coudyzer[2], Ronald Peeters[2], Yewei Liu[1], Marlein M. Cona[1], Yuanbo Feng[1], Jie Yu[2], Steven Dymarkowski[2], Raymond Oyen[2], Yicheng Ni[1, 2]
[1]Theragnostic Laboratory, KULeuven, Leuven, Flemish Brabant, Belgium; [2]Department of Radiology, KULeuven, Leuven, Flemish Brabant, Belgium

Computer 24 **4088.** **Pitfalls of the Piggyback**
Marina-Portia Anthony[1], Stuart Bentley-Hibbert[1], Anuradha S. Shenoy-Bhangle[1], Elizabeth Hecht[1], Benjamin Samstein[2], Martin R. Prince[1]
[1]Abdominal Division, Department of Radiology, Columbia University Medical Center, New York, NY, United States; [2]Department of Surgery, Columbia University Medical Center, New York, NY, United States

Electronic Poster
Hepatobiliary II

Exhibition Hall Wednesday 11:00-12:00

Computer 25 4089. Non-Gated Single Breath-Hold MR Cholangiopancreatography (MRCP) with 3D BSSFP: Comparison with Respiratory Gated 3D FSE

Akiyoshi Yamamoto[1], Hiroki Matoba[1], Yuji Shintani[1], Daiji Uchiyama[1], Seigo Yoshida[1], Katsumi Nakamura, [12], Mitsue Miyazaki[3]
[1]Radiology, Tobata Kyoritsu Hospital, Kitakyusyu, Fukuoka, Japan; [2]Radiology, Hikari Central Hospital, Hikari, Yamaguchi, Japan; [3]Toshiba Medical Research Institute USA, Vernon Hills, IL, United States

Computer 26 4090. Intravoxel Incoherent Motion MR Imaging in Evaluation of Focal Malignant Liver Masses: Compare with Apparent Diffusion Coefficient

Jinrong QU[1], Xiang Li[1], lifeng wang[1], Junpeng Luo[1], Cuicui Liu[1], Hailiang Li[1]
[1]Radiology, the Affiliated Cancer Hospital of Zhengzhou University, Henan Cancer Hospital, Zhengzhou, HENAN, China

Computer 27 4091. Postprandial Changes of Secretory Flow of Pancreatic Juice in the Main Pancreatic Duct: Evaluation with Cine Dynamic MRCP and a Spatially Selective Inversion Recovery (IR) Pulse

Kazuya Yasokawa[1], Akira Yamamoto[1], Tsutomu Tamada[1], Akihiko Kanki[1], Atsushi Higaki[1], Yasufumi Noda[1], Katsuyoshi Ito[1]
[1]Radiology, Kawasaki Medical School, Kurashiki, Okayama, Japan

Computer 28 4092. Primary Study of MR Diffusion Tensor Imaging in Hepatocellular Carcinomas

xinghui li[1], xiaoming zhang[2], jiani hu[3]
[1]Department of Radiology, Affiliated Hospital of North Sichuan Medical College, nanchong, sichuan, China; [2]Department of Radiology, Affiliated Hospital of North Sichuan Medical College, sichuan, China; [3]Department of Radiology, Wayne State University,, MI, United States

Computer 29 4093. Differentiation of Malignant Thrombus from Bland Thrombus of the Portal Vein in Patients with Cirrhosis: Application of Intravoxel Incoherent Motion Diffusion-Weighted MR Imaging

Eun-Suk Cho[1], Dahye Lee[1], Jeong-Sik Yu[1]
[1]Radiology, Yonsei University College of Medicine, Gangnam Severance Hospital, Seoul, Korea

Computer 30 4094. Diffusion Tensor Imaging (DTI) in Liver Fibrosis with Minimal Confounding Effect of Hepatic Steatosis

Yunjung Lee[1], Hyeonjin Kim[1, 2]
[1]Radiology, Seoul National University Hospital, Seoul, Korea; [2]Biomedical Sciences, Seoul National University, Seoul, Korea

Computer 31 4095. Characterize Hepatocellular Carcinoma with IVIM-DWI and DCE-MRI in Combination: Preliminary Experience

Lifen Xie[1, 2], Changhong Liang[1], Zaiyi Liu[1], Queenie Chan[3], Yingjie Mei[4]
[1]Department of Radiology, Guangdong Academy of Medical Sciences/Guangdong General Hospital, Guangzhou, Guangdong, China; [2]Southern Medical University, Guangzhou, Guangdong, China; [3]Philips Healthcare, HK, China; [4]Philips Healthcare, Guangzhou, Guangdong, China

Computer 32 4096. Diffusion-Weighted Imaging in Autoimmune Pancreatitis: Which Variable Is Most Useful for Differentiation from Pancreatic Cancer?

Yasunari Fujinaga[1], Masaaki Takahashi[1], Akira Fujita[1], Sachie Fujita[1], Shin Yanagisawa[1], Hideaki Hamano[2], Shigeyuki Kawa[3], Masumi Kadoya[1]
[1]Department of Radiology, Shinshu University, School of Medicine, Matsumoto, Nagano, Japan; [2]Department of Gastroenterology, Shinshu University Hospital, Matsumoto, Nagano, Japan; [3]Center for Health, Safety, and Environmental Management, Shinshu University, Matsumoto, Nagano, Japan

Computer 33 4097. Correlation of Diffusion Weighted Imaging and Apparent Diffusion Coefficient Values of Pancreatic Ductal Adenocarcinoma (PDAC) with Clinicopathological Features and Overall Survival.

John J. Hermans[1], Deniece Riviere[1], Marnix Maas[1], Monica Van Zanten[2], Tanya Bisseling[3], Martin Gotthardt[1], Kees Van Laarhoven[4]

[1]Radiology and Nuclear Medicine, Radboud University Medical Center, Nijmegen, Gelderland, Netherlands; [2]Pathology, Radboud University Medical Center, Nijmegen, Gelderland, Netherlands; [3]Gastroenterology and Hepatology, Radboud University Medical Center, Nijmegen, Gelderland, Netherlands; [4]Surgery, Radboud University Medical Center, Nijmegen, Gelderland, Netherlands

Computer 34 **4098. Reproducibility of ADC in Colorectal Liver Metastases at 3T: A Cross-Vendor Evaluation**
Sabrina Doblas[1], Philippe Garteiser[1], Vincent Barrau[2, 3], Magaly Zappa[1, 2], Valérie Vilgrain[1, 2], Bernard E. Van Beers[1, 2]
[1]U1149 - CRI, INSERM, Paris, France; [2]Radiology, Beaujon Hospital, Clichy, France; [3]CCN, Saint-Denis, France

Computer 35 **4099. Histogram Analysis of Apparent Diffusion Coefficient in Differentiating Pancreatic Adenocarcinoma and Neuroendocrine Tumor**
YOSHIHIKO FUKUKURA[1], Toshikazu Shindo[1], Tomokazu Umanodan[1], Tomoyuki Okuaki[2], Koji Takumi[1], Aya Umanodan[1], Junichi Ideue[1], Hiroto Hakamada[1], Kiyohisa Kamimura[1], Masanori Nakajo[1], Takashi Yoshiura[1]
[1]Kagoshima University Graduate School of Medical and Dental Sciences, Kagoshima, Japan; [2]Philips Healthcare, Tokyo, Japan

Computer 36 **4100. Qualitative and Quantitative Assessment of Intrahepatic Cholangiocarcinoma Using Diffusion Weighted Imaging with Histopathologic Correlation: Preliminary Results from a Bi-Center Series.**
Sara C. Lewis[1], Shingo Kihira[1], Cecilia Besa[2], Hongfa Zhu[3], Swan Thung[3], Kartik Jhaveri[4], Bachir Taouli[5]
[1]Radiology, Mount Sinai Medical Center, New York, NY, United States; [2]Translational and Molecular Imaging Institute, Mount Sinai Medical Center, New York, NY, United States; [3]Pathology, Mount Sinai Medical Center, New York, NY, United States; [4]Radiology, University Health Network Mt. Sinai and Womens' College Hospital, Toronto, Ontario, Canada; [5]Radiology, Translational and Molecular Imaging Institute, Mount Sinai Medical Center, New York, NY, United States

Computer 37 **4101. Intra-Session and Inter-Session Repeatability of Diffusion Tensor Measurement in Normal Human Liver**
Oi Lei Wong[1], Gladys Goh Lo[2], Wing Wa Li[2], Jing Yuan[3], Raymond Lee[2], Michael D. Noseworthy[4]
[1]Department of Medical Physics and Applied Radiation Science, McMaster University, Hamilton, Ontario, Canada; [2]Department of Diagnostic & Interventional Radiology, Hong Kong Sanatorium & Hospital, Hong Kong, China; [3]Medical Physics and Research Department, Hong Kong Sanatorium & Hospital, Hong Kong, China; [4]Department of Electrical and Computer Engineering, McMaster Univeristy, Hamilton, Ontario, Canada

Computer 38 **4102. Pilot Study of Liver Metastases Imaging with Administration of Ferumoxytol**
Young Kon Kim[1, 2], Peng Hu[1], Daniel Margolis[1], Steven Raman[1], David Lu[1], J. Paul Finn[1], Kyunghyun Sung[1]
[1]Radiological Sciences, University of California, Los Angeles, Los Angeles, CA, United States; [2]Radiology, Samsung Medical Center, Seoul, Korea

Computer 39 **4103. Gadoxetic Acid Enhanced MRI for Diagnosis of Focal Nodular Hyperplasia and Hepatocellular Adenoma: A Systematic Review.**
Matthew DF McInnes[1, 2], Rebecca M. Hibbert[1], Joao Inacio[1], Nicola Schieda[1]
[1]Radiology, University of Ottawa, Ottawa, Ontario, Canada; [2]Ottawa Hospital Research Institute, Ottawa, Ontario, Canada

Computer 40 **4104. Feasibility of 10-Minute Delayed Hepatocyte Phase Imaging with 30° Flip Angle in Gd-EOB-DTPA-Enhanced MRI for Detection of Hepatocellular Carcinoma, Compared to 20-Minute Delayed Hepatocyte Phase Imaging**
Inhwan Jeon[1], Dahye Lee[1], Eun-Suk Cho[1], Jeong-Sik Yu[1]
[1]Radiology, Yonsei University College of Medicine, Gangnam Severance Hospital, Seoul, Korea

Computer 41 **4105. Multiple Flip Angle Measurement to Quantify Hepatic Uptake of Gadoxetic Acid in MRI**
Alexander Ciritsis[1], Daniel Truhn[1], Nils Krämer[1], Christiane K. Kuhl[1]
[1]Department of Diagnostic and Interventional Radiology, RWTH University Hospital Aachen, Aachen, NRW, Germany

Computer 42 **4106. Intra-Individual Crossover Comparison of Dose of Gadoxetic Acid for Liver MRI: Parameter Optimization and Quantitative Relaxometry in Normal Volunteers**
Utaroh Motosugi[1, 2], Peter Bannas[1, 3], Diego Hernando[1], Mahdi Salmani Rahimi[4, 5], James H. Holmes[6], Scott B. Reeder[1, 7]
[1]Radiology, University of Wisconsin, Madison, WI, United States; [2]Radiology, University of Yamanashi, Chuo-shi, Yamanashi, Japan; [3]Radiology, University Hospital Hamburg-Eppendorf, Humburg, Germany; [4]Biomedical Engineering, University of Wisconsin,

Madison, WI, United States; [5]Radiology, Stanford University, Stanford, Calfornia, United States; [6]5Global MR Applications and Workflow, GE Healthcare, Madison, WI, United States; [7]Medical Physics, University of Wisconsin, Madison, WI, United States

Computer 43 **4107. LI-RADS Lexicon for MR Imaging: Interreader Variability Based on the Major Features in Patients with Liver Cirrhosis Induced by HBV Infection**

Ke Wang[1], Xiaochao Guo[1], Xuedong Yang[1], Xiaoying Wang[1]
[1]Radiology Department, Peking University First Hospital, Beijing, China

Computer 44 **4108. Prospective Radiology-Pathology Correlation of DCE-MRI Derived Parameters as Quantitative Biomarker of Vascularity and Fibrosis in Pancreatic Cancer**

Michael Z. Liu[1], Sachin Jambawalikar[1], Helen R. Remotti[1], Stuart W. Weisberg[1], Pascal Spincemaille[2], Henry Rusinek[3], Artem V. Mikheev[3], Martin Prince[1], Donald Garmon[1], Yanghee Woo[1], John Chabot[1], Elizabeth M. Hecht[1]
[1]Columbia University, New York, NY, United States; [2]Cornell University, NY, United States; [3]New York University, NY, United States

Computer 45 **4109. Free-Breathing Dynamic Contrast MR Imaging Using DISCO with Navigator Technique for the Pancreatobiliary Regions**

Takayuki Masui[1], Motoyuki Katayama[1], Yuji Iwadate[2], Naoyuki Takei[2], Kang Wang[3], Dan Rettmann[3], Kimihiko Sato[1], Kei Tsukamoto[1], Kenichi Mizuki[1], Maho Hayashi[1], Masayoshi Sugimura[1]
[1]Radiology, Seirei Hamamatsu General Hospital, Hamamatsu, Shizuoka, Japan; [2]Global MR Applications and Workflow, GE Healthcare Japan, Hino, Tokyo, Japan; [3]Global MR Applications and Workflow, GE Healthcare, WI, United States

Computer 46 **4110. Respiratory Motion-Resolved Compressed Sensing Reconstruction of Free-Breathing Radial Acquisition for Improved Dynamic Liver MRI with Hepatobiliary Contrast Agent**

Hersh Chandarana[1, 2], Li Feng[1, 3], Justin Ream[1], Annie Wang[1], James Babb[1], Kai Tobias Block[1, 3], Mary Bruno[1], Daniel K. Sodickson[1, 3], Ricardo Otazo[1, 3]
[1]Radiology, Center for Biomedical Imaging, NYU School of Medicine, New York, NY, United States; [2]Radiology, Center for Advanced Imaging Innovation and Research (CAI2R) , NYU School of Medicine, New York, NY, United States; [3]Radiology, Center for Advanced Imaging Innovation and Research (CAI2R), NYU School of Medicine, New York, NY, United States

Computer 47 **4111. Application of Golden Angle Radial 3D Gradient Echo with K-Space Weighted Image Contrast (KWIC) for Motion-Insensitive Hepatic Arterial-Phase Imaging: Initial Experience**

Puneet Sharma[1], Kevin Johnson[2], Alto Stemmer[3], Bobby Kalb[1], Diego R. Martin[1]
[1]Medical Imaging, University of Arizona, Tucson, AZ, United States; [2]Siemens Healthcare, Tucson, AZ, United States; [3]Siemens Healthcare, Erlangen, Germany

Computer 48 **4112. Dynamic Contrast Enhanced-MRI of the Liver Using Automated Navigator Tracker and Prospective Navigator Correction**

Takao Goto[1], Shiro Ozaki[2], Yuji Iwadate[3], Kunihiro Miyoshi[1], Koji Uchida[4], Hajime Kitagaki[4], Hiroyuki Kabasawa[3]
[1]MR Engineering, GE Healthcare, Hino-shi, Tokyo, Japan; [2]Shimane University Hospital, Izumo-shi, Shimane, Japan; [3]Global MR Applications and Workflow, GE Healthcare, Hino-shi, Tokyo, Japan; [4]Department of Radiology, Shimane University Faculty of Medicine, Izumo-shi, Shimane, Japan

Electronic Poster
Gastrointestinal MRI, Diabetes, Nutrition, Metabolism, Hepatobiliary

Exhibition Hall Wednesday 11:00-12:00

Computer 49 **4113. Mapping Murine Diabetic Nephropathy: QMT, CEST and Fat Imaging**

Feng Wang[1, 2], Ke Li[1, 2], Keiko Takahashi[3, 4], E. Brian Welch[1, 2], Zhongliang Zu[1, 2], Daniel Gochberg[1, 2], Raymond C. Harris[3, 5], C. Chad Quarles[1, 2], Takamune Takahashi[3, 5], John C. Gore[1, 2]
[1]Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [2]Institute of Imaging Sciences, Vanderbilt University, Nashville, TN, United States; [3]Vanderbilt O'Brien Mouse Kidney Physiology and Disease Center, Vanderbilt University, TN, United States; [4]Division of Nephrology and Hypertension, Vanderbilt University , TN, United States; [5]Division of Nephrology and Hypertension, Vanderbilt University, TN, United States

Computer 50 **4114. Effects of a Western Diet on Fetal Organ Development and Fat Deposition Using MRI of Fetal Guinea Pigs**

ISMRM MERIT AWARD magna cum laude

Kevin J. Sinclair[1], Lanette J. Friesen-Waldner[1], Colin M. McCurdy[1], Curtis N. Wiens[2], Trevor P. Wade[1, 3], Barbra de Vrijer[4], Timothy RH Regnault[4, 5], Charles A. McKenzie[1, 3]
[1]Medical Biophysics, University of Western Ontario, London, Ontario, Canada; [2]Radiology, University of Wisconsin, Madison, WI, United States; [3]Robarts Research Institute, University of Western Ontario, London, Ontario, Canada; [4]Obstetrics and Gynaecology, University of Western Ontario, London, Ontario, Canada; [5]Physiology and Pharmacology, University of Western Ontario, London, Ontario, Canada

Computer 51 **4115. Alterations in the Hepatic Lipid Profile of Mice Following Streptozotocin-Induced Diabetes**

Ana Francisca Soares[1], Hongxia Lei[2], Rolf Gruetter[1]
[1]LIFMET, EPFL, Lausanne, Vaud, Switzerland; [2]Radiology, University of Geneva, Geneva, Switzerland

Computer 52 **4116. Quantification of Hepatic Blood Flow in Obese Patients Using 4D-Flow MRI**

Alejandro Roldán-Alzate[1], Curtis N. Wiens[1], Kevin M. Johnson[2], Alan B. Mcmillan[1], Oliver Wieben[1, 2], Claude Sirlin[3], Scott B. Reeder[1, 2]
[1]Radiology, University of Wisconsin - Madison, Madison, WI, United States; [2]Medical Physics, University of Wisconsin - Madison, Madison, WI, United States; [3]Radiology, University of California San Diego, San Diego, CA, United States

Computer 53 **4117. Bone Marrow Fat Behaves Differently from Abdominal Fat, Liver Fat and Serum Lipids After a Four-Week Calorie Restriction in Obese Women**

Christian Cordes[1], Michael Dieckmeyer[1], Beate Ott[2], Jun Shen[1], Stefan Ruschke[1], Marcus Settles[1], Claudia Eichhorn[2], Jan S. Bauer[1], Hendrik Kooijman[3], Ernst J. Rummeny[1], Thomas Skurk[2], Thomas Baum[1], Hans Hauner[2], Dimitrios C. Karampinos[1]
[1]Diagnostic and Interventional Radiology, Technische Universität München, München, Germany; [2]Else Kröner Fresenius Center for Nutritional Medicine, Technische Universität München, München, Germany; [3]Phillips Healthcare, Hamburg, Germany

Computer 54 **4118. Relationship Between Liver Proton Density Fat Fraction and R2* in the Absence of Iron Overload**

Diego Hernando[1], William M. Haufe[2], Catherine A. Hooker[2], Alexandra Schlein[2], Tanya Wolfson[3], Nathan S. Artz[1, 4], Scott B. Reeder[1, 5], Claude B. Sirlin[2]
[1]Radiology, University of Wisconsin-Madison, Madison, WI, United States; [2]Radiology, University of California, San Diego, San Diego, CA, United States; [3]Computational and Applied Statistics Laboratory, University of California, San Diego, San Diego, CA, United States; [4]Radiological Sciences, Saint Jude Children's Research Hospital, Memphis, TN, United States; [5]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States

Computer 55 **4119. Optimization of Ectopic Lipids Determination in Kidneys by MRS and Preliminary Results in Obese Diabetic Patients.**

Gaëlle Diserens[1], Maryam Seif[1], Laila Yasmin Mani[2], Daniel Fuster[2], Christoph Stettler[3], Chris Boesch[1], Bruno Vogt[2], Peter Vermathen[1]
[1]Depts. Radiology and Clinical Research, University Bern, Bern, Switzerland; [2]Dept. Nephrology, Hypertension and Clinical Pharmacology, University Hospital Of Bern, Bern, Switzerland; [3]Division of Endocrinology, Diabetes and Clinical Nutrition, Inselspital Bern, Bern, Switzerland

Computer 56 **4120. Modulation of Ectopic Fat and SCD Activity During Weight Loss Interventions in High Saturated Fat Diet Induced Obese Rats by *In-Vivo* MRS and LC-MS**

Venkatesh Gopalan[1], Navin Michael[2], S S. Lee[1], Yaligar J[1], Bhanu Prakash KN[1], S Sendhil Velan[1]
[1]Singapore Bio-Imaging Consortium, BioMedical Sciences Institutes, Singapore, Singapore; [2]Singapore Institute for Clinical Sciences, Singapore, Singapore

Computer 57 **4121. Modulation of the Abdominal and Hepatic Fat by Adipose-Specific Fat-Storage Inducing Transmembrane2 (FIT2) Protein**

Jadegoud Yaligar[1], Bhanu Prakash KN[1], Brayn Tan[2], Swee Shean Lee[1], Venkatesh Gopalan[1], David Lawrence Silver[2], S Sendhil Velan[1]
[1]Laboratory of Molecular Imaging, Singapore Bioimaging Consortium, Singapore, Singapore; [2]Signature Research Program in Cardiovascular & Met, Duke-NUS Graduate Medical School Singapore, Singapore, Singapore

Computer 58 4122. Metabolic Adaptations Induced by Medium Chain Triglycerides in a Rat Model of Diabetes Measured by *In Vivo* Magnetic Resonance Spectroscopy

Lihong Jiang[1], Zejian Liu[2], Bei Wang[1], Greame Mason[1, 3], Douglas Rothman[1], Raimund Herzog[2]
[1]Diagnostic Radiology, Yale University School of Medicine, New Haven, CT, United States; [2]Internal Medicine, Yale University School of Medicine, New Haven, CT, United States; [3]Psychiatry, Yale University School of Medicine, New Haven, CT, United States

Computer 59 4123. Intranasal Insulin Improves Energy Metabolism in Humans

Alessandra Bierwagen[1, 2], Sofiya Gancheva[1, 2], Chrysi Koliaki[1, 2], Peter Nowotny[1, 2], Jesper Lundbom[1, 2], Martin Heni[3, 4], Andreas Fritsche[3, 4], Hans-Ulrich Häring[3, 4], Julia Szendroedi[1, 5], Michael Roden[1, 5]
[1]Institute for Clinical Diabetology, German Diabetes Center, Leibniz Institute for Diabetes Research, Heinrich Heine University, Duesseldorf, Germany; [2]German Center for Diabetes Research (DZD e.V.), Partner Düsseldorf, Duesseldorf, Germany; [3]Department of Internal Medicine, Division of Endocrinology, Diabetology, Angiology, Nephrology and, Eberhard Karls University, Tübingen, Germany; [4]Institute for Diabetes Research and Metabolic Diseases of the Helmholtz Center Munich at the Univer, Germany; [5]Department of Endocrinology and Diabetology, University Hospital, Duesseldorf, Germany

Computer 60 4124. Non-Invasive Longitudinal Study of an MRI Biomarker for the Quantification of Colon Inflammation in a Mouse Model of Colitis

Andrea Bianchi[1], Teresa Bluhmki[1], Tanja Schoenberger[2], Andrea Vögtle[1], David Kind[1], Eric Kaaru[1], Michael Neumaier[1], Birgit Stierstorfer[2], Thomas Kaulisch[1], Detlef Stiller[1]
[1]Targeting Discovery Research, In vivo imaging laboratory, Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach an der Riss, Baden-Württemberg, Germany; [2]Targeting Discovery Research, Target Validation Technologies, Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach an der Riss, Baden-Württemberg, Germany

Computer 61 4125. Diffusion-Weighted Magnetic Resonance Imaging for the Prediction of Response to Neoadjuvant Chemoradiotherapy in Esophageal Cancer.

Peter S.N. van Rossum[1, 2], Astrid L.H.M.W. van Lier[1], Marco van Vulpen[1], Onne Reerink[1], Steven H. Lin[3], Richard van Hillegersberg[2], Jelle P. Ruurda[2], Gert J. Meijer[1], Irene M. Lips[1]
[1]Department of Radiotherapy, University Medical Center Utrecht, Utrecht, Netherlands; [2]Department of Surgery, University Medical Center Utrecht, Utrecht, Netherlands; [3]Department of Radiation Oncology, The University of Texas MD Anderson Cancer Center, Houston, TX, United States

Computer 62 4126. Metastatic Hepatic Neuroendocrine Tumors: Correlation of Quantitative Diffusion and Dynamic Contrast Enhanced MRI with Tumor Grade

Cecilia Besa[1], Stephen Ward[2], Yong Cui[3], Guido Jajamovich, Michelle Kim[4], Bachir Taouli
[1]Radiology, Icahn School of Medicine at Mount Sinai, New York, NY, United States; [2]Pathology, Icahn School of Medicine at Mount Sinai, NY, United States; [3]Radiology, Peking University Cancer Hospital & Beijing Cancer Hospital, Beijing, China; [4]Surgery, Icahn School of Medicine at Mount Sinai, NY, United States

Computer 63 4127. Reproducibility of Intravoxel Incoherent Motion Diffusion-Weighted Imaging in Small Bowel Crohn¡¯s Disease

Lianhua Huang[1], Yihao Guo[2], Yingjie Mei[3], Lizhi Zhou[4], Zeyu Zheng[1], Yanqiu Feng[5], Xinying Wang[6], Jie Feng[1], Chenggong Yan[1], Yikai Xu[1]
[1]Department of Medical Imaging Center, Nanfang Hospital, Southern Medical University, Guangzhou, Guangdong, China; [2]School of Biomedical Engineering, Southern Medical University, Guangzhou, Guangdong, China; [3]Philips healthcare, Guangdong, China; [4]Department of Biostatistics, School of Public Health and Tropical Medicine, Southern Medical University, Guangzhou, Guangdong, China; [5]Guangdong Provincial Key Laboratory of Medical Image Processing, School of Biomedical Engineering, Southern Medical University, Guangzhou, Guangdong, China; [6]Department of Gastroenterology, Nanfang Hospital, Southern Medical University, Guangzhou, Guangdong, China

Computer 64 4128. Perianal Imaging in Pediatric IBD - 1.5T Versus 3T

Mary-Louise C. Greer[1, 2], Zehour Alsabban[1], Ryan Lo[3], Rahim Moineddin[4], Peter Church[5], Thomas D. Walters, [35], Jacob C. Langer, [36], Anne Griffiths, [35]
[1]Diagnostic Imaging, The Hospital for Sick Children, Toronto, Ontario, Canada; [2]Medical Imaging, University of Toronto, Toronto, Ontario, Canada; [3]University of Toronto, Ontario, Canada; [4]Department of Family and Community Medicine, Dalla Lana School of Public Health University of Toronto, Ontario, Canada; [5]Gastroenterology, Hepatology and Nutrition, The Hospital for Sick Children, Ontario, Canada; [6]Division of General Surgery, The Hospital for Sick Children, Ontario, Canada

Computer 65 **4129.** **Experimental Stress Constricts Small Bowel and Increases Ascending Colon Volume in Healthy Subjects**
Susan E. Pritchard[1], Klara C. Garsed[2], Caroline L. Hoad[1], Melanie Lingaya[3], R Banwait[3], W Thongborisute[3], E Roberts[3], Carolyn Costigan[1, 3], Luca Marciani[2, 3], Robin C. Spiller[2, 3], Penny A. Gowland[1]
[1]Sir Peter Mansfield Imaging Centre, University of Nottingham, Nottingham, Notts, United Kingdom; [2]Nottingham Digestive Diseases Biomedical Research Unit, Nottingham University Hospitals, Nottingham, Notts, United Kingdom; [3]Nottingham Digestive Diseases Centre, School of Clinical Sciences, University of Nottingham, Nottingham, Notts, United Kingdom

Computer 66 **4130.** **The Application of 3.0T MR Intravoxel Incoherent Motion Imaging in Diagnosing of Rectal Carcinoma**
Lin Qiu[1], Xiang-ran Cai[1], Si-run Liu[1], You-zhen Feng, Chang-yu Guo[2]
[1]Medical Imaging Center, the First Affiliated Hospital of Jinan University, Guangzhou, Guangdong, China; [2]Medical Imaging Center, Centro Hospitalar Conde de São Januário, Macau, China

Computer 67 **4131.** **Preoperative Apparent Diffusion Coefficient Value of Gastric Cancer by Diffusion-Weighted Imaging: Correlations with Postoperative TNM Staging**
Zhengyang Zhou[1], Song Liu[1], Jian He[1], Wenxian Guan[2]
[1]Radiology, Affiliated Drum Tower Hospital,School of Medicine,Nanjing University, Nanjing, Jiangsu, China; [2]Gastrointestinal Surgery, Affiliated Drum Tower Hospital,School of Medicine,Nanjing University, Nanjing, Jiangsu, China

Computer 68 **4132.** **Apparent Diffusion Coefficient Value of Gastric Cancer by Diffusion-Weighted Imaging: Correlations with the Histologic Differentiation and Lauren Classification**
Zhengyang Zhou[1], Song Liu[1], Jian He[1], Wenxian Guan[2]
[1]Radiology, Drum Tower Hospital, School of Medicine, Nanjing University, Nanjing, Jiangsu, China; [2]Gastrointestinal Surgery, Drum Tower Hospital, School of Medicine, Nanjing University, Nanjing, Jiangsu, China

Computer 69 **4133.** **Feasibility and Preliminary Experience of a Diffusional Kurtosis Model for Detection of Rectal Cancer**
cao xi sheng[1], chen yunbin[1, 2], cai linfeng[1], wei wei[1], hu chunmiao[1], chen weibo[3]
[1]Radiology, Fujian Provincial Cancer Hospital, FUZHOU, FUJIAN, China; [2]Fujian Medical University , FUJIAN, China; [3]Philips Healthcare, shanghai, China

Computer 70 **4134.** **Accelerated 4D MRI for Investigating Release and Dispersion of an Ingested Drug Model Inside the Human Stomach**
Vlad Ceregan[1], Jelena Curcic[1, 2], Sebastian Kozerke[1], Andreas Steingoetter[1, 2]
[1]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [2]Division of Gastroenterology and Hepatology, University Hospital Zurich, Zurich, Switzerland

Computer 71 **4135.** **Prospective Evaluation of Contrast-Enhanced MRI for Non-Traumatic, Non-Appendicitis Acute Abdomen with Direct Comparison to MDCT**
Candice A. Bookwalter[1], Michael D. Repplinger[1, 2], Perry J. Pickhardt[1], Jessica B. Robbins[1], Timothy J. Ziemlewicz[1], Douglas Kitchin[1, 3], Scott B. Reeder[1, 4]
[1]Department of Radiology, University of Wisconsin-Madison, Madison, WI, United States; [2]Department of Emergency Medicine, University of Wisconsin-Madison, Madison, WI, United States; [3]St. Mary's Hospitals, Madison, WI, United States; [4]Department of Medical Physics, University of Wisconsin-Madison, Madison, WI, United States

Computer 72 **4136.** **Autocorrelation Analysis of Hepatic Fibrosis on MRI**
Jonathan F. Brand[1], Lars R. Furenlid[1, 2], Maria I. Altbach[2], Jean-Philippe Galons[2], Tulshi Bhattacharyya[2], Achuyt Bhattacharyya[3], Ali Bilgin[2, 4], Zhitao Li[4], Diego R. Martin[2]
[1]College of Optical Sciences, University of Arizona, Tucson, AZ, United States; [2]Department of Medical Imaging, University of Arizona, Tucson, AZ, United States; [3]Department of Pathology, University of Arizona, Tucson, AZ, United States; [4]Electrical and Computer Engineering, University of Arizona, Tucson, AZ, United States

Electronic Poster
MR-Guided Inteventions

Exhibition Hall Wednesday 11:00-12:00

Computer 73 4137. Benefits, Limitations, and Improving the Future of MRI-Guided Endovascular Catheter Tracking

ISMRM MERIT AWARD magna cum laude

Nicholas Whiting[1], Jingzhe Hu[1, 2], Pratip Bhattacharya[1]
[1]Cancer Systems Imaging, The University of Texas MD Anderson Cancer Center, Houston, TX, United States; [2]Department of Bioengineering, Rice University, Houston, TX, United States

Computer 74 4138. Interventional MRI-Guided Local Delivery of Agents Into Swine Bile Duct Walls Using MR Compatible Needle-Integrated Balloon Catheter System

Feng Zhang[1], Zhibin Bai[1], Yaoping Shi[1], Jianfeng Wang[1], Longhua Qiu[1], Yonggang Li[1], Xiaoming Yang[1]
[1]Radiology, University of Washington, SEATTLE, WA, United States

Computer 75 4139. MR-Guided Treatment of Low-Flow Vascular Malformations

Clifford R. Weiss[1], Daniel M. O'Mara[2], Paul A. DiCamillo[2], Di Xu[3], Wesley D. Gilson[4], Daniel A. Herzka[3], Jonathan S. Lewin[2]
[1]Vascular and Interventional Radiology, The Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Department of Radiology, The Johns Hopkins University School of Medicine, Baltimore, MD, United States; [3]Department of Biomedical Engineering, The Johns Hopkins University School of Medicine, Baltimore, MD, United States; [4]Siemens Healthcare USA, Baltimore, MD, United States

Computer 76 4140. MRI Compatible-3D Localization System for Real-Time Catheter Navigation

Olivia Garandeau[1], Maxime Bories[1], Fabrice Marquet[1], Remi Dubois[2], Pierre Jais[3], Bruno Quesson[1]
[1]IHU Liryc/CRCTB Inserm U1045, University of Bordeaux, Pessac, Aquitaine, France; [2]IHU Liryc/CRCTB Inserm U1045, ESPCI Paris Tech, Pessac, Aquitaine, France; [3]CHU bordeaux, Pessac, Aquitaine, France

Computer 77 4141. *In Vivo* Assessment of Renal Artery Embolization Using a Magnetically Assisted Remote Controlled (MARC) Catheter

Prasheel Lillaney[1], Aaron D. Losey[1], Alastair J. Martin[1], Bradford RH Thorne[1], Leland B. Evans[1], Vincent Malba[1], Maythem Saeed[1], Ronald Arenson[1], Steven W. Hetts[1]
[1]Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States

Computer 78 4142. Imaging Assessment and Feasibility of a Hydrostatically Actuated Robotic System for Real-Time MRI-Guided Interventions

Samantha Mikaiel[1, 2], Rashid Yasin[3], Samuel Ross[4], M. Wasil Wahi-Anwar[1], James Simonelli[3], David Lu[2], Kyung Sung, [12], Tsu-Chin Tsao[3], Holden H. Wu, [12]
[1]Biomedical Physics, University of California Los Angeles, Los Angeles, CA, United States; [2]Radiological Sciences, University of California Los Angeles, Los Angeles, CA, United States; [3]Mechanical and Aerospace Engineering, University of California, Los Angeles, CA, United States; [4]Santa Monica College, Santa Monica, CA, United States

Computer 79 4143. Dynamic Scan Plane Control for Effective MRI-Guided Robotic Intervention

Mahamadou Diakite[1], Steve Roys[1], Yeongjin Kim[2], Taehoon Shin[1], Mark J. Simard[3], Jaydev P. Desai[2], Rao P. Gullapalli[1]
[1]Center for Metabolic Imaging and Therapeutics, Depart. of Diagnostic Radiology and Nuclear Medicine, University of Maryland, School of Medicine, Baltimore, MD, United States; [2]Mechanical Engineering, University of Maryland, College Park, MD, United States; [3]Neurosurgery, University of Maryland, School of Medicine, Baltimore, MD, United States

Computer 80 4144. Tactics: An Open-Source Platform for Planning Stereotactic Surgery

D. Adair[1, 2], K. S. Gomes[3], Y. P. Starreveld[3, 4], Z. H.T. Kiss[3], D. G. Gobbi[1, 4]
[1]Calgary Image Processing and Analysis Centre, Calgary, Alberta, Canada; [2]Biomedical Engineering, University of Calgary, Calgary, Alberta, Canada; [3]Clinical Neuroscience and Hotchkiss Brain Institute, University of Calgary, Calgary, Alberta, Canada; [4]Atamai Inc., Calgary, Alberta, Canada

Computer 81 4145. MR Guided CED of a Novel Therapeutic for Parkinson’s Disease: The Importance of Imaging Feedback

Alastair J. Martin[1], Krystof Bankiewicz[2], John Bringas[2], Chad Christine[3], Marin Thompson[2], Janine Beyer[2], Paul Larson[2]

[1]Radiology and Biomedical Imaging, UCSF, San Francisco, CA, United States; [2]Neurological Surgery, UCSF, San Francisco, CA, United States; [3]Neurology, UCSF, San Francisco, CA, United States

Computer 82 4146. Inducing Magnetic Torque Inside an MRI Scanner Using Pulsed Magnetic Gradients

ISMRM MERIT AWARD magna cum laude

Alexandre Bigot[1], Maxime Latulippe[1], Charles Tremblay[1], Sylvain Martel[1]
[1]Nanorobotics Laboratory, Polytechnique Montreal, Montreal, Quebec, Canada

Computer 83 4147. Characterization of Thermochemical Ablation Injections Using ^{23}Na MRI

Florian Maier[1], Erik N. K. Cressman[2], Moritz C. Berger[1], David Fuentes[3], R. Jason Stafford[3], Christopher J. MacLellan[3], Reiner Umathum[1], Armin M. Nagel[1]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany; [2]Interventional Radiology, The University of Texas MD Anderson Cancer Center, Houston, TX, United States; [3]Imaging Physics, The University of Texas MD Anderson Cancer Center, Houston, TX, United States

Computer 84 4148. Multinuclear (^{19}F + ^{1}H) MRI at 3T Using an Internal Probe

Shashank Sathyanarayana Hegde[1], Li Pan[2], Guan Wang[1, 3], Martin Radvany[1], Yingli Fu[1], Dara L. Kraitchman[1]
[1]Radiology, Johns Hopkins University, Baltimore, MD, United States; [2]Siemens Healthcare, Baltimore, MD, United States; [3]Electrical and Computer Engineering, Johns Hopkins University, MD, United States

Computer 85 4149. Near Infrared Optical Tomography at MR Resolution: Photo-Magnetic Imaging

Alex Luk[1], Yuting Lin[2], David Thayer[3], Seunghoon Ha[1], Gultekin Gulsen[1]
[1]UC Irvine, Irvine, CA, United States; [2]Harvard Medical School, MA, United States; [3]UC Irvine Medical, Irvine, CA, United States

Computer 86 4150. 3 Tesla MR-Guided Scalene Muscle Injections in Patients with Neurogenic Thoracic Outlet Syndrome

Jan Fritz[1], Margaret W. Arnold[2], Holly Grunebach[2], Kendall Likes[2], Jonathan S. Lewin[1], Ying W. Lum[2]
[1]Russell H. Morgan Department of Radiology and Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Department of Surgery, Johns Hopkins University School of Medicine, Baltimore, MD, United States

Computer 87 4151. Localization of an HDR Brachytherapy Source Using MR Artifact Simulation and Phase-Only Cross Correlation

Ellis Beld[1, 2], Marinus A. Moerland[1], Job G. Bouwman[2], Frank Zijlstra[2], Jan J.W. Lagendijk[1], Max A. Viergever[2], Peter R. Seevinck[2]
[1]Department of Radiotherapy, University Medical Center Utrecht, Utrecht, Netherlands; [2]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands

Computer 88 4152. Automatic Fiducial Detection in T2 Weighted MRI in a Manifold Learning and Gaussian Mixture Modeling Framework

S. Ghose[1], J. Mitra[1], D. Rivest Henault[1], A. Fazlollahi[1], P. Stanwell[2], P. Greer[3], P. Pichler[3], J. Fripp[1], J. Dowling[1]
[1]Australian e-Health Research Centre, CSIRO Digital Productivity Flagship, Herston, QLD, Australia; [2]University of Newcastle, NSW, Australia; [3]Department of Radiation Oncology, Calvary Mater Newcastle Hospital, NSW, Australia

Computer 89 4153. Exploring the Feasibility of the Coherent Half-FOV Replication Passive Tracking Technique for Controllable Susceptibility Devices in the Presence of Motion

Justin Y.C. Lau[1, 2], Jennifer Barry[2], William Dominguez-Viqueira[2]
[1]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [2]Physical Sciences, Sunnybrook Research Institute, Toronto, Ontario, Canada

Computer 90 4154. Real-Time Tracking for MR-Guided Breast Biopsies: Dream or Reality?

Robert D. Darrow[1], Mark Schneider[2], Eric W. Fiveland[1], Xiaofeng Liu[1], Ileana Hancu[1]
[1]Global Research Center, GE, Niskayuna, NY, United States; [2]NDI Ascension, Shelburne, VT, United States

Computer 91 4155. Impact of B1 Field Inhomogeneity on DESPOT-Based T1 and T2 Mapping at 1.5T

Yulia Shcherbakova[1], Cornelis A.T. van den Berg[1], Jan J.W. Lagendijk[1], Chrit T.W. Moonen[1], Lambertus W. Bartels[1]
[1]Imaging Division, University Medical Center, Utrecht, Netherlands

Computer 92 **4156. Carbon Fiber Needle for MRI-Guided Radiofrequency Ablation**
Jijun Han[1], Shuai Song[1], Bensheng Qiu[1]
[1]University of Science and Technology of China, Hefei, Anhui, China

Computer 93 **4157. Reducing Needle Induced Image Artifacts in Interventional MRI While Maintaining Soft Tissue Contrast**
Thomas Boyd Martin[1, 2], Holden Wu[1], Danny JJ. Wang[3], Kyung Sung[2]
[1]Biomedical Physics Interdepartmental Program, University of California Los Angeles, Los Angeles, CA, United States; [2]Radiological Sciences, University of California Los Angeles, Los Angeles, CA, United States; [3]Neurology, University of California Los Angeles, Los Angeles, CA, United States

Computer 94 **4158. Susceptibility-Based Positive-Contrast MRI for Interventional Devices**
Ying Dong[1], Guoxi Xie[2], Jim Xiuquan Ji[1]
[1]Department of Electrical and Computer Engineering, Texas A&M University, College Station, TX, United States; [2]Paul C. Lauterbur Research Center for Biomedical Imaging, Chinese Academy of Sciences, Shenzhen, Guangdong, China

Computer 95 **4159. Modulation of Magnetic Susceptibility Markers with Laser-Induced Demagnetization of Nickel Nanoparticles**
Hirad Karimi[1, 2], William Dominguez-Viqueira[2], Charles H. Cunningham[1, 2]
[1]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [2]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada

Computer 96 **4160. To Spoil or to Balance? a Comparison of the White Marker Phenomenon in Gradient Echo Pulse Sequences**
Simon Reiß[1], Axel Joachim Krafft[1, 2], Klaus Düring[3], Constantin von zur Mühlen[4], Michael Bock[1]
[1]Radiology - Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]German Cancer Consortium (DKTK), Heidelberg, Germany; [3]MaRVis Medical GmbH, Hannover, Germany; [4]Department of Cardiology and Angiology I, University Heart Center Freiburg, Germany

Electronic Poster
Cartilage Imaging - Technical Developments

Exhibition Hall Wednesday 13:30-14:30

Computer 1 **4161. Time Efficient and Quantitative Sodium Imaging at 7T Using Compressed Sensing Accelerated FID Spectroscopic Imaging**
Jetse van Gorp[1], Paul de Bruin[2], Peter Seevinck[1]
[1]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands; [2]Department of Radiology, Leiden University Medical Center, Leiden, Zuid-Holland, Netherlands

Computer 2 **4162. Four-Fold Reduction in Scan Time for Skeletal Age Examination Enabled by Adaptive Compressed Sensing MRI**
Yasuhiko Terada[1], Keiichiro Ishi[1], Daiki Tamada[1], Katsumi Kose[1], Taiki Nozaki[2], Yasuhito Kaneko[2], Ryo Miyagi[2], Hiroshi Yoshioka[2]
[1]Institue of Applied Physics, University of Tsukuba, Tsukuba, Ibaraki, Japan; [2]Department of Radiological Sciences, University of California Irvine, Irvine, CA, United States

Computer 3 **4163. 10 Minute Isotropic MRI of the Knee Using Accelerated 3D SPACE with Incoherent Undersampling and Iterative Reconstruction: Comparison with Standard 2D TSE MRI**
Jan Fritz[1], Gaurav Thawait[1], Shivani Ahlawat[1], Shadpour Demehri[1], Heiko Meyer[2], Wesley Gilson[3], Esther Raithel[2]
[1]Russell H. Morgan Department of Radiology and Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Healthcare Sector, Siemens AG, Erlangen, Bavaria, Germany; [3]Siemens Healthcare USA, Baltimore, MD, United States

Computer 4 **4164. Improving Slice Resolution of Knee Imaging Using Multiband Slice Accelerated TSE**
Dingxin Wang[1, 2], Chen Lin[3], Abraham Padua[4], Bruce Spottiswoode[5], Jutta Ellermann[2], Edward Auerbach[2], Kamil Ugurbil[2], Kenneth Buckwalter[3], Vibhas Deshpande[6]

[1]Siemens Healthcare, Minneapolis, MN, United States; [2]CMRR, Department of Radiology, University of Minnesota, Minneapolis, MN, United States; [3]Department of Radiology, University of Indiana, Indianapolis, IN, United States; [4]Siemens Healthcare, Houston, TX, United States; [5]Siemens Healthcare, Chicago, IL, United States; [6]Siemens Healthcare, Austin, TX, United States

Computer 5 **4165. Investigation of *In-Vivo* Relationship Between Cartilage Contact and Cartilage Quantitative MR Parameters**

Fang Liu[1], Jarred Kaiser[2], Walter F. Block[1, 3], Darryl G. Thelen[2, 3], Richard Kijowski[4]
[1]Department of Medical Physics, University of Wisconsin-Madison, Madison, WI, United States; [2]Department of Mechanical Engineering, University of Wisconsin-Madison, Madison, WI, United States; [3]Department of Biomedical Engineering, University of Wisconsin-Madison, Madison, WI, United States; [4]Department of Radiology, University of Wisconsin-Madison, Madison, WI, United States

Computer 6 **4166. A Comprehensive 7 Tesla MRI Protocol for Quantitative (T1-, T2-, T2*-Mapping) and Morphological Hip Cartilage Imaging**

Andrea Lazik[1, 2], Jens M. Theysohn[1], Stephan Orzada[2], Harald H. Quick[2, 3], Oliver Kraff[2]
[1]Department of Diagnostic and Interventional Radiology and Neuroradiology, University Hospital Essen, Essen, NRW, Germany; [2]Erwin L. Hahn Institute for Magnetic Resonance Imaging, University Duisburg-Essen, Essen, NRW, Germany; [3]High Field and Hybrid MR Imaging, University Hospital Essen, Essen, NRW, Germany

Computer 7 **4167. Quantitative Magnetic Resonance Imaging for Evaluation of ACL Injuries: a Pilot Multicenter Study**

Keiko Amano[1], Valentina Pedoia[2], Drew A. Lansdown[1], Cory Wyatt[2], Narihiro Okazaki[2], Favian Su[2], Dragana Savic[2], Kimberly Amrami[3], Matthew Frick, Joel Felmlee[3], Matthew F. Koff[4], Aaron Krych[5], Hollis Potter[4], C. Benjamin Ma[1], Scott Rodeo[6], Xiaojuan Li[2], Sharmila Majumdar[2]
[1]Department of Orthopaedic Surgery, University of California, San Francisco, San Francisco, CA, United States; [2]Department of Radiology, University of California, San Francisco, San Francisco, CA, United States; [3]Department of Radiology, Mayo Clinic, MN, United States; [4]Department of Radiology, Hospital for Special Surgery, NY, United States; [5]Department of Orthopaedic Surgery, Mayo Clinic, MN, United States; [6]Department of Orthopaedic Surgery, Hospital for Special Surgery, NY, United States

Computer 8 **4168. A New 3D Isotropic $T_{1\rho}$ Mapping Technique for *In Vivo* Human Knee Cartilage at 7T MRI**

Guruprasad Krishnamoorthy[1], Puneet Bagga[1], Ravi Prakash Reddy Nanga[1], Hari Hariharan[1], John Bruce Kneeland[2], Ravinder Reddy[1]
[1]Center for Magnetic Resonance and Optical Imaging, University of Pennsylvania, Philadelphia, PA, United States; [2]Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States

Computer 9 **4169. Cartilage Assessment in Femoroacetabular Impingement Using Bloch-Simulation-Based T2 Mapping at 3 T: Preliminary Validation Against Intra-Operative Findings**

Noam Ben-Eliezer[1, 2], Matthieu Guillemin[1], Akio Yoshimoto[1], Kai Tobias Block[1, 2], Roy Davidovitch[3], Thomas Youm[3], Robert Meislin[3], Michael Recht[4], Daniel K. Sodickson[1, 2], Riccardo Lattanzi[1, 2]
[1]Center for Biomedical Imaging, Department of Radiology, New York University Medical Center, New York, NY, United States; [2]Center for Advanced Imaging Innovation and Research (CAI2R), Department of Radiology, New York University School of Medicine, New York, NY, United States; [3]Department of Orthopedic Surgery, New York University Hospital for Joint Diseases, New York, NY, United States; [4]Department of Radiology, New York University Langone Medical Center, New York, NY, United States

Computer 10 **4170. Highly-Accelerated 3D T1rho Mapping of the Knee Using K-T SPARSE-SENSE**

Ding Xia[1, 2], Li Feng[1, 3], Tiejun Zhao[4], Ravinder R. Regatte[1, 2]
[1]Center for Advanced Imaging Innovation and Research (CAI2R), Department of Radiology, New York University School of Medicine,, New York, NY, United States; [2]Bernard and Irene Schwartz Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine,, New York, NY, United States; [3]Bernard and Irene Schwartz Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States; [4]Siemens Medical Solution USA. Inc, New York, NY, United States

Computer 11 **4171. High Isotropic, Balanced SSFP 3D Radial Imaging for Hip Joint Assessment at 3.0T**

Larry Hernandez[1], Habib Al saleh[1], Kevin Johnson[1], Walter F. Block[1, 2], Richard Kijowski[3]
[1]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States; [2]Biomedical Engineering, University of Wisconsin-Madison, Madison, WI, United States; [3]Radiology, University of Wisconsin-Madison, Madison, WI, United States

Computer 12 **4172. T1ρ Voxel Based Relaxometry for the Local Evaluation of the Knee Cartilage**

Valentina Pedoia[1], Favian Su[1], Deepak Kumar[1], Richard Souza[1], Benjamin Ma[1], Xiaojuan Li[1], Sharmila Majumdar[1]
[1]UCSF, San Francisco, CA, United States

Computer 13 **4173. Characterization of Knee Osteoarthritis Using Spatial Distribution of T1p Values: A Longitudinal Study**
Aditi Guha[1], Deepak Kumar[1], Lorenzo Nardo[1], Richard Souza[1], Thomas Link[1], Xiaojuan Li[1], Sharmila Majumdar[1]
[1]Radiology and Biomedical Imaging, UCSF, San Francisco, CA, United States

Computer 14 **4174. Characterization of Cartilage Using Diffusion Imaging and Correlation with T1p/T2 Relaxation Times: A Longitudinal Evaluation in Knee Osteoarthritis**
Aditi Guha[1], Cory Wyatt[1], Dimitrios Karampinos[2], Lorenzo Nardo[1], Thomas Link[1], Sharmila Majumdar[1]
[1]Radiology and Biomedical Imaging, UCSF, San Francisco, CA, United States; [2]Radiology, Technische Universität München, Munich, Germany

Computer 15 **4175. Evaluation of Multiband Slice-Accelerated TSE in Knee Joint MR Imaging**
Xiaona Li[1], Zhigang Peng[1], Pan-Li Zuo[2], Dingxin Wang[3], Jianling Cui[4]
[1]the 3rd Hospital of Hebei Medical University, Shijiazhuang, Hebei, China; [2]Siemens Healthcare, Beijing, China; [3]Siemens Medical Solutions USA, MN, Armenia; [4]the 3rd Hospital of Hebei Medical University, Hebei, China

Computer 16 **4176. T2, DGEMRIC and GagCEST Cartilage Assessment in an *In Vivo* OA Canine Model**
Maria I. Menendez[1], Daniel Clark[1], Bianca Hettlich[1], Michael Knopp[1]
[1]The Ohio State University, Columbus, OH, United States

Computer 17 **4177. A Robust Way to Make Good Contrast in the Deeper Layer of Articular Cartilage Using UTE Imaging**
Chanhee Lee[1], Jang-Yeon Park[1]
[1]Biomedical Engineering, IBS Center for Neuroscience Imaging Research, Sungkyunkwan University, Suwon, Gyeonggi, Korea

Computer 18 **4178. Assessment of the Clinical Relevance of Triple-Echo Steady-State T2 Mapping in Articular Cartilage**
Vladimir Juras[1, 2], Klaus Bohndorf[1], Rahel Heule[3], Claudia Kronnerwetter[1], Pavol Szomolanyi[1, 2], Benedikt Hager[1], Oliver Bieri[3], Siegfried Trattnig[1]
[1]High Field MR Centre, Department of Biomedical Imaging and Image-Guided Therapy, Medical University of Vienna, Vienna, Austria; [2]Department of Imaging Methods, Institute of Measurement Science, Bratislava, Slovakia; [3]Division of Radiological Physics, Department of Radiology, University of Basel Hospital, Basel, Switzerland

Computer 19 **4179. Does Cartilage Transplantation Harm or Regenerate Adjacent Cartilage ? a Longitudinal Study**
Alina Messner[1], Sebastian Apprich[2], Lukas Zak[3], Pavol Szomolanyi[1], Siegfried Trattnig[1]
[1]High Field MR Center, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria; [2]Department of Orthopaedics, Medical University of Vienna, Vienna, Austria; [3]Department of Traumatology, Medical University of Vienna, Vienna, Austria

Computer 20 **4180. Optimization of Adiabatic $T_{1\rho}$ and $T_{2\rho}$ for Quantification of Articular Cartilage at 3T**
Victor Casula[1, 2], Mikko J. Nissi[3, 4], Joonas Autio[3], Michaeli Shalom[4], Silvia Mangia[4], Edward Auerbach[4], Jutta Ellermann[4], Eveliina Lammentausta[3], Miika T. Nieminen[1, 3]
[1]Radiology, University of Oulu, Oulu, Finland; [2]Medical Research Center Oulu, Oulu University Hospital and University of Oulu, Oulu, Finland; [3]Department of Diagnostic Radiology, Oulu University Hospital, Oulu, Finland; [4]Center for Magnetic Resonance Research, Department of Radiology, University of Minnesota, Minneapolis, United States

Computer 21 **4181. Comparison of T1rho Imaging Between Spoiled Gradient Echo (SPGR) and Balanced Steady State Free Precession (B-FFE) Sequence of Knee Cartilage at 3 Tesla**
Taiki Nozaki[1], Yasuhito Kaneko[1], Hon J. Yu[1], Kayleigh Kaneshiro[1], Ran Schwarzkopf[2], Hiroshi Yoshioka[1]
[1]Radiological Sciences, University of California, Irvine, Orange, CA, United States; [2]Orthopaedic Surgery, University of California, Irvine, Orange, CA, United States

Computer 22 **4182. Cluster Analysis for T_2 and T_{1rho} Relaxation Times Using 3D Projection Maps of the Femoral Condyle in a Healthy and ACL-Injured Population**
Uchechukwuka Diana Monu[1, 2], Brian A. Hargreaves, [23], Caroline D. Jordan[2, 4], Garry E. Gold[2, 4], Emily J. McWalter[2]

[1]Electrical Engineering, Stanford University, Stanford , CA, United States; [2]Radiology, Stanford University, Stanford, CA, United States; [3]Electrical Engineering, Stanford University, Stanford, CA, United States; [4]Bioegineering, Stanford University, Stanford, CA, United States

Computer 23 **4183. Assessment of Ankle Condition After Fixator Distraction for OA with T1ρ MRI: 8-10 Year Follow-Up**
Daniel R. Thedens[1], Mai P. Nguyen[2], Annunziato Amendola[2], Douglas R. Pedersen[2]
[1]Radiology, University of Iowa, Iowa City, IA, United States; [2]Orthopaedics and Rehabilitation, University of Iowa, Iowa City, IA, United States

Computer 24 **4184. Multiparametric MRI Assessment of Necrotic Epiphyseal Cartilage Induced by Transection of Cartilage Canal Blood Vessels in Goat Kids**
Luning Wang[1], Mikko J. Nissi[2], Ferenc Toth, Michael Garwood[1], Cathy Carlson, Jutta Ellermann[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Twin Cities, Minneapolis, MN, United States; [2]Medical Research Center Oulu, Oulu University Hospital and University of Oulu, Finland

Electronic Poster
Bone & UTE

Exhibition Hall Wednesday 14:30-15:30

Computer 25 **4185. Water-Selective 3D BSSFP Imaging of Biomaterials Promoting Bone Repair in Rats; Comparison with Micro-CT**
Emeline Julie Ribot[1], Clément Tournier[2], Aurélien Julien Trotier[1], Didier Wecker[3], Didier Letourneur[4], Joelle Amédée[2], Sylvain Miraux[1]
[1]RMSB - UMR5536, CNRS - University Bordeaux, Bordeaux, France, Metropolitan; [2]Biotis - U1026, INSERM - University Bordeaux, Bordeaux, France, Metropolitan; [3]Bruker Biospin GmbH, Ettlingen, Germany; [4]LRVT - UMR1148, INSERM - University Paris 7, Paris, France, Metropolitan

Computer 26 **4186. 7T MRI of Trabecular Microarchitecture at the Distal Radius: How Bone Quality Varies at the Epiphysis, Metaphysis, and Diaphysis**
Lindsay M. Griffin[1], Stephen Honig[2], Yinxiao Liu[3], Cheng Chen[3], Punam K. Saha[3], Ravinder Regatte[1], Gregory Chang[1]
[1]Department of Radiology, New York University School of Medicine, New York, United States; [2]Department of Medicine, New York University, NY, United States; [3]University of Iowa, IA, United States

Computer 27 **4187. MRI Study of the Changes of Perfusion and Fat Content in Radiation-Induced Bone Marrow Injury in Rats**
kejun wang[1], Yunfei Zha[1], Hao Lei[2]
[1]Department Of Radiology, Renmin Hospital Of Wuhan University, Wuhan, Hubei, China; [2]Wuhan Institute Of Physics and Mathematics,Chinese Academy of Sciences, Wuhan, Hubei, China

Computer 28 **4188. Significant Reduction in Scan Time for Ultra Short TE Imaging of the Knee**
Zhe Liu[1], Alexey Dimov[1], Jiang Du[2], Yi Wang[3]
[1]Biomedical Engineering, Cornell University, New York, United States; [2]Radiology, University of California, San Diego, San Diego, CA, United States; [3]Radiology, Weill Cornell Medical College, NY, United States

Computer 29 **4189. Age Estimation in Adolescents and Young Adults Using MRI Data of the Manubrium**
Naira P. Martinez Vera[1], Johannes Höller[1], Bernhard Neumayer[1], Thomas Widek[1], Sabine Grassegger[1, 2], Thomas Ehammer[1], Eva Scheurer[1, 2], Martin Urschler[1]
[1]Ludwig Boltzmann Institute for Clinical Forensic Imaging, Graz, Styria, Austria; [2]Institute of Forensic Medicine, Medical University of Graz, Graz, Styria, Austria

Computer 30 **4190. The Value of BOLD-MRI in Early Diagnosis of Osteonecrosis of the Femoral Head in Patients with Steroid Treatment**
Jing Li[1], Fei Yuan[1], Quan Zhang[1], Jun Zhao[1], Yu Zhang[2]
[1]MRI Department, PingJin Hospital, He Dong District, TianJin, China; [2]Philips Healthcare, Beijing, China

Computer 31 **4191. Intermittent Parathyroid Hormone Treatment Reduces Scar Tissue Formation at the Proximity of Calvarial Grafts, Demonstrate by Collagen-Sensitive MRI Scanning Methods**
Doron Cohn Yakubovich[1], Uzi Eliav[2], Gadi Pelled[1, 3], Dan Gazit[1, 3], Zulma Gazit[1, 3], Gil Navon[2]
[1]Skeletal Biotech Laboratory, Hebrew University of Jerusalem, Jerusalem, Israel, Israel; [2]School of Chemistry, Tel Aviv University, Tel Aviv, Israel, Israel; [3]Department of Surgery and Cedars-Sinai Regenerative Medicine Institute, Cedars-Sinai Medical Center, Los Angeles, CA, United States

Computer 32 **4192. Bone Curvature Changes of the Knee in OA Subjects as on Detected on MRI Can Predict Who Will Progress to TKR in Five Years Time: Data from the OAI**
Joshua Michael Farber[1], Jose Tamez-Pena[2], David Hunter[3], Michael Hannon[4], Saara Totterman[5], Zhijie Wang, Robert Boudreau[6], Kent Kowh[7]
[1]Radiology, Qmetrics Technologies, Cincinnati, OH, United States; [2]Imaging Sciences, Escuela de Medicina, Tec de Monterray, Monterray, Mexico; [3]Rheumatology, Royal North Shore Hosp. and Northern Clinical Sch, Univ. of Sydney, Sydney, Australia; [4]Epidemiology, Dept. of Epidemiology, Univ. of Pittsburgh, Pittsburgh, PA, United States; [5]Radiology, Qmetrics Technologies, Rochester, NY, United States; [6]Epidemiology, dept. of Epidemiology, Univ. of Pittsburgh, Pittsburgh, PA, United States; [7]Rheumatology, The University of Arizona, Arthritis Center, Tuscon, AZ, United States

Computer 33 **4193. Native 3T MRI for Skeletal Age Assessment of the Hand and Wrist: A Comparison of Two Methods**
Sabine GRASSEGGER[1, 2], Thomas EHAMMER[1], Thomas WIDEK[1], Andreas PETROVIC[3], Pia BAUMANN[4], Eva SCHEURER[1, 2]
[1]Ludwig Boltzmann Institute for Clinical-Forensic Imaging, Graz, Styria, Austria; [2]Institute of Forensic Medicine, Medical University of Graz, Graz, Styria, Austria; [3]Institute of Medical Engineering, Graz University of Technology, Graz, Styria, Austria; [4]University Centre of Legal Medicine, University of Lausanne, Lausanne, Vaud, Switzerland

Computer 34 **4194. Relaxation Time Constants T1 and T2* of Bound and Free Water in Cortical Bone at 600 MHz and 700 MHz.**
Bainan Wu[1], Robert Nikolov[2], Hongda Shao[2], Jun Chen[2], Graeme Bydder[2], Maurizio Pellecchia[1], Jiang Du[2]
[1]Sanford-Burnham Medical Research Institute, La Jolla, CA, United States; [2]Radiology, University of California, San Diego, San Diego, CA, United States

Computer 35 **4195. Knee Cartilage and Subchondral Bone Marrow Changes of Chronic Kidney Disease in a Rat Model Investigated by Quantitative MR Imaging**
Chao-Ying Wang[1], Guo-Shu Huang[2], Shih-Wei Chiang, [23], Yi-Chih Hsu[2], Ming-Huang Lin[4], Hsiao-Wen Chung[3]
[1]Department of Biology and Anatomy, National Defense Medical Center, Taipei, Taiwan, Taiwan; [2]Department of Radiology, Tri-Service General Hospital, Taipei, Taiwan, Taiwan; [3]Graduate Institute of Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan, Taiwan; [4]Institute of Biomedical Sciences, Academic Sinica, Taipei, Taiwan, Taiwan

Computer 36 **4196. Musculoskeletal MR-Imaging in Fracture Dating**
Katharina Baron[1], Bernhard Neumayer[1], Thomas Widek[1], Sylvia Scheicher[1], Eva Maria Hassler[2], Fritz Schick[3], Eva Scheurer[1]
[1]Ludwig Boltzmann Institute for Clinical-Forensic Imaging (LBI-CFI), Graz, Styria, Austria; [2]Department of Radiology, Medical University of Graz, Styria, Austria; [3]Diagnostic and Interventional Radiology, Eberhard-Karls-University Tübingen, Baden-Württemberg, Germany

Computer 37 **4197. Combined MicroCT-MicroMR Imaging in the Tridimensional Evaluation of Bone Regeneration**
Allegra Conti[1], Raffaele Sinibaldi[1], Sara Spadone[1], Tonino Traini[2], Giuliana Tromba[3], Silvia Capuani[4], Gian Luca Romani[1, 5], Stefania Della Penna[1, 5]
[1]Department of Neuroscience, Imaging and Clinical Sciences, G. D'Annunzio Univ. of Chieti and Pescara, Chieti, CH, Italy; [2]Department of Stomatology and Biotechnologies, G. D'Annunzio Univ. of Chieti and Pescara, Chieti, CH, Italy; [3]Elettra-Sincrotrone Trieste S.C.p.A., Basovizza, TS, Italy; [4]Physics Department, 'La Sapienza' University of Rome, Roma, RM, Italy; [5]Institute for Advanced Biomedical Technologies (ITAB), G. D'Annunzio Univ. of Chieti and Pescara, Chieti, CH, Italy

Computer 38 **4198. Comparison of Relaxation-Based NMR Methods for Quantifying Bound and Pore Bone Water Fractions**
ISMRM MERIT AWARD magna cum laude
Alan C. Seifert[1], Suzanne L. Wehrli[2], Felix W. Wehrli[1]
[1]University of Pennsylvania, Philadelphia, PA, United States; [2]Children's Hospital of Philadelphia, Philadelphia, PA, United States

Computer 39 **4199. Cortical Bone Porosity: A Novel MRI-Based Clinical Biomarker to Assess Cortical Bone Quality *In Vivo***
Shahrokh Abbasi Rad[1, 2], Atena Akbari[1], Niloofar Tondro[3], Mohsen Shojaee-Moghaddam[3], Hamidreza Saligheh Rad[1, 2]

[1]Quantitative MR Imaging and Spectroscopy Group, Research Center for Molecular and Cellular Imaging, Tehran University of Medical Sciences, Tehran, Iran; [2]Medical Physics and Biomedical Engineering Department, Tehran University of Medical Sciences, Tehran, Iran; [3]Imaging Center, Payambaran Hospital, Tehran, Iran

Computer 40 **4200.** **MRI of Intraneural Perineurioma: Review of 27 Cases with Histopathologic Correlation**
Gavin McKenzie[1], Michelle Mauermann[2], Robert Spinner[2], Doris Wenger[2], Joel Felmlee[2], Shuji Nagata[3], Benjami Howe[2], Kimberly Amrami[2]
[1]Radiology, Mayo Clinic, Rochester, MN, United States; [2]Mayo Clinic, MN, United States; [3]Kurume University School of Medicine, Kurume, Japan

Computer 41 **4201.** **Microstructural Organization and Macromolecular Contents in Fibrous Tissues of Normal and Hypertensive Eyes with Diffusion Tensor Imaging and Magnetization Transfer Imaging**
Leon C. Ho[1, 2], Ian A. Sigal[3], Ning-Jiun Jan[3], Tao Jin[1], Ed X. Wu[2], Seong-Gi Kim, [14], Joel S. Schuman[3], Kevin C. Chan[1, 3]
[1]Neuroimaging Laboratory, University of Pittsburgh, Pittsburgh, PA, United States; [2]Department of Electrical and Electronic Engineering, The University of Hong Kong, Pokfulam, Hong Kong, China; [3]Departments of Ophthalmology and Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States; [4]Center for Neuroscience Imaging Research, Institute for Basic Science, Sungkyunkwan University, Suwon, Korea

Computer 42 **4202.** **Assessment of Extent and Activity of Musculoskeletal Involvement in Systemic Sclerosis Using Hybrid [18F]-FDG-PET/MRI**
Marius Stefan Horger[1], Nina Schwenzer[1], Sergios Gatidis[1], Christian la Fougere[2], Konstantin Nikolaou[1], Alexander Walter Sauter, [13]
[1]Radiology, Eberhard-Karls-University Tuebingen, Tuebingen, Germany; [2]Nuclear Medicine, Eberhard-Karls-University Tuebingen, Tuebingen, Germany; [3]Radiology and Nuclear Medicine, University Hospital Basel, Tuebingen, Germany

Computer 43 **4203.** **Characterizing the Blood Oxygen Level-Dependent Fluctuation in Musculoskeletal Tumors Using Functional Magnetic Resonance Imaging**
Li-Sha Duan[1], Meng-Jun Wang[1], Feng Sun[1], Zhen-Jiang Zhao[1], Mei Xing[1], Yu-Feng Zang[2], Steven Louis[3], Sheng-Jie Cui[4], Han Zhang[2], Jianling Cui[1]
[1]Department of Radiology, The Third Hospital of Hebei Medical University, Shijiazhuang, Hebei, China; [2]Center for Cognition and Brain Disorders and the Affiliated Hospital, Hangzhou Normal University, Hangzhou, Zhejiang, China; [3]Physics Department, Oakland University, Rochester, MI, United States; [4]Department of Anatomy and Cell Biology, Wayne State University School of Medicine, East Canﬁeld Avenue, Detroit, United States

Computer 44 **4204.** **Quantitative Assessments of Facial Soft-Tissue Mobility by Means of Watershed Segmentation and Constrained Elastic Registration in Upright Accelerated 3D MRI**
Marco Vicari[1], Stefan Heldmann[2], Hans Meine[1], Frank Hug[3], Juergen Hennig[4], Niklas Iblher[3]
[1]Fraunhofer MEVIS, Bremen, Germany; [2]Fraunhofer MEVIS, Luebeck, Germany; [3]Department of Plastic and Hand Surgery, University Medical Center Freiburg, Freiburg, Germany; [4]Department of Radiology, Medical Phyisics, University Medical Center Freiburg, Freiburg, Germany

Computer 45 **4205.** **Protein MRI Contrast Agents (ProCAs) with Unique Capability in Early Detection and Molecular Imaging of Varies Types of Cancer**
Jenny Yang[1, 2], Jingjuan Qiao[1], Shenghui Xue[1], Fan Pu[1], Shanshan Tan[1], Jie Jiang[1], Anvi Patel[1], Zhi-ren Liu, [23]
[1]Chemistry Department, Georgia State University, Atlanta, GA, United States; [2]Center for Diagnostics and Therapeutics, Georgia State University, Atlanta, GA, United States; [3]Biology Department, Georgia State University, Atlanta, GA, United States

Computer 46 **4206.** **MR Micro-Neurography in the Investigation of Amyloid-Related Neuropathy**
Paolo F. Felisaz[1], Eric Y. Chang[2], Polesel Marco[1], Irene Carne[3], Maugeri Giulia[1], Giovanni Palladini[4], Obici Laura[4], Giampaolo Merlini[4], Baldi Maurizia[5], Stefano Bastianello[6], Fabrizio Calliada[1]
[1]Radiology Department, University of Pavia, Pavia, Italy; [2]Radiology Service, VA San Diego Healthcare System, San Diego, CA, United States; [3]Medical Physics Department, IRCCS Salvatore Maugeri Foundation, Scientific Institute of Pavia, Italy; [4]Amyloid Research and Treatment Center, Scientific Institute Policlinico San Matteo, Pavia, Italy; [5]Radiology Department, IRCCS Salvatore Maugeri Foundation, Scientific Institute of Pavia, Italy; [6]Department of Brain and Behavioral Sciences, University of Pavia, Pavia, Italy

Computer 47 **4207. UTE-Based Short-T2* Mapping and PLM Optical Imaging for Evaluating Disruption of Collagen Fibers in the Knee Cartilage Explants**
Yongxian Qian[1], Ashley A. Williams[2], Constance R. Chu[2]
[1]Qian's Lab for MRI, General Labs Cloud LLC, Pittsburgh, PA, United States; [2]Orthopaedic Surgery, Stanford University, Redwood City, CA, United States

Computer 48 **4208. Characterization of [^{18}F]-FDG Uptake by Hybrid PET-MRI in Osteoarthritis of the Hip**
Audrey P. Fan[1], Feliks Kogan[1], Dawn Holley[1], Andrei Iagaru[1], Greg Zaharchuk[1], Garry E. Gold[1]
[1]Radiology, Stanford University, Stanford, CA, United States

Electronic Poster
Translational MR Imaging of Musculoskeletal Physiology

Exhibition Hall Wednesday 14:30-15:30

Computer 1 **4209. Quantitative Susceptibility Mapping of Meniscus at 11.7T**
Qun He[1], Zhe Liu[2], Hongda Shao[1], Alexey Dimov[2], Graeme M. Bydder[1], Yi Wang[2], Jiang Du[1]
[1]Radiology, University of California, San Diego, CA, United States; [2]Biomedical Engineering, Cornell University, Ithaca, NY, United States

Computer 2 **4210. Using the Ratio of T1ρ and T2 MR Parameters to Examine the Relationship Between Anterior Cruciate Ligament (ACL) Abnormalities and Patellofemoral Cartilage Integrity**
Nathaniel E. Calixto[1], Lorenzo Nardo[1], Deepak Kumar[2], Richard B. Souza[1], Xiaojuan Li[1], Thomas M. Link[1], Sharmila Majumdar[1]
[1]Department of Radiology and Biomedical Imaging, University of California, San Francisco, San Francisco, CA, United States; [2]Division of Physical Therapy, College of Health Professions, Medical University of South Carolina, Charleston, SC, United States

Computer 3 **4211. MRI Evaluation of the Polyethylene Tibial Insert in Total Knee Arthroplasty**
Angela E. Li[1], Darryl B. Sneag[1, 2], Alissa J. Burge[1, 2], Shari T. Jawetz[1, 2], Joseph D. Lipman[3], Hollis G. Potter[1, 2]
[1]Radiology, Hospital for Special Surgery, New York, NY, United States; [2]Weill Cornell Medical College, New York, NY, United States; [3]Biomechanics, Hospital for Special Surgery, New York, NY, United States

Computer 4 **4212. 3T MRI of Arthroplasty Implants Using Highly Undersampled SEMAC: 3T Versus 1.5T Intra-Subject Comparison**
Jan Fritz[1], Gaurav Thawait[1], Shadpour Demehri[1], Shivani Ahlawat[1], Heiko Meyer[2], Wesley Gilson[3], Esther Raithel[2], Mathias Nittka[2]
[1]Russell H. Morgan Department of Radiology and Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Healthcare Sector, Siemens AG, Bavaria, Germany; [3]Siemens Healthcare USA, Baltimore, United States

Computer 5 **4213. MR Imaging of Knee Implants Using SEMAC at 3T**
TAO AI[1], Panli Zuo[2], Yiqi Hu[1], Mathias Nittka[3], Liming Xia[1]
[1]Radiology, Tongji Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, Hubei, China; [2]Siemens Healthcare, MR Collaborations NE Asia, Beijing, China; [3]Siemens Healthcare, Germany, Erlangen, Germany

Computer 6 **4214. Rapid Multiparametric Mapping Near Orthopedic Implants at 3T Using Plug & Play Parallel Transmission**
Martijn A. Cloos[1], Mary Bruno[2], Tiejun Zhao[3], Leeor Alon[2], Riccardo Lattanzi[2], Danial K. Sodickson[2]
[1]Center for Biomedical Imaging, Department of Radiology, , New York University School of Medicine, New York, NY, United States; [2]Center for Biomedical Imaging, Department of Radiology,, New York University School of Medicine, New York, NY, United States; [3]Siemens Medical Solutions USA Inc., Malvern, PA, United States

Computer 7 **4215. Highly Accelerated SEMAC for MRI of Arthroplasty Implants: Comparison with Optimized TSE and Conventional SEMAC**
Jan Fritz[1], Gaurav Thawait[1], Shadpour Demehri[1], Shivani Ahlawat[1], Heiko Meyer[2], Wesley Gilson[3], Esther Raithel[2], Mathias Nittka[2]
[1]Russell H. Morgan Department of Radiology and Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Healthcare Sector, Siemens AG, Bavaria, Germany; [3]Siemens Healthcare USA, Baltimore, United States

Computer 8 **4216.** **Spectrum of Complications Demonstrated on MRI in Patients Who Undergo Revision Total Knee Arthroplasty**
Angela E. Li[1], Darryl B. Sneag[1, 2], Alissa J. Burge[1, 2], Shari T. Jawetz[1, 2], Darius P. Melisaratos[1, 2], Hollis G. Potter[1, 2]
[1]Radiology, Hospital for Special Surgery, New York, NY, United States; [2]Weill Cornell Medical College, New York, NY, United States

Computer 9 **4217.** **MR Neurography Using Robust Fat and Blood Suppressed Volumetric T2-Weighted Imaging**
Xinzeng Wang[1], Crystal E. Harrison[1], Yogesh K. Mariappan[2], Karthik Gopalakrishnan[2], Avneesh Chhabra[1, 3], Robert E. Lenkinski[1, 3], Ananth J. Madhuranthakam[1, 3]
[1]Radiology, UT Southwestern Medical Center, Dallas, TX, United States; [2]Philips Innovation Campus, Philips Healthcare, Bangalore, Karnataka, India; [3]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States

Computer 10 **4218.** **Quantitative Ultrashort TE (UTE) Imaging Predicts Joint Health in Hemophilic Arthropathy**
Eric Y. Chang[1], Annette von Drygalski[2], Thomas J. Cramer[2], Sheronda Statum[3], Jiang Du[3], Christine B. Chung[1]
[1]Radiology Service, VA San Diego Healthcare System, San Diego, CA, United States; [2]Department of Hematology/Oncology, University of California, San Diego Medical Center, San Diego, CA, United States; [3]Department of Radiology, University of California, San Diego Medical Center, San Diego, CA, United States

Computer 11 **4219.** **Quantitative MR Imaging of the Temporomandibular Joint Disc Using UTE**
Karen Chi-Lynn Chen[1, 2], Reni Biswas[2], Sheronda Statum[3], Won Bae[2], Eric Chang[1, 2], Christine Chung[1]
[1]Radiology, Veterans Administration Healthcare System San Diego, San Diego, CA, United States; [2]Radiology, University of California San Diego, San Diego, CA, United States; [3]Radiology, University of California, San Diego, CA, United States

Computer 12 **4220.** **Reduced Magic Angle Effects Using Ultrashort Echo Time Magnetization Transfer (UTE-MT) for Quantification of Human Rotator Cuff Tendon**
Eric Y. Chang[1], Jiang Du[2], Reni Biswas[2], Betty Tran[2], Sheronda Statum[2], Won C. Bae[2], Christine B. Chung[1]
[1]Radiology Service, VA San Diego Healthcare System, San Diego, CA, United States; [2]Department of Radiology, University of California, San Diego Medical Center, San Diego, CA, United States

Computer 13 **4221.** **UTE T2* Decay Analysis of the Rabbit Supraspinatus Tendon at 7T**
Gerd Melkus[1, 2], Greg O. Cron[1, 2], Peder E. Larson[3], Adnan Sheikh[1, 2], Ian Cameron[1, 2], Hakim Louati[4, 5], Peter Lapner[5], Tim Ramsay[6], Guy Trudel[4, 7]
[1]Department of Medical Imaging, The Ottawa Hospital, Ottawa, ON, Canada; [2]Department of Radiology, University of Ottawa, Ottawa, ON, Canada; [3]Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [4]Bone and Joint Laboratory, University of Ottawa, Ottawa, ON, Canada; [5]Division of Orthopaedic Surgery, The Ottawa Hospital, Ottawa, ON, Canada; [6]Ottawa Hospital Research Institute, The Ottawa Hospital, Ottawa, ON, Canada; [7]Department of Medicine, University of Ottawa, ON, Canada

Computer 14 **4222.** **Evaluation of the Glycosaminoglycan Content in Healthy and Degenerated Menisci with GagCEST at 3T**
Benedikt Hager[1], Vladimir Juras[1, 2], Olgica Zaric[1], Vladimir Mlynarik[1], Stefan Zbyn[1], Pavol Szomolanyi[1, 2], Siegfried Trattnig[1]
[1]High Field MR Centre, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria; [2]Department of Imaging Methods, Institute of Measurement Science , Slovak Academy of Sciences, Dubravska cesta 9, Bratislava, Slovakia

Computer 15 **4223.** **Rapid, High-Resolution, and Multi-Contrast Knee MRI of Short T_2 Tissues with Ultrashort TE Double-Echo Steady-State**
Akshay S. Chaudhari[1, 2], Catherine J. Moran[2], Emily J. McWalter[2], Garry E. Gold, [12], Brian A. Hargreaves, [12]
[1]Bioengineering, Stanford University, Palo Alto, CA, United States; [2]Radiology, Stanford University, Palo Alto, CA, United States

Computer 16 **4224.** **Assessment of Degenerative Changes in Disc Endplates Using DCEMRI and T1ρ**
Volkan Emre Arpinar[1], L Tugan Muftuler[1, 2]
[1]Department of Neurosurgery, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Center for Imaging Research, Medical College of Wisconsin, WI, United States

Computer 17 **4225.** **Evaluation of the Applicability of IGagCESL and GagCEST on Both Cartilage and Disc at 3T**
Wen Ling[1], Nam Vo[2], Gwendolyn A. Sowa[2], James Kang[3], Kyongtae Ty Bae[1]

[1]Radiology Department, University of Pittsburgh Medical Center, Pittsburgh, PA, United States; [2]Department of Orthopedic Surgery, University of Pittsburgh Medical Center, PA, United States; [3]Department of Orthopedic Surgery, University of Pittsburgh Medical Center, Pittsburgh, PA, United States

Computer 18 **4226.** **Triple-Echo Steady State T2 Mapping and High Resolution Axonal Bundle Assessment of the Median Nerve in Healthy Volunteers and Patients with Carpal Tunnel Syndrome at 7Tesla**

Georg Riegler[1], Gregor Drlicek[1], Claudia Kronnerwetter[1], Rahel Heule[2], Oliver Bieri[2], Benedikt Hager[1], Peter Bär[1], Siegfried Trattnig[1]
[1]MR Centre of Excellence, Dept. of Biomedical Imaging and Image-Guided Therapy, Medical University Vienna, Vienna, Austria; [2]Department of Radiology, Division of Radiological Physics, University of Basel Hospital, Basel, Switzerland

Computer 19 **4227.** **A Fast Scanning Technique of MR Micro-Neurography Using the 3-Point-Dixon Method at 3T**

Paolo F. Felisaz[1], Eric Y. Chang[2], Irene Carne[3], Polesel Marco[1], Stefano Montagna[4], Maugeri Giulia[1], Baldi Maurizia[4], Fabrizio Calliada[1], Stefano Bastianello[5]
[1]Radiology Department, University of Pavia, Pavia, Italy; [2]Radiology Service, VA San Diego Healthcare System, San Diego, CA, United States; [3]Medical Physics Department, IRCCS Salvatore Maugeri Foundation, Scientific Institute of Pavia, Italy; [4]Radiology Department, IRCCS Salvatore Maugeri Foundation, Scientific Institute of Pavia, Italy; [5]Department of Brain and Behavioral Sciences, University of Pavia, Pavia, Italy

Computer 20 **4228.** **The Magic Angle Effect on Ultrashort Echo Time MRI for Analysis of T2* and Magnetization Transfer Ratio**

Hongda Shao[1], Michael Carl[2], Eric Chang[1], Christine B. Chung[1], Graeme M. Bydder[1], Jiang Du[1]
[1]Radiology, University of California, San Diego, CA, United States; [2]GE Healthcare, San Diego, CA, United States

Computer 21 **4229.** **Clinical Evaluation of IVIM and DCE in Sarcoma**

Jing Zhang[1], Pan-Li Zuo[2], Thorsten Feiweier[3], Xiaoguang Cheng[1]
[1]Beijing Jishuitan Hospital, Beijing, China; [2]Siemens Healthcare, MR Collaborations NE Asia, Beijing, China; [3]Siemens Healthcare, Erlangen, Germany

Computer 22 **4230.** **Optimized Refocusing-Flip-Angle-Train Design for Small Peripheral Nerve Imaging with 3D TSE**

Barbara Cervantes[1], Jan S. Bauer[2], Hendrik Kooijman[3], Marcus Settles[1], Axel Haase[4], Ernst J. Rummeny[1], Klaus Wörtler[1], Dimitrios C. Karampinos[1]
[1]Diagnostic and Interventional Radiology, Technische Universität München, Munich, Germany; [2]Neuroradiology, Technische Universität München, Munich, Germany; [3]Philips Healthcare, Hamburg, Germany; [4]Zentralinstitut für Medizintechnik, Technische Universität München, Garching, Germany

Computer 23 **4231.** **An Improved Saturation Scheme for Measuring GagCEST in Human Knee at 7 T**

Vladimir Mlynarik[1], Stefan Zbyn[1], Vladimir Juras[1], Pavol Szomolanyi[1], Martin Brix[1], Benjamin Schmitt[2], Siegfried Trattnig[1]
[1]High Field MR Center, Medical University of Vienna, Vienna, Austria; [2]Siemens Ltd, Macquarie Park, Australia

Computer 24 **4232.** **Quantitative MRI of Triangular Fibrocartilage (TFC): Correlation with Biomechanical Properties.**

Mohammed Aakef[1], Tania Kumar[1], Reni Biswas[1], Betty Tran[1], Sheronda Statum[1], Eric Y. Chang[2], Won C. Bae[1], Christine B. Chung[2, 3]
[1]Radiology, Univeristy of California, San Diego, San Diego, CA, United States; [2]Veterans Affairs San Diego Healthcare System, CA, United States; [3]Radiology, Univeristy of California, San Diego, CA, United States

Electronic Poster
Muscle MRS/MRI

Exhibition Hall Wednesday 14:30-15:30

Computer 25 **4233.** **Reproducibility of Carnosine Quantification in the Calf Muscle by 1H MRS at 7T and Detection of Its Concentration Changes Following Acute Physical Activity**

Ivica Just Kukurova[1], Barbara Ukropcová[2, 3], Marjeta Tušek Jelenc[1], Milan Sedliak[4], Marek Chmelik[1], Jozef Ukropec[2], Martin Krššák[1, 5], Siegfried Trattnig[1], Ladislav Valkovič[1, 6]
[1]High Field MR Centre, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria; [2]Institute of Experimental Endocrinology, Slovak Academy of Sciences, Bratislava, Slovakia; [3]Faculty of Medicine, Comenius University, Bratislava, Slovakia; [4]Faculty of Physical Education and Sport, Comenius University, Bratislava, Slovakia;

[5]Department of Internal Medicine III, Medical University of Vienna, Vienna, Austria; [6]Institute of Measurement Science, Slovak Academy of Sciences, Bratislava, Slovakia

Computer 26 **4234. Myoglobin Contribution to the Near Infrared Signal in Exercising Skeletal Muscle**

David Bendahan[1], Benjamin Chatel[1], Thomas Jue[2]
[1]CNRS, CRMBM, Aix-Marseille University, Marseille, France; [2]Biochem & Mol Medicine, University of California, Davis, CA, United States

Computer 27 **4235. Spinal Fusion Induced Increase of Energy Demand in Lower Back Muscles - A Functional ^{31}P-MRS Study**

Alexander Gussew[1], Philipp Schenk[2, 3], Heiko Stark[4], Bernhard Ullrich[3], Christoph Anders[2], Patrick Hiepe[1], Reinhard Rzanny[1], Kai Wohlfahrt[5], Gunther Hofmann[2, 3], Hans-Christoph Scholle[2], Jürgen R. Reichenbach[1]
[1]Medical Physics Group, Institute of Diagnostic and Interventional Radiology, Jena University Hospital - Friedrich Schiller University Jena, Jena, Thuringia, Germany; [2]Clinic for Trauma, Hand and Reconstructive Surgery, Division of Motor Research, Pathophysiology, Jena University Hospital - Friedrich Schiller University Jena, Jena, Thuringia, Germany; [3]Department of Trauma Surgery, BG Clinics Bergmannstrost, Halle (Saale), Saxony-Anhalt, Germany; [4]Institute of Systematic Zoology and Evolutionary Biology, Friedrich-Schiller-University Jena, Jena, Thuringia, Germany; [5]Clinic for Neurology, BG Clinics Bergmannstrost, Halle (Saale), Saxony-Anhalt, Germany

Computer 28 **4236. Functional 2D 31P MRSI in the Leg During Exercise, Using a Dual-Tuned 1H/31P Volume Coil**

Claudiu Schirda[1], Tiejun Zhao[2], Shailesh Raval[3], SoJung Lee[4], Silva Arslanian[4], Hoby Hetherington[1], Tamer Ibrahim[1, 3]
[1]Radiology, University of Pittsburgh School of Medicine, Pittsburgh, PA, United States; [2]Siemens Medical Solutions, Pittsburgh, PA, United States; [3]Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States; [4]Division of Weight Management and Wellness, University of Pittsburgh School of Medicine, Pittsburgh, PA, United States

Computer 29 **4237. Fat to Water Ratio and T2 Value Variations Measured in Lumbar, Thoracic, and Cervical Spinal Bone Marrow at 3 T**

Quinn M. Barber[1], Atiyah Yahya[1, 2]
[1]Department of Oncology, University of Alberta, Edmonton, Alberta, Canada; [2]Department of Medical Physics, Cross Cancer Institute, Edmonton, Alberta, Canada

Computer 30 **4238. Fat Assessment in Shoulder Muscle: A Comparison Between Spectroscopic and Imaging Techniques.**

Gaëlle Diserens[1], Helen Anwander[2], Fabian Fuhrer[2], Chris Boesch[1], Mattias A. Zumstein[2], Peter Vermathen[1]
[1]Depts. Radiology and Clinical Research, University Bern, Bern, Switzerland; [2]Dept. of Orthopaedic Surgery and Traumatology, University Bern, Bern, Switzerland

Computer 31 **4239. Towards a Whole-Joint MR Evaluation of the Knee: Cartilage, Bone and Marrow.**

Won C. Bae[1], Kyu-Sung Kwack[2], Gavin Hamilton[1], Reni Biswas[1], Betty Tran[1], Robert Healey[3], Sheronda Statum[1], Eric Y. Chang[4], Christine B. Chung[4, 5]
[1]Radiology, Univeristy of California, San Diego, San Diego, CA, United States; [2]Radiology, Ajou University Medical Center, Korea; [3]Orthopedic Surgery, Univeristy of California, San Diego, CA, United States; [4]Veterans Affairs San Diego Healthcare System, CA, United States; [5]Radiology, Univeristy of California, San Diego, CA, United States

Computer 32 **4240. Creatine Concentration in Human Calf Muscle at 7T with AREX**

ISMRM MERIT AWARD magna cum laude

Eugenia Rerich[1], Moritz Zaiss[1], Johannes Windschuh[1], Patrick Schünke[1], Peter Bachert[1]
[1]German Cancer Research Center, Heidelberg, Baden-Württemberg, Germany

Computer 33 **4241. Progression of Skeletal Muscle Dysfunction Assessed by 31P MRS and BOLD MRI in Non-Obese Type 2 Diabetic Rats**

Yuchi Liu[1], Xunbai Mei[1], Andrew Slabic[1], Nicola Lai[1], Xin Yu[1, 2]
[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Radiology, Case Western Reserve University , Cleveland, OH, United States

Computer 34 **4242. Dystrophic Skeletal Muscle ^1H_2O T_2 Analyzed for Multiple Components**

Sean C. Forbes[1], William T. Triplett[1], Rebecca Willcocks[1], Abhinandan Batra[1], Ravneet Vohra[1], James Pollaro[2], Dah-Jyuu Wang[3], Richard Finkel[4], Barry J. Byrne[5], Barry S. Russman[6], Erika Finanger[6], Michael Daniels[7], William Rooney[2], Glenn A. Walter[1], H Lee Sweeney[8], Krista Vandenborne[1]

[1]University of Florida, Gainesvillle, FL, United States; [2]Oregon Health & Science University, OR, United States; [3]The Children's Hospital of Philadelphia, PA, United States; [4]Nemours Children's Hospital, FL, United States; [5]University of Florida, Gainesville, FL, United States; [6]Shriners Hospital, OR, United States; [7]University of Texas at Austin, TX, United States; [8]University of Pennsylvania, PA, United States

Computer 35 **4243. Diffusion-Weighted,Triple-Fat-Suppressed Echo-Planar Imaging Provides 'Anomalous' Diffusion Metrics for Assessment of Muscle Quality in the Human Thigh**

Donnie Cameron[1], Mustapha Bouhrara[1], David A. Reiter[1], Kenneth W. Fishbein[1], Christopher M. Bergeron[1], Richard G. Spencer[1]

[1]National Institute on Aging, National Institutes of Health, Baltimore, MD, United States

Computer 36 **4244. Importance of Supine Rest Period Before Imaging for Thigh Muscle Volume Quantification**

Vijay Shah[1], Therese Crilly[1], Larry Molinelli[1], William Badger[2], Jon Riek[1]

[1]VirtualScopics, Inc., Rochester, NY, United States; [2]Univerisity of Rochester Medical Center, Rochester, NY, United States

Computer 37 **4245. MSK Hemodynamics at Quadriceps Using Blood-Oxygen Level Dependent (BOLD) MRI at 3T; Volitional Exercise VS Neuromuscular Electrical Stimulation (NMES)**

Junghwan Kim[1, 2], Serter Gumus[2], Piva Sara Regina[3], Tae Kim[2], Tamer Ibrahim[1, 2], Kyongtae Ty Bae[1, 2]

[1]Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States; [2]Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [3]Physical Therapy, University of Pittsburgh, Pittsburgh, PA, United States

Computer 38 **4246. Quantifying Perfusion in Conditions of Rapidly Changing Blood Flow and Vascular Volume: A Novel Tracer Kinetic Model**

Jeff L. Zhang[1], Christopher J. Hanrahan[1], Vivian S. Lee[1]

[1]Radiology, University of Utah, Salt Lake City, UT, United States

Computer 39 **4247. Multi Parametric MRI Evaluation of Muscle Development**

Kerryanne V. Winters[1, 2], Olivier Reynaud[1, 2], Dmitry S. Novikov[1, 2], Els Fieremans[1, 2], Sungheon G. Kim[1, 2]

[1]Department of Radiology, Bernard and Irene Schwartz Center for Biomedical Imaging - NYU School of Medicine, New York, NY, United States; [2]Center for Advanced Imaging Innovation and Research, NYU Langone Medical Center, New York, NY, United States

Computer 40 **4248. Muscle Perfusion Reserve (MPR) Measured from Exercise-Recovery MRI: A New Functional Index for Diagnosing PAD**

Jeff L. Zhang[1], Christopher J. Hanrahan[1], Jason Mendes[1], Gwenael Layec[2], Corey Hart[2], Kristi Carlston[1], Michelle Mueller[3], Russell S. Richardson[2], Vivian S. Lee[1]

[1]Radiology, University of Utah, Salt Lake City, UT, United States; [2]Division of Geriatrics, Department of Internal Medicine, University of Utah, Salt Lake City, UT, United States; [3]Vascular Surgery, University of Utah, Salt Lake City, UT, United States

Computer 41 **4249. Evaluation of Skeletal Muscle DTI in Duchenne Muscular Dystrophy**

Melissa Hooijmans[1], Martijn Froeling[2], Maarten Versluis[3], Andrew Webb[1], Erik Niks[4], Jan Verschuuren[4], Hermien Kan[1]

[1]Radiology, Leiden University Medical Center, Leiden, Zuid-holland, Netherlands; [2]Radiology, Utrecht Medical Center, Utrecht, Netherlands; [3]Philips, Netherlands; [4]Neurology, Leiden University Medical Center, Leiden, Zuid-holland, Netherlands

Computer 42 **4250. Advanced Pathology in Aged Mdx Muscle Characterized by Quantitative Multi-Parametric MRI**

Nathan David Bryant[1, 2], Ke Li[1, 2], Bruce Damon[1, 2]

[1]Vanderbilt University Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [2]Department of Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States

Computer 43 **4251. Simultaneous Acquisition of Transverse Relaxation, Perfusion, and Diffusion Information of Lower-Leg Muscle Using Diffusion EPI with Different TE**
Makoto Terazono[1], Tosiaki Miyati[1], Naoki Ohno[1], Shuya Fujihara[1, 2], Natsumi Makino[3], Satoshi Kobayashi[4], Toshifumi Gabata[4]
[1]Division of health sciences, Graduate school of Medical Sciences, Kanazawa University, Kanazawa, Ishikawa, Japan; [2]Department of Radiology, Shinshu University Hospital, Nagano, Japan; [3]School of Health Sciences, College of Medical, Pharmaceutical and Health Sciences, Kanazawa, Ishikawa, Japan; [4]Department of Radiology, Kanazawa University Hospital, Kanazawa, Ishikawa, Japan

Computer 44 **4252. Deformation-Induced Damage in Rat Skeletal Muscle: Role of the Vascular System**
Jules Nelissen[1, 2], Willeke Traa[3], Kevin Moerman[4], Cees Oomens[5], Aart Nederveen[4], Klaas Nicolay[1], Gustav Strijkers[1, 2]
[1]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [2]Biomedical Engineering and Physics, Academic Medical Center, Amsterdam, Netherlands; [3]Soft Tissue Biomechanics and Engineering, , Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [4]Department of Radiology, Academic Medical Center, Amsterdam, Netherlands; [5]Soft Tissue Biomechanics and Engineering, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands

Computer 45 **4253. Muscle Oxygenation Changes in Different Bone Mineral Density Subjects - A BOLD Based Study**
Heather T. Ma[1, 2], James F. Griffith[3], Yang Chen[1], Shoulin Huang[1], Davd K. Yeung[3], Xu Xing[1], Li Liang[1]
[1]Harbin Institute of Technology Shenzhen Graduate School, Shenzhen, Guangdong, China; [2]Johns Hopkins University, Baltimore, MD, United States; [3]The Chinese University of Hong Kong, Hong Kong, China

Computer 46 **4254. Significance of Perfusion Parameters and Muscle Performance in the Rotator Cuff Muscles of Young Badminton Athletes: Assessment by Dynamic Contrast-Enhanced MR Imaging**
Chih-Wei Yu[1], Tiffany Ting-Fang Shih[1], Hsing-Kuo Wang[2], Chao-Yu Hsu[1], Bang-Bin Chen[1], Xin-Jia Chen[3]
[1]Radiology and Medical Imaging, National Taiwan University College of Medicine and Hospital, Taipei, Taiwan; [2]School and Graduate Institute of Physical Therapy, National Taiwan University College of Medicine, Taipei, Taiwan; [3]Medical Imaging, National Taiwan University Hospital, Taipei, Taiwan

Computer 47 **4255. Dynamic Analysis of T_2 and Proton Density of Exercise-Induced Muscle Using SE-EPI**
Noriyuki Tawara[1], Takahiro Ohnishi[2], Toru Yamamoto[1]
[1]Faculty of Health Sciences, Hokkaido University, Hokkaido, Japan; [2]Siemens Japan, Japan

Computer 48 **4256. Correlation Between Quantitative MRI Features and Functional Assessment of Myopathy**
Hon J. Yu[1, 2], Manaswitha Khare[3], Mathew Gargus[3], Marie Wencel[3], Abhilasha Surampalli[3], Vince Caiozzo[4], Virginia Kimonis[3]
[1]Radiological Sciences, University of California, Irvine, CA, United States; [2]Tu & Yuen Center for Functional Onco-Imaging, University of California, Irvine, CA, United States; [3]Pediatrics, University of California, Irvine, CA, United States; [4]Orthopaedic Surgery, University of California, Irvine, CA, United States

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Computer 1 **4257. CSF Alpha Synuclein Levels Modulate BOLD Connectivity of Executive Control Network Regions in Parkinson's Disease**
Swati Rane[1], Manus J. Donahue[2, 3], Daniel Claassen[3]
[1]Radiology and Radiological Sciences, Vanderbilt University Institute of Imaging Science, Nashville, TN, United States; [2]Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [3]Neurology, Vanderbilt University, Nashville, TN, United States

Computer 2 **4258. Tissue Volume Fraction as a Biomarker of Genetically-Determined Disease Burden in Huntington's Disease**
Jessica Steventon[1], Rebecca Trueman[2], Anne E. Rosser[3], Derek K. Jones[1]
[1]CUBRIC, School of Psychology, Cardiff University, Cardiff, Wales, United Kingdom; [2]University of Nottingham, England, United Kingdom; [3]School of Biosciences, Cardiff University, Cardiff, Wales, United Kingdom

Computer 3 4259. Altered Topological Properties of Functional Connectome in Early-Stage PD Revealed by Graph Theoretical Analysis
Xueling Suo[1], Du Lei[1], Fuqin Chen[2], Lei Li[2], Nannan Li[3], Lan Cheng[3], Rong Peng[3], Qiyong Gong[2]
[1]Huaxi MR Research Center (HMRRC), Department of Radiolody, West China Hospital, Chengdu, Sichuan, China; [2]Huaxi MR Research Center (HMRRC), Department of Radiolody, West China Hospital, Chengdu, Sichuan, China; [3]Department of Neurology, West China Hospital, Chengdu, Sichuan, China

Computer 4 4260. MRI Guided Magnetic Nanoparticle Based Drug Delivery for Neurodegenerative Diseases: Preliminary *In-Vivo* and *In-Vitro* Study
ISMRM MERIT AWARD summa cum laude
Yujuan Zhao[1], Noah Snyder[1], Tiejun Zhao[2], Liza Bruk[1], James Eles[1], Xia Li[1], X. Tracy Cui[1], Tamer S. Ibrahim[1]
[1]University of Pittsburgh, Pittsburgh, PA, United States; [2]Siemens Medical Solutions USA, Pittsburgh, PA, United States

Computer 5 4261. Aberrant Brain Network Connectivity Assessed Using Graph Theory in Paroxysmal Kinesigenic Dyskinesia
Lei Li[1], Du Lei[2], Xueling Suo[2], Xinyu Hu[2], Jiechuan Ren[3], Xiaoqi Huang[2], Qiyong Gong[2]
[1]Huaxi MR Research Center (HMRRC), Department of Radiology, West China Hospital of Sichuan University, Chengdu, Sichuan, China; [2]Huaxi MR Research Center (HMRRC), Department of Radiology, West China Hospital of Sichuan University, Sichuan, China; [3]Department of Neurology, West China Hospital of Sichuan University, Sichuan, China

Computer 6 4262. QSM of Substantia Nigra and Improved Characterization of Substantia Nigra
Jason Langley[1], Daniel E. Huddleston[2], Nishant Zachariah[3], Xiangchuan Chen[1], Xiaoping Hu[1]
[1]Wallace H. Coulter Department of Biomedical Engineering, Emory University and Georgia Institute of Technology, Atlanta, GA, United States; [2]Center for Health Research, Southeast, Kaiser Permanente, Atlanta, GA, United States; [3]Department of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA, United States

Computer 7 4263. Assessing the Level of Pathology of the Corticospinal Pathway in Patients with PLP1 Mutations Using Diffusion Tensor Imaging.
Malek I. Makki[1], Jeremy J. Laukka[2]
[1]MRI Research, University Children Hospital of Zurich, Zurich, Switzerland; [2]Department of Neuroscience and Neurology, University of Toledo, Toledo, OH, United States

Computer 8 4264. Parkinson's Disease Related Pattern from Resting State fMRI
An Vo[1], Wataru Sako[1], Frank M. Skidmore[2], David Eidelberg[1], Aziz M. Ulug[1, 3]
[1]Center for Neurosciences, Feinstein Institute for Medical Research, Manhasset, NY, United States; [2]Neurology, University of Alabama, AL, United States; [3]Institute of Biomedical Engineering, Bogazici University, Istanbul, Turkey

Computer 9 4265. Abnormal Structural Connectivity Networks of Patients with Major Depressive Disorder: Graph Theoretical and Network-Based Statistic Analyses
Hao Hu[1], Vincent Chin-Hung Chen[2], Ming-Chou Ho[3], Yeu-Sheng Tyan[4, 5], Jun-Cheng Weng[4, 5]
[1]Department of Radiology, First Affiliated Hospital of Nanjing Medical University, Nanjing, Jiangsu Province, China; [2]Department of Psychiatry, Chung Shan Medical University Hospital, Taichung, Taiwan; [3]Department of Psychology, Chung Shan Medical University, Taichung, Taiwan; [4]School of Medical Imaging and Radiological Sciences, Chung Shan Medical University, Taichung, Taiwan; [5]Department of Medical Imaging, Chung Shan Medical University Hospital, Taichung, Taiwan

Computer 10 4266. T1rho Imaging as a Biomarker for Huntington's Disease Progression
Vincent Magnotta[1], Casey Johnson[1], John Wemmie[2], Shafik Wassef[1], Hans Johnson[3], Jeffrey Long[2], Jane Paulsen[2]
[1]Radiology, University of Iowa, Iowa City, IA, United States; [2]Psychiatry, University of Iowa, Iowa City, IA, United States; [3]Electrical and Computer Engineering, University of Iowa, Iowa City, IA, United States

Computer 11 4267. A Protean Poseur--SSPE
Sniya Valsa Sudhakar[1], Maya Mary Thomas[2]
[1]Radiodiagnosis, Christian Medical College, Vellore, Tamil Nadu, India; [2]Neurology, cmc vellroe, Vellore, Tamil Nadu, India

Computer 12 4268. Alterations of Cerebral Cortical Thickness in the Sensory and Pain Systems in Restless Legs Syndrome
Byeong-Yeul Lee[1], James R. Connor[2], Wei Chen[1], Qing X. Yang, [23]

[1]Center for Magnetic Resonance Research, Department of Radiology, University of Minnesota, Minneapolis, MN, United States; [2]Department of Neurosurgery, The Pennsylvania State University College of Medicine, Hershey, PA, United States; [3]Center for NMR Research, Department of Radiology, The Pennsylvania State University College of Medicine, Hershey, PA, United States

Computer 13 4269. Spatiotemporal Changes in Ocular Morphology and White Matter Integrity in a Transgenic Mouse Model of Chronic Glaucoma

Xiao-Ling Yang[1, 2], Leon C. Ho[1, 3], Yolandi van der Merwe[1, 4], Ian P. Conner[2, 4], Seong-Gi Kim, [15], Gadi Wollstein[2], Joel S. Schuman[2, 4], Kevin C. Chan[1, 2]

[1]NeuroImaging Laboratory, University of Pittsburgh, Pittsburgh, PA, United States; [2]Department of Ophthalmology, School of Medicine, University of Pittsburgh, Pittsburgh, PA, United States; [3]Department of Electrical and Electronic Engineering, The University of Hong Kong, Pokfulam, Hong Kong, China; [4]Department of Bioengineering, Swanson School of Engineering, University of Pittsburgh, Pittsburgh, PA, United States; [5]Center for Neuroscience Imaging Research, Institute for Basic Science, Sungkyunkwan University, Suwon, Korea

Computer 14 4270. Comparisons of Neuronal Activations from BOLD and ASL fMRI During an Associative Working Memory Task in Patients with Cognitive Normal, Mild Cognitive Impairment, and Alzheimer's Disease

Hyug-Gi Kim[1], Dan-Bi Kim[2], Jang-Hoon Oh[1], Soon Chan Park[2], Hak Young Rhee[3], Chang-Woo Ryu[2], Won-Chul Shin[3], Dal-Mo Yang[2], Geon-Ho Jahng[2]

[1]Biomedical Engineering, Kyung Hee University, YoungIn, Gyeonggi-do, Korea; [2]Radiology, Kyung Hee University Hospital-Gangdong, Seoul, Korea; [3]Neurology, Kyung Hee University Hospital-Gangdong, Seoul, Korea

Computer 15 4271. Neuromelanin Magnetic Resonance Imaging of Substantia Nigra in Patients with Parkinson Disease Dementia (PDD), Alzheimer Disease (AD) and Age-Matched Controls.

Won-Jin Moon[1], Ju Yeon Park, Jin Woo Choi, Yeon Sil Moon[2], Seol-Heui Han[2], Ki-Chang Kwak[3], Jong-Min Lee[3]

[1]Department of Radiology , Konkuk University School of Medicine, Seoul, Korea; [2]Department of Neurology, Konkuk University School of Medicine, Seoul, Korea; [3]Department of Biomedical Engineering, Hanyang University, Seoul, Korea

Computer 16 4272. Cross Sectional and Longitudinal Magnetisation Transfer Ratio in Prion Disease at 3 Tesla

Enrico De Vita[1, 2], Marie-Claire Porter[3, 4], Ivor Simpson[5], Zoe Fox[6], Gerard Ridgway[7], Sebastien Ourselin[5], Peter Rudge[3, 4], Diana Caine[3, 4], Rolf Jager[1, 2], Tarek Yousry[1, 2], John Collinge[3, 4], Simon Mead[3, 4], Harpreet Hyare[3, 4], John S. Thornton[1, 2]

[1]Lysholm Department of Neuroradiology, National Hospital for Neurology and Neurosurgery, London, United Kingdom; [2]Academic Neuroradiological Unit, Department of Brain Repair and Rehabilitation, UCL Institute of Neurology, London, United Kingdom; [3]MRC Prion Unit, Department of Neurodegenerative Diseases, UCL Institute of Neurology, London, United Kingdom; [4]National Prion Clinic, National Hospital for Neurology and Neurosurgery, London, United Kingdom; [5]Centre for Medical Image Computing, University College London, London, United Kingdom; [6]Education unit, UCL Institute of Neurology, London, United Kingdom; [7]Wellcome Trust Centre for Neuroimaging, UCL Institute of Neurology, London, United Kingdom

Computer 17 4273. Left Temporal Lobe Epilepsy Associated with Hippocampal Sclerosis and Reduced Functional Connectivity in the Default Mode Network

Arzu Ceylan HAS[1], Irsel TEZER[2], Serap SAYGI[2], Kader K. OGUZ[1, 3]

[1]National Magnetic Resonance Research Center (UMRAM), Ankara, Turkey; [2]Department of Neurology, Hacettepe University, Ankara, Turkey; [3]Department of Radiology, Hacettepe University, Ankara, Turkey

Computer 18 4274. Insight Into Neuromelanin-MRI Z-Spectrum Contrast of the Substantia Nigra

Paula Trujillo[1, 2], Paul Summers[1], Luca Mainardi[2], Sergio Cerutti[2], Seth A. Smith[3, 4], Alex K. Smith[3, 4], Antonella Costa[1]

[1]Department of Neuroradiology, Fondazione IRCCS Ca' Granda - Ospedale Maggiore Policlinico, Milan, MI, Italy; [2]Department of Electronics, Information and Bioengineering, Politecnico di Milano, Milan, MI, Italy; [3]Vanderbilt University Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [4]Department of Biomedical Engineering, Vanderbilt University, Nashville, TN, United States

Computer 19 4275. Quantitative Susceptibility Mapping as a Potential Biomarker in Parkinson's Disease: A Clinical Application Study

Sung-han Lin[1], Chin-Song Lu[2], Yi-Hsin Weng[2], Yao-Liang Chen[3], Yi-Ming Wu[3], Jiun-Jie Wang[1]

[1]Medical Imaging and Radiological Science, Chang Gung University, Taoyuan County, Taiwan, Taiwan; [2]Department of Neurology, Chang Gung Memorial Hospital and College of Medicine, Chang Gung University, Taoyuan, Taiwan; [3]Department of Radiology and Intervention, Chang Gung Memorial Hospital, Taoyuan, Taiwan

Computer 20 **4276. Brain Changes in End-Stage Renal Disease Patients with Hemodialysis: A Voxel-Based Analysis of Morphometry and CBF Based on Cognition Assessment**
Bo Hou[1], Ke Zheng[2], Hui You[1], Jing Yuan[3], Hai-yun Wang[2], Xue-mei Li[2], Feng Feng[1]
[1]Department of Radiology, Peking Union Medical College Hospital, Beijing, China; [2]Department of Nephrology, Peking Union Medical College Hospital, Beijing, China; [3]Department of Neurology, Peking Union Medical College Hospital, Beijing, China

Computer 21 **4277. Altered Striatal Functional Connectivity in Parkinson's Disease Patients with Impulse Control Disorder**
Yi-Ming Wu[1], Chin-Song Lu[2], Yi-Hsin Weng[2], Yao-Liang Chen[1], Sung-han Lin[3], Jiun-Jie Wang[3]
[1]Department of Radiology and Intervention, Chang Gung Memorial Hospital, Taoyuan, Taiwan; [2]Department of Neurology, Chang Gung Memorial Hospital and College of Medicine, Chang Gung University, Taoyuan, Taiwan; [3]Medical Imaging and Radiological Science, Chang Gung University, Taoyuan, Taiwan

Computer 22 **4278. Assessing Iron Load in Deep Grey Matter Brain Nuclei of Parkinson's Disease with L2-Regularized Quantitative Susceptibility Mapping**
Darrell Ting Hung Li[1], Edward Sai Kam Hui[1], Queenie Chan[2], Siew-eng Chua[3], Grainne McAlonan[3, 4], Shu Leong Ho[5], Henry Ka Fung Mak[1]
[1]Department of Diagnostic Radiology, The University of Hong Kong, Hong Kong, Hong Kong; [2]Philips Healthcare, Hong Kong, China; [3]Department of Psychiatry, Queen Mary Hospital, The University of Hong Kong,, Hong Kong; [4]Department of Forensic and Neurodevelopmental Science, Institute of Psychiatry, King’s College London, London, United Kingdom; [5]Department of Medicine, The University of Hong Kong, Hong Kong

Computer 23 **4279. Altered Spontaneous Brain Activity in Type 2 Diabetes Related Cognitive Dysfunction: A Resting-State Functional MRI Study**
Ying Xiong[1], Zhipeng Xu[2], Qiang Zhang[3], Shiqi Yang[1], Shun Zhang[1], Wenzhen Zhu[1]
[1]Department of Radiology, Tongji Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, Hubei, China; [2]Pathophysiology Department, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, Hubei, China; [3]Neurology department, Tongji Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, Hubei, China

Computer 24 **4280. A Tract Based Spatial Statistic Study of Fractional Anisotropy Alterations Caused by Simian Immunodeficiency Virus Infection**
Zhenchao Tang[1], Zhenyu Liu[2], Jiaojiao Liu[3], Hongjun Li[3], Enqing Dong[1], Jie Tian[2]
[1]School of Mechanical, Electrical & Information Engineering, Shandong University, Weihai, Shandong Province, China; [2]Institute of Automation, Chinese Academy of Sciences, Beijing, China; [3]Beijing YouAn Hospital, Capital Medical University, Beijing, China

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Computer 25 **4281. Quantitative Susceptibility Mapping of the Motor Cortex in ALS and PLS Patients: a Biomarker for Upper Motor Neuron Dysfunction**
Gerd Melkus[1, 2], Santanu Chakraborty[1, 2], Pierre Bourque[3]
[1]Department of Medical Imaging, The Ottawa Hospital, Ottawa, ON, Canada; [2]Department of Radiology, University of Ottawa, Ottawa, ON, Canada; [3]Department of Neurology, University of Ottawa, Ottawa, ON, Canada

Computer 26 **4282. Longitudinal Diffusion Tensor Imaging of the Rat Brain After Hexachlorophene Exposure**
Jaivijay Ramu[1], Tetyana Konak[1], Merle G. Paule[1], Joseph Hanig[2], Serguei Liachenko[1]
[1]Neurotoxicology, NCTR / FDA, Jefferson, AR, United States; [2]OTR, CDER / FDA, White Oak, MD, United States

Computer 27 **4283. Altered Default Mode Network Functional Connectivity and White Matter Integrity in Parkinson's Disease and Relation with Cognitive Functions**
Arzu Ceylan HAS[1], Ozlem CELEBI[2], Andac UZDOGAN[3], Filiz AKBIYIK[3], Bulent ELIBOL[2], Esen SAKA[2], Kader K. OGUZ[1, 4]
[1]National Magnetic Resonance Research Center (UMRAM), Ankara, Turkey; [2]Department of Neurology, Hacettepe University, Ankara, Turkey; [3]Department of Biochemistry, Hacettepe University, Ankara, Turkey; [4]Department of Radiology, Hacettepe University, Ankara, Turkey

Computer 28 **4284. Transverse Relaxation and Volumetric Neural Changes in the H67D HFE Mouse Model and Cognitively Normal Healthy H63D-HFE Human Genotype Carriers**
Douglas G. Peters[1, 2], Carson J. Purnell[1], Jian-Li Wang[3], Paul J. Eslinger[4], Megha Vasavada[3], Fatima Ali-Rahmani[1], Qing X. Yang[3], James R. Connor[1], Mark David Meadowcroft[1, 3]
[1]Neurosurgery, The Pennsylvania State University - College of Medicine, Hershey, PA, United States; [2]Neural and Behavioral Sciences, The Pennsylvania State University - College of Medicine, Hershey, PA, United States; [3]Radiology, The Pennsylvania State University - College of Medicine, Hershey, PA, United States; [4]Neurology, The Pennsylvania State University - College of Medicine, Hershey, PA, United States

Computer 29 **4285. Lateralization of Temporal Lobe Epilepsy Using a Combinational Model of Electroencephalographic and Imaging**
Fariborz Mahmoudi[1, 2], Mohammad-Reza Nazem-Zadeh[1], Jason M. Schwalb[3], Ellen L. Air[3], Hassan Bagher-Ebadian[1], Manpreet Kaur[3], Rushna Ali[3], Saeed Shokri[1], Kost V. Elisevich[4], Hamid Soltanian-Zadeh[1, 5]
[1]Departments of Radiology, Research Administration, Henry Ford Health System, Detroit, MI, United States; [2]Computer and It Engineering Faculty, Islamic Azad University, Qazvin Branch, Qazvin, Iran; [3]Departments of Neurosurgery, Henry Ford Health System, Detroit, MI, United States; [4]Department of Clinical Neurosciences, Spectrum Health System, Grand Rapids, MI, United States; [5]CIPCE, School of Electrical and Computer Engineering, University of Tehran, Tehran, Iran

Computer 30 **4286. Detecting Alterations in Caudal Portion of Substantia Nigra in Parkinson's Disease**
Xiangchuan Chen[1], Daniel Huddleston[1, 2], Jason Langley[1], Xiaoping Hu[1]
[1]Emory University, Atlanta, GA, United States; [2]Kaiser Permanente Center for Health Research Southeast, Atlanta, GA, United States

Computer 31 **4287. Eigenvector Centrality of Resting-State fMRI in the Brainstem: A Potential Marker for Parkinson's Disease Pathology**
Štefan Holiga[1, 2], Robert Jech[3], Karsten Mueller[1], Dušan Urgošík[4], Matthias L. Schroeter[1, 2], Harald E. Möller[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; [2]Clinic for Cognitive Neurology & Leipzig Research Center for Civilization Diseases, University of Leipzig, Leipzig, Germany; [3]Department of Neurology and Center of Clinical Neuroscience, First Faculty of Medicine, Charles University in Prague, Czech Republic; [4]Department of Radiation and Stereotactic Neurosurgery, Na Homolce Hospital, Prague, Czech Republic

Computer 32 **4288. An MRI-Based Method to Quantify Apoptosis *In Vivo***
Chenchen Liu[1], Nuri B. Farber[2], Joel R. Garbow[3], Joseph JH Ackerman[4]
[1]Chemistry, Washington University in St.Louis, St. Louis, MO, United States; [2]Psychiatry, Washington University in St.Louis, St. Louis, MO, United States; [3]Radiology, Washington University in St.Louis, St. Louis, MO, United States; [4]Chemistry and Radiology, Washington University in St.Louis, St. Louis, MO, United States

Computer 33 **4289. Quantitative Assessment of MRI T_2 Response to Kainic Acid Neurotoxicity in Rats *In Vivo***
Serguei Liachenko[1], Jaivijay Ramu[1], Tetyana Konak[1], Merle Paule[1], Joseph Hanig[2]
[1]Neurotoxicology, NCTR / FDA, Jefferson, AR, United States; [2]OTR, CDER / FDA, White Oak, MD, United States

Computer 34 **4290. Comparison of Chemical Exchange Saturation Transfer MR Imaging and Diffusion Tensor Imaging in Parkinson's Disease at 3 Tesla**
Chunmei Li[1], Xuna Zhao[2], Haibo Chen[1], Jinyuan Zhou[3], Min Chen[1]
[1]Beijing Hospital, Beijing, China; [2]Peking University, Beijing, China; [3]Johns Hopkins University, MD, United States

Computer 35 **4291. Detection of the Local Volumes of White Matter Lesions in Type 2 Diabetes Mellitus by an Automatic Measurement Method**
Xiaoling Zhang[1], Bundy Wong[2], Min Tang[1], Sipan Chen[1], Defeng Wang[2], Jian Yang[3]
[1]Department of Radiology, Shaanxi Provincial People's Hospital, Xi'an, Shaanxi, China; [2]Department of Imaging and Interventional Radiology, The Chinese University of Hong Kong, New Territories, Hong Kong; [3]Department of Radiology, Xi'an Jiao Tong University, Xi'an, Shaanxi, China

Computer 36 4292. Writer's Cramp Primary Dystonia Shows Brain Gray and White Matter Alterations: A Multimodal Imaging Study.

Massimo Filippi[1], Federica Agosta[1], Lidia Sarro[1], Aleksandra Tomic[2], Sebastiano Galantucci[1], Paola Valsasina[1], Marina Svetel[2], Alessandro Sodero[1], Nikola Kresojevic[2], Giancarlo Comi[3], Vladimir S. Kostic[2]
[1]Neuroimaging Research Unit, Institute of Experimental Neurology, San Raffaele Scientific Institute, Vita-Salute San Raffaele University, Milan, Italy; [2]Clinic of Neurology, Faculty of Medicine, University of Belgrade, Belgrade, Yugoslavia; [3]Department of Neurology, San Raffaele Scientific Institute, Vita-Salute San Raffaele University, Milan, Italy

Computer 37 4293. Long Term MRI and MR Spectroscopic Evaluation of Gene Therapy in a Feline Model of Neurologic Disease.

Heather L. Gray-Edwards[1], Nouha Salbi[2, 3], Ashley N. Randle[1], Judith Hudson[4], Ronald Beyers[5], Miguel Sena Esteves[6], Thomas Denney[5, 7], Douglas Martin[1, 8]
[1]Scott-Ritchey Research Center, Auburn Univeristy, Auburn, Al, United States; [2]Seimens Healthcare, Malvern, PA, United States; [3]Auburn Univeristy MRI Research Center, Auburn Univeristy, AL, United States; [4]Clinical Sciences, Auburn Univeristy, AL, United States; [5]Auburn University MRI Research Center, Auburn Univeristy, AL, United States; [6]Neurology, University of Massachusetts, MA, United States; [7]Department of Electrical Engineering , Auburn Univeristy, AL, United States; [8]Anatomy, Phsiology and Pharmacology, Auburn Univeristy, AL, United States

Computer 38 4294. MRI Patterns of Atrophy Associated with Parkinson's Subtypes

Yue Xing[1], Stefan Schwarz[1], Nin Bajaj[2], Penny Gowland[3], Dorothee Auer[1]
[1]Sir Peter Mansfield Imaging Centre, School of Medicine, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]Division of Neurology, Nottingham University Hospitals NHS Trust, Nottingham, Nottinghamshire, United Kingdom; [3]Sir Peter Mansfield Imaging Centre, School of Physics and Astronomy, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

Computer 39 4295. An Arterial Spin Labelling Study Revealing Altered Neurovascular Status in Idiopathic Parkinson's Disease; Comparisons with Cerebrovascular Disease

Sarah Al-Bachari[1], Hedley Emsley[2], Rishma Vidyasagar[1, 3], Laura Parkes[4]
[1]Imaging, University of Manchester, Manchester, United Kingdom; [2]Neurology, Royal Preston Hospital, Preston, Lancashire, United Kingdom; [3]Department of Anatomy and Neurosciences, University of Melbourne,Victoria,, Victoria, 3010, Australia; [4]Imaging, Manchester University, Manchester, United Kingdom

Computer 40 4296. Serial Measurements of Structural Connectivity and Diffusion-Tensor Metrics in Parkinson's Disease

Andre Ticlo[1], Sofia Reimão[2], Hugo Alexandre Ferreira[1], João Marcos Sousa[1], Daisy Abreu[3], Joaquim Ferreira[3], Jorge Campos[2], Rita Gouveia Nunes[1]
[1]Instituto de Biofisica e Engenharia Biomedica, Faculdade de Ciencias, Universidade de Lisboa, Lisbon, Portugal; [2]Neurological Imaging Department of Hospital Santa Maria, Centro Hospitalar Lisboa Norte, Lisbon, Portugal; [3]Clinical Pharmacology Unit, Instituto de Medicina Molecular, Lisbon, Portugal

Computer 41 4297. Characterizing Neurodegeneration in Progressive Supranuclear Palsy Using VBM and SVM Classification

Karsten Mueller[1], Sandrine Bisenius[1], Adrian Danek[2], Janine Diehl-Schmid[3], Klaus Fassbender[4], Hans Foerstl[3], Armin Giese[2], Holger Jahn[5], Frank Jessen[6], Jan Kassubek[7], Johannes Kornhuber[8], Bernhard Landwehrmeyer[7], Martin Lauer[9], Albert Ludolph[7], Markus Otto[7], Johannes Prudlo[10], Anja Schneider[11], Katharina Stuke[1], Matthias L. Schroeter[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; [2]Clinic of Neurology and Center for Neuropathology and Prion Research, Ludwig Maximilian University of Munich, Germany; [3]Clinic and Polyclinic for Psychiatry and Psychotherapy, Technical University of Munich, Germany; [4]Clinic and Polyclinic for Neurology, Saarland University Homburg, Germany; [5]Clinic for Psychiatry and Psychotherapy, University Medical Center Hamburg-Eppendorf, Germany; [6]Clinic and Polyclinic for Psychiatry and Psychotherapy, University of Bonn, Germany; [7]Clinic and Polyclinic for Neurology, University of Ulm, Germany; [8]Clinic for Psychiatry and Psychotherapy, University of Erlangen, Germany; [9]Clinic and Polyclinic for Psychiatry, Psychosomatic Medicine, and Psychotherapy, University of Wuerzburg, Germany; [10]Clinic and Polyclinic for Neurology, University of Rostock, Germany; [11]Clinic for Psychiatry and Psychotherapy, University of Goettingen, Germany

Computer 42 4298. An Improved SWI Method for Nigrosome 1 Imaging

Yangsoo Ryu[1], Yoonho Nam[1], Han Jang[1], Sung Suk Oh[2], Eung Yeop Kim[3], Jongho Lee[1]
[1]Department of Electrical and Computer Engineering, Seoul National University, Seoul, Korea; [2]Medical Device Development Center, Daegu-Gyeongbuk Medical Innovation Foundation, Daegu, Korea; [3]Gachon University Gil Medical Center, Radiology, Incheon, Korea

Computer 43 **4299. Alterations of Water Diffusion and Magnetization Transfer Metrics in the Brains of Amyotrophic Lateral Sclerosis Patients**
Florian Borsodi[1], Christian Langkammer[2], Valeriu Culea[1], Lukas Pirpamer[1], Stefan Quasthoff[1], Christian Enzinger[1, 3], Reinhold Schmidt[1], Franz Fazekas[1], Stefan Ropele[1]
[1]Dept. of Neurology, Medical University of Graz, Graz, Austria; [2]MGH/HST Martinos Center for Biomedical Imaging, Harvard Medical School, Boston, MA, United States; [3]Div. of Neuroradiology, Dept. of Radiology, Medical University of Graz, Graz, Austria

Computer 44 **4300. Altered Hippocampal White Matter Connectivity and Memory Impairment in Type 2 Diabetes Mellitus**
Frank C.G. van Bussel[1], Walter H. Backes[1], Paul A.M. Hofman[1], Alfons G.H. Kessels[2], Tamar M. van Veenendaal[1], Harm J. van de Haar[1], Martin P.J. van Boxtel[3], Miranda T. Schram[4], Coen D.A. Stehouwer[4], Joachim E. Wildberger[1], Jacobus F.A. Jansen[1]
[1]Radiology, Maastricht University Medical Center, Maastricht, Limburg, Netherlands; [2]Clinical Epidemiology and Medical Technology Assessment, Maastricht University Medical Center, Maastricht, Limburg, Netherlands; [3]Psychiatry and Neuropsychology, Maastricht University Medical Center, Maastricht, Limburg, Netherlands; [4]Internal Medicine, Maastricht University Medical Center, Maastricht, Limburg, Netherlands

Computer 45 **4301. Neuromelanin-Sensitive Imaging Correlates of Idiopathic Rapid Eye Movement Sleep Behavior Disorders**
Mickael Ehrminger[1], Alice Latimier[2], Daniel Garcia-Lorenzo[3], Smaranda Leu-Semenescu[4], Marie Vidailhet[5], Isabelle Arnulf[4], Stephane Lehericy[6]
[1]Ecole Normale Superieure, Paris, France; [2]Service des pathologies du sommeil, ICM - Institut du Cerveau et de la Moelle, Paris, France; [3]CENIR - Centre for NeuroImaging Research, ICM - Institut du Cerveau et de la Moelle, Paris, France; [4]Service des pathologies du sommeil, Hopital Pitie-Salpetriere, Paris, France; [5]Service de Neurologie, ICM - Institut du Cerveau et de la Moelle, Paris, France; [6]CENIR - Center for NeuroImaging Research, ICM - Institut du Cerveau et de la Moelle, Paris, France

Computer 46 **4302. Region-Specific Disturbed Iron Distribution in Early Idiopathic Parkinson's Disease Measured by Quantitative Susceptibility Mapping**
Naying He[1], Fuhua Yan[1], Huawei Ling[1], Yong Zhang[2], Zhongping Zhang[3]
[1]Ruijin Hospital,Shanghai Jiao Tong University School of Medicine, Shanghai, China; [2]MR Research, GE Healthcare, China, Shanghai, China; [3]MR Research, GE Healthcare, China, Guangzhou, China

Computer 47 **4303. Multimodal MRI of a Novel Transgenic Model of Parkinson's Disease (MitoPark Mice)**
Linlin Cong[1], Eric R. Muir[1], Yusheng Qian[2], Cang Chen[2], Senlin Li[2], Timothy Q. Duong[1]
[1]Research Imaging Institute, University of Texas Healthy Science Center at San Antonio, san antonio, TX, United States; [2]Departments of Medicine and Pharmacology, University of Texas Healthy Science Center at San Antonio, san antonio, TX, United States

Computer 48 **4304. Magnetic Resonance Spectroscopy in the Motor and Sensory Cortices Following Surgery for Cervical Spondylotic Myelopathy**
Sandy Goncalves[1, 2], Todd K. Stevens[2], Robert Bartha, [12], Neil Duggal[1, 3]
[1]Medical Biophysics, Western University, London, Ontario, Canada; [2]Centre for Functional and Metabolic Mapping, Robarts Research Institute - Western University, London, Ontario, Canada; [3]Clinical Neurological Sciences, University Hospital - London Health Sciences Centre, London, Ontario, Canada

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Computer 49 **4305. Chemical Exchange Saturation Transfer MR Imaging of Alzheimer¡¯s Disease at 3 Tesla: A Preliminary Study**
Rui Wang[1], Saying Li[1], Min Chen[1], Jinyuan Zhou[2], Dantao Peng[3], Chen Zhang[1], Yongming Dai[4]
[1]Department of Radiology, Beijing Hospital, Beijing, China; [2]Johns Hopkins University School of Medicine, MD, United States; [3]Department of Neurology, China-Japan Friendship Hospital, Beijing, China; [4]Philips Healthcare, Shanghai, China

Computer 50 **4306. Pharmocological Treatment with HDAC-6 Inhibitor (ACY-738) Recovers Alzheimer's Phenotype in APP/PS1 Mice**
Tabassum Majid[1, 2], Deric Griffin[1, 2], Zachary Criss II[1], Asante Hatcher[3], Matthew Jarpe[4], Robia Pautler[1, 2]
[1]Translational Biology and Molecular Medicine, Baylor College of Medicine, Houston, TX, United States; [2]Molecular Physiology & Biophysics , Baylor College of Medicine, Houston, TX, United States; [3]Department of Neuroscience, Baylor College of Medicine, Houston, TX, United States; [4]Acetylon Pharmaceuticals, Boston, MA, United States

Computer 51 4307. The Prospectively Validated RfMRI Biomarkers for Mild Cognitive Impairment

Gang Chen[1], Hao Shu[1, 2], Guangyu Chen[1], Wenjun Li[3], Zhan Xu[1], Zan Wang[2], Duan Liu[2], B. Douglas Ward[1], Jennifer Jones[4], Malgorzata Franczak[4], Joseph Goveas[3], Piero Antuono[4], Zhijun Zhang[2], Shi-Jiang Li[1]
[1]Biophysics, Medical College of Wisconsin, milwaukee, WI, United States; [2]Neurology, Affiliated ZhongDa Hospital of Southeast University, China; [3]Psychiatry, Medical College of Wisconsin, milwaukee, WI, United States; [4]Neurology, Medical College of Wisconsin, Milwaukee, WI, United States

Computer 52 4308. Structural and Functional Connectivity in Dementia with Lewy Bodies Compared to Alzheimer Disease

Vanda Viola[1], Laura Serra[1], Elisa Tuzzi[1], Chiara Mastropasqua[1], Barbara Spanò[1], Barbara Basile[1], Mario Torso[1], Giovanni Giulietti[1], Elena Makovac[1], Camillo Marra[2], Mara Cercignani[3], Carlo Caltagirone[4, 5], Marco Bozzali[1]
[1]Neuroimaging Laboratory, Santa Lucia Foundation IRCCS, Roma, RM, Italy; [2]Institute of Neurology, Università Cattolica, Rome, Italy; [3]Clinical Imaging Science Centre, Brighton and Sussex Medical School, Brighton, United Kingdom; [4]Departmente of Clinical and Behavioral Neurology, Santa Lucia Foundation IRCCS, Rome, Italy; [5]Department of Neuroscience, Università "Tor Vergata", Rome, Italy

Computer 53 4309. White Matter Abnormalities in Type-2 Diabetes Patients with Mild Cognitive Impairment: A Diffusion Tensor Imaging Study

Ying Xiong[1, 2], Yi Sui[2], Zhipeng Xu[3], Shiqi Yang[1], Kejia Cai[2, 4], Wenzhen Zhu[1], Xiaohong Joe Zhou[2, 4]
[1]Department of Radiology, Tongji Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, Hubei, China; [2]Center for MR Research, University of Illinois at Chicago, Chicago, IL, United States; [3]Pathophysiology Department, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, Hubei, China; [4]Department of Radiology, University of Illinois at Chicago, Chicago, IL, United States

Computer 54 4310. Differences in DMN Functional Connectivity Before and After Clinical Diagnosis of Amnestic MCI

Eva Manzanedo Sáenz[1], Alexandra Cristobal Huerta[1], Elena Molina Molina[1], Ana Beatriz Solana[2], Virginia Mato[1], Daniel García Frank[1], Eva Alfayate[3], Juan Álvarez-Linera[4], Juan Antonio Hernández-Tamames[1]
[1]Universidad Rey Juan Carlos, Móstoles, Madrid, Spain; [2]General Electric, Munich, Germany; [3]Fundación Reina Sofía - Fundación CIEN, Madrid, Spain; [4]Hospital Rúber Internacional, Madrid, Spain

Computer 55 4311. Investigating the Role of Brain Stem in Alzheimer's Disease Using Directional Brain Networks Derived from Resting State fMRI

Sinan Zhao[1], Archana Venkataraman[2], Peipeng Liang[3, 4], Gopikrishna Deshpande[1, 5]
[1]AU MRI Research Center, Department of Electrical and Computer Engineering, Auburn university, Auburn, AL, United States; [2]Department of Diagnostic Radiology, School of Medicine, Yale University, New Haven, CT, United States; [3]Department of Radiology, Xuanwu Hospital, Capital Medical University, Beijing, China; [4]Beijing Key Laboratory of Magnetic Resonance Imaging and Brain Informatics, Key Laboratory for Neurodegenerative Diseases, Ministry of Education, Beijing, China; [5]Department of Psychology, Auburn University, Auburn, AL, United States

Computer 56 4312. 4D Flow MRI for Intracranial Hemodynamic Assessment in Alzheimer's Disease

Leonardo A. Rivera-Rivera[1], Patrick Turski[2], Eric M. Schrauben[1], Phillip Kilgas[1], Carson Hoffman[1], Kevin M. Johnson[1], Michael Loecher[1], Chuck Illingworth[2], Sterling C. Johnson[2], Oliver Wieben[1, 3]
[1]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States; [2]Medicine, University of Wisconsin-Madison, WI, United States; [3]Radiology, University of Wisconsin-Madison, WI, United States

Computer 57 4313. Mean Diffusivity as a Non-Invasive Biomarker of the Amount of Amyloid Plaques in Alzheimer's Disease: A Preliminary Evaluation in a Mouse Model.

Matteo Figini[1], Alessandro Scotti[1], Ileana Zucca[1], Emanuela Maderna[2], Margherita Ruggerone[2], Marcella Catania[2], Giuseppe Di Fede[2], Fabio Moda[2], Fabrizio Tagliavini[2], Maria Grazia Bruzzone[3]
[1]Scientific Direction, Fondazione IRCCS Istituto Neurologico "Carlo Besta", Milan, Italy; [2]Neuropathology Unit, Fondazione IRCCS Istituto Neurologico "Carlo Besta", Milan, Italy; [3]Neuroradiology Unit, Fondazione IRCCS Istituto Neurologico "Carlo Besta", Milan, Italy

Computer 58 4314. Brain Iron Levels as Measured by Quantitative Susceptibility Mapping (QSM) Are Not Significantly Different Between Subjects with Mild Cognitive Impairment (MCI) and Controls

Jiri M.G. van Bergen[1], Xu Li[2], Michael Wyss[3], Simon J. Schreiner[1], Stefanie C. Steininger[1], Jun Hua[2], Roger Nitsch[1], Klaas P. Pruessmann[3], Peter C.M. van Zijl[2], Marilyn S. Albert[4], Christoph Hock[1], Paul G. Unschuld[1]

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Computer 59 **4315. Longitudinal GluCEST Imaging in a Mouse Model of Tauopathy**

Rachelle Crescenzi[1, 2], Catherine DeBrosse[3, 4], Ravi Prakash Reddy Nanga[4], Kevin D'Aquilla, Guruprasad Krishnamoorthy[4], Leonard Nettey[4], Hari Nath[4], Hari Hariharan[4], John A. Detre[5], Virginia M.-Y. Lee[6], Ravinder Reddy[4]

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Computer 60 **4316. Deterioration from Healthy to Mild Cognitive Impairment and Alzheimer’s Disease Mirrored in Corresponding Loss of Centrality in Directed Brain Networks**

Sinan Zhao[1], CK Dharmendra Kumar[2], D Narayana Dutt[2], Peipeng Liang[3, 4], Gopikrishna Deshpande[1, 5]

[1]AU MRI Research Center, Department of Electrical and Computer Engineering, Auburn University, Auburn, AL, United States; [2]Department of Medical Electronics, Dayananda Sagar College of Engineering, Bangalore, India; [3]Department of Radiology, Xuanwu Hospital, Capital Medical University, Beijing, China; [4]Beijing Key Laboratory of Magnetic Resonance Imaging and Brain Informatics, Key Laboratory for Neurodegenerative Diseases, Ministry of Education, Beijing, China; [5]Department of Psychology, Auburn University, Auburn, AL, United States

Computer 61 **4317. Brain T1rho MR Imaging in Parkinson Disease: Female Vs Male**

Santosh K. Yadav[1], Anup Singh[2, 3], Arshi Rizwan[4], Christos Davatzikos[5], Elias R. Melhem[6], Deepak Kaura[1], Ena Wang[1], Francesco M. Marincola[1], Mohammad Haris[1, 7]

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Computer 62 **4318. Apolipoprotein E ε4 Genotype Is Associated with the Changes in Cortical Thickness and CSF Biomarkers in Mild Cognitive Impairment and Alzheimer’s Disease**

Santosh K. Yadav[1], Anup Singh[2, 3], Arshi Rizwan[4], Christos Davatzikos[5], Elias R. Melhem[6], Deepak Kaura[1], Ena Wang[1], Francesco M. Marincola[1], Mohammad Haris[1, 2]

[1]Research Branch, Sidra Medical and Research Center, Doha, Qatar; [2]Radiology, Center for Magnetic Resonance and Optical Imaging, University of Pennsylvania, Philadelphia, PA, United States; [3]Center for Biomedical Engineering, Indian institute of Technology, New Delhi, India; [4]All India Institute of Medical sciences, New Delhi, India; [5]Section of Biomedical Image Analysis, University of Pennsylvania, Philadelphia, PA, United States; [6]Department of Diagnostic Radiology and Nuclear Medicine, University of Maryland Medical Center,, MD, United States

Computer 63 **4319. Differential MRI Relaxation in Alzheimer’s Patients with Mutant HFE and Transferrin Genotypes**

Mark David Meadowcroft[1, 2], Douglas G. Peters[1, 3], Carson J. Purnell[1], Jian-Li Wang[2], Paul J. Eslinger[4], Megha Vasavada[2], Qing X. Yang[2], James R. Connor[1]

[1]Neurosurgery, The Pennsylvania State University - College of Medicine, Hershey, PA, United States; [2]Radiology, The Pennsylvania State University - College of Medicine, Hershey, PA, United States; [3]Neural and Behavioral Sciences, The Pennsylvania State University - College of Medicine, Hershey, PA, United States; [4]Neurology, The Pennsylvania State University - College of Medicine, Hershey, PA, United States

Computer 64 **4320. Correlation Between Cerebral Glutathione, Dietary Intake and Cognitive Function in Aging and Alzheimer’s Disease**

In-Young Choi[1, 2], Jeffrey M. Burns[2], Debra K. Sullivan[3], Hung-Wen Yeh[4], William M. Brooks[1, 2], Phil Lee[5, 6]

[1]Hoglund Brain Imaging Center, University of Kansas Medical Center, Kansas City, KS, United States; [2]Neurology, University of Kansas Medical Center, Kansas City, KS, United States; [3]Dietetics and Nutrition, University of Kansas Medical Center, Kansas City, KS, United States; [4]Biostatistics, University of Kansas Medical Center, Kansas City, KS, United States; [5]Hoglund Brain Imaging Center , University of Kansas Medical Center, Kansas City, KS, United States; [6]Molecular & Integrative Physiology, University of Kansas Medical Center, Kansas City, KS, United States

Computer 65 4321. Double Inversion Recovery Imaging Improves to Evaluate Brain Tissue Volume Loss in Patients with Alzheimer¡¯s Disease Compared to That of 3D T1-Weighted Imaging
Geon-Ho Jahng[1], Danbi Kim[1], Soonchan Park[1], Dong Kyun Lee[2], Jong-Min Lee[2], Hak Young Rhee[3], Chang-Woo Ryu[1], Jang-Hoon Oh[4], Hyug-Gi Kim[4], Dal-Mo Yang[1]
[1]Radiology, Kyung Hee University Hospital at Gangdong, Seoul, Korea; [2]Biomedical Engineering, Hanyang University, Seoul, Korea; [3]Neurology, Kyung Hee University Hospital at Gangdong, Seoul, Korea; [4]Biomedical Engineering, Kyung Hee University, Suwon, Gyeonggi-do, Korea

Computer 66 4322. Combination of Intravoxel Incoherent Motion (IVIM) and Pulsed Arterial Spin Labeling (PASL) MRI on Studying Characteristic Features of Early Stage Alzheimer's Disease
Zhenhua Zhang[1], Zhongwei Chen[1], Haiwei Miu[1], Qiong Ye[1]
[1]The department of Radiology, The First Affiliated Hospital of Wenzhou Medical University, Wenzhou, Zhejiang, China

Computer 67 4323. Diffusion Kurtosis Imaging Reveals Widespread White Matter Abnormalities in Alzheimer' S Disease
Weiwei Wang[1], Rui Hu[1], Ziheng Zhang[2], Qingwei Song[1], Ailian Liu[1], Yanwei Miao[1]
[1]Radiology Department, the First Affiliated Hospital of Dalian Medical University, Dalian, Liaoning, China; [2]GE Healthcare China, Beijing, China

Computer 68 4324. Comparisons of QSM Data Obtained from a Single Echo and Multiple Echoes in Patients with Cognitive Normal, Mild Cognitive Impairment, and Alzheimer's Disease
Hyug-Gi Kim[1], Dan-Bi Kim[2], Jang-Hoon Oh[1], Hak Young Rhee[3], Chang-Woo Ryu[2], Soon Chan Park[2], Dal-Mo Yang[2], Yi Wang[1, 4], Tian Liu[4], Geon-Ho Jahng[2]
[1]Biomedical Engineering, Kyung Hee University, YoungIn, Gyeonggi-do, Korea; [2]Radiology, Kyung Hee University Hospital-Gangdong, Seoul, Korea; [3]Neurology, Kyung Hee University Hospital-Gangdong, Seoul, Korea; [4]Biomedical Engineering and Radiology, Cornell University, New York, United States

Computer 69 4325. Changes of Indices in Diffusion Tensor Images of Patients with Depressive Symptoms in the Elderly with Dementia
Tsung-Yuan Li[1], Ni-Jung Chang[1], Wei-Che Wu[2], Jyh-Wen Chai[1, 3], Clayton Chi-Chang Chen[1, 4]
[1]Department of Radiology, Taichung Veterans General Hospital, Taichung, Taiwan, Taiwan; [2]Department of Psyciatry, Taichung Veterans General Hospital, Taichung, Taiwan, Taiwan; [3]College of Medicine, China Medical University, Taichung, Taiwan, Taiwan; [4]Department of Biomedical Engineering, Hung Kuang University, Taichung, Taiwan, Taiwan

Computer 70 4326. Searching for New Dementia-Related Features Within MRI: Keypoint Detection and Description
Elisabeth Stühler[1]
[1]Department of Computer and Information Science, University of Konstanz, Konstanz, Baden-Württemberg, Germany

Computer 71 4327. Mitochondrial Catalase Overexpression Recovers Axonal Transport Deficits and Improves Hippocampal Long-Term Potentiation in APP/PS1 Mice
Tabassum Majid[1, 2], Caiwei Guo[3], Tao Ma[4], Erik Klann[4], Robia Pautler[1, 2]
[1]Translational Biology and Molecular Medicine, Baylor College of Medicine, Houston, TX, United States; [2]Molecular Physiology & Biophysics, Baylor College of Medicine, Houston, TX, United States; [3]Department of Neuroscience, Baylor College of Medicine, Houston, TX, United States; [4]New York University, New York, United States

Computer 72 4328. Investigating Haemodynamic Changes in the Default Mode Network in Alzheimer's Disease
Richard J. Dury[1], Latha Velayudhan[2], Penny A. Gowland[1], Susan T. Francis[1]
[1]Sir Peter Mansfield Imaging Centre, The University of Nottingham, Nottingham, United Kingdom; [2]Department of Health Sciences, Leicester General Hospital, Leicester, United Kingdom

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Computer 73 **4329. Imaging Biomarker and Pathophysiology of Early Memory Impairment in Multiple Sclerosis: A Pre-Clinical Study with Diffusion-Tensor Imaging of Hippocampal Layers.**
Thomas Tourdias[1, 2], Vincent Planche[1], Bassem Hiba[3], Aline Desmedt[1], Gerard Raffard[3], Aude Panatier[1], Stéphane Oliet[1], Vincent Dousset[1, 2]
[1]INSERM U862 Neurocentre Magendie, University of Bordeaux, Bordeaux, France; [2]Department of Neuroradiology, Bordeaux University hospital, Bordeaux, France; [3]UMR CNRS 5536, University of Bordeaux, Bordeaux, France

Computer 74 **4330. SWI Lesion Load and Tissue Hypoxia in Multiple Sclerosis: A Study Using the Experimental Autoimmune Encephalomyelitis Animal Model at 9.4T**
Raveena Dhaliwal[1], Nabeela Nathoo[1], Ying Wu[1], James A. Rogers[2], V. Wee Yong[2], Jeff F. Dunn[1]
[1]Radiology, University of Calgary, Calgary, Alberta, Canada; [2]Clinical Neurosciences, University of Calgary, Calgary, Alberta, Canada

Computer 75 **4331. Vascular Expansion and Blood-Brain-Barrier Permeability: A Comparative Volumetric Study in Acute Japanese Macaque Encephalomyelitis**
Ian Tagge[1, 2], Steven Kohama[3], Jim Pollaro[1], Lawrence Sherman[3], Dennis Bourdette[4], Randy Woltjer[4], Scott Wong[3], William Rooney[1, 2]
[1]Advanced Imaging Research Center, Oregon Health & Science University, Portland, OR, United States; [2]Biomedical Engineering, Oregon Health & Science University, Portland, OR, United States; [3]Oregon National Primate Research Center, Oregon Health & Science University, OR, United States; [4]Neurology, Oregon Health & Science University, Portland, OR, United States

Computer 76 **4332. Diffusion Kurtosis Imaging Probes Cortical Alterations and White Matter Pathology Following Cuprizone-Induced Demyelination and Spontaneous Remyelination**
Caroline Guglielmetti[1], Jelle Veraart[2], Ella Roelant[3], Zhenhua Mai[4], Jasmijn Daans[5], Johan Van Audekerke[4], Jelle Praet[4], Peter Ponsaerts, jan Sijbers[2], Annemie Van der Linden[4], Marleen Verhoye[4]
[1]Bio Imaging Lab, University of Antwerp, WILRIJK, ANTWERPEN, Belgium; [2]IBBT Vision LaboratoryDepartment of Physics, University of Antwerp, ANTWERPEN, Belgium; [3]StatUa Center for Statistics, University of Antwerp, ANTWERPEN, Belgium; [4]Bio Imaging Lab, University of Antwerp, ANTWERPEN, Belgium; [5] Experimental Cell Transplantation Group, Laboratory of Experimental Hematology, Vaccine and Infect, ANTWERPEN, Belgium

Computer 77 **4333. Cerebral Blood Flow Modulation Insufficiency in Default Mode Network in Multiple Sclerosis: A Hypercapnia MRI Study**
Olga Marshall[1], Sanjeev Chawla[1], Hanzhang Lu[2], Ilya Kister[3], Jacqueline Smith[1], Yulin Ge[1]
[1]Radiology/Center for Biomedical Imaging, New York University School of Medicine, New York, NY, United States; [2]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, TX, United States; [3]Neurology, New York University School of Medicine, New York, NY, United States

Computer 78 **4334. Describing the Distribution of Myelin Water Fraction Change Among Early Stage MS Lesions**
Elizabeth Monohan[1], Wendy Vargas[1], Sneha Pandya[2], Michael Dayan[2], Thanh Nguyen[2], Ashish Raj[2], Sandra Hurtado[3], Susan Gauthier[1]
[1]Neurology and Neuroscience, Weill Cornell Medical College, New York, NY, United States; [2]Radiology, Weill Cornell Medical College, New York, NY, United States; [3]Public Health, Weill Cornell Medical College, New York, United States

Computer 79 **4335. Dynamic Changes in Venous Susceptibility in the Spinal Cord of an Animal Model of MS Are Detected with Susceptibility-Weighted Imaging**
Nabeela Nathoo[1, 2], Ying Wu[1], James A. Rogers[2, 3], V. Wee Yong[2, 3], Jeff F. Dunn[1, 4]
[1]Radiology, University of Calgary, Calgary, Alberta, Canada; [2]Hotchkiss Brain Institute, University of Calgary, Calgary, Alberta, Canada; [3]Clinical Neurosciences, University of Calgary, Calgary, Alberta, Canada; [4]Experimental Imaging Centre, University of Calgary, Calgary, Alberta, Canada

Computer 80 **4336. Advanced Imaging in Lesion and Normal-Appearing White Matter Over 2 Years in MS Patients Treated with Alemtuzumab**
Irene Vavasour[1], Alex MacKay[1, 2], David Li[1], Cornelia Laule[1, 3], Anthony Traboulsee

[1]Radiology, University of British Columbia, Vancouver, British Columbia, Canada; [2]Physics and Astronomy, University of British Columbia, Vancouver, British Columbia, Canada; [3]Pathology and Laboratory Medicine, University of British Columbia, Vancouver, British Columbia, Canada

Computer 81 4337. Longitudinal MR Frequency Shift Imaging in Patients with Clinically Isolated Syndrome

Vanessa Wiggermann[1, 2], Inga Ibs, [23], Stephanie M. Schoerner, [24], Enedino Hernández Torres[2, 5], Luanne Metz[6], David K.B. Li[2, 7], Anthony Traboulsee, [57], Alexander Rauscher[2, 5]
[1]Physics and Astronomy, Univerisity of British Columbia, Vancouver, BC, Canada; [2]Radiology, University of British Columbia, Vancouver, BC, Canada; [3]University of Osnabrueck, Germany; [4]Technical University of Dortmund, Germany; [5]UBC MRI Research Centre, Vancouver, BC, Canada; [6]Clinical Neurosciences, University of Calgary, Calgary, AB, Canada; [7]Medicine (Neurology), University of British Columbia, Vancouver, BC, Canada

Computer 82 4338. *In-Vivo* Measurement of Cerebral Metabolic Rate of Oxygen Consumption in an Animal Model of Multiple Sclerosis Using Combined MRI and Near-Infrared Spectroscopy

Thomas W. Johnson[1, 2], Linhui Yu[3], Kartikeya Murari[3], Jeff F. Dunn[1, 2]
[1]Radiology, University of Calgary, Calgary, Alberta, Canada; [2]Hotchkiss Brain Institute, Calgary, Alberta, Canada; [3]Electrical Engineering, University of Calgary, Calgary, Alberta, Canada

Computer 83 4339. Differences in Visual fMRI Activation and OCT Metrics Between Affected and Unaffected Eyes After Recovery from Optic Neuritis

Blessy Mathew[1], Mark J. Lowe[1], Pallab Bhattacharyya[1], Rob Bermel[1]
[1]Cleveland Clinic, Cleveland, OH, United States

Computer 84 4340. Local Tissue Volume Changes in Early MS Are Most Strongly Reflected in Non-Peripheral Grey Matter

Courtney A. Bishop[1, 2], Jean SZ Lee[3], Charlotte L. Thomas[4], Rebecca Quest[5], Lesley Honeyfield[5], Paolo A. Muraro[2, 6], Adam D. Waldman[2, 5], Rexford D. Newbould[1, 7]
[1]Image Analysis Department, Imanova Centre for Imaging Sciences, London, United Kingdom; [2]Division of Brain Sciences, Imperial College London, London, United Kingdom; [3]Radiology Department, Oxford University Hospitals NHS Trust, Oxford, United Kingdom; [4]Department of Medicine, St George's Hospital, London, United Kingdom; [5]Department of Imaging, Imperial College Healthcare NHS Trust, London, United Kingdom; [6]Department of Clinical Neurosciences, Imperial College Healthcare NHS Trust, London, United Kingdom; [7]Division of Experimental Medicine, Imperial College London, London, United Kingdom

Computer 85 4341. Phase Contrast MRI Differentiates Between Brain Lesions in Neuromyelitis Optica and Multiple Sclerosis – Preliminary Data from a 7T MRI Study

Tim Sinnecker[1], Sophie Hahndorf[1], Katharina Mueller[1], Petr Dusek[2, 3], Lutz Harms[4, 5], Sanjeev Chawla[6], Thoralf Niendorf[7, 8], Ilya Kister[9], Friedemann Paul[1, 4], Yulin Ge[6], Jens Wuerfel[1, 2]
[1]NeuroCure Clinical Research Center, Charité- Universitaetsmedizin, Berlin, Germany; [2]Institute of Neuroradiology, Universitaetsmedizin Goettingen, Niedersachsen, Germany; [3]1st Faculty of Medicine and General University Hospital in Prague, Department of Neurology and Center of Clinical Neuroscience, Charles University in Prague, Praha, Czech Republic; [4]Experimental and Clinical Multiple Sclerosis Research Center, Charité Universitaetsmedizin Berlin, Berlin, Germany; [5]Department of Neurology, Charité - Universitaetsmedizin Berlin, Berlin, Germany; [6]Department of Radiology, NYU School of Medicine, New York, NY, United States; [7]Berlin Ultrahigh Field Facility, Max Delbrueck Center for Molecular Medicine, Berlin, Germany; [8] Max Delbrueck Center for Molecular Medicine, Experimental and Clinical Research Center, Charité - Universitaetsmedizin Berlin , Berlin, Germany; [9]Multiple Sclerosis Care Center, Department of Neurology, NYU School of Medicine, New York, NY, United States

Computer 86 4342. High Percentage of MS Lesions Found to Have a Central Vein Using Single Slice SWI at 7 Tesla

Jacob Alois Matusinec[1], Zahra Hosseini[2], Junmin Liu[3], David A. Rudko[4], Matthew P. Quinn[3], Marcelo kremenchutzky[5], Ravi Menon[3, 6], Maria Drangova[3, 7]
[1]Medicine, Schulich School of Medicine & Dentistry, Western University, London, Ontario, Canada; [2]Biomedical Engineering Graduate Program, Western University, Ontario, Canada; [3]Imaging Research Laboratories, Robarts Research Institute, Western University, London, Ontario, Canada; [4]Brain Imaging Centre Montreal Neurological Hospital and Institute, McGill University, Quebec, Canada; [5]Department of Clinical Neurological Sciences, Schulich School of Medicine & Dentistry, Western University, London, Ontario, Canada; [6]Centre for Functional and Metabolic Mapping, Robarts Research Institute, Western University , London, Ontario, Canada; [7]Department of Medical Biophysics Schulich School of Medicine & Dentistry, Western University, Ontario, Canada

Computer 87 4343. Diagnose Acute Gadolinium Enhancing Multiple Sclerosis Lesions Using Gradient Echo MRI (R2* and QSM) Without Gadolinium Injection

Lijie Tu[1, 2], Yan Zhang[1, 3], Ajay Gupta[1], Joseph Comunale[1], Thanh Nguyen[1], Susan Gauthier[4], Yi Wang[1, 5]

[1]Radiology, Weill Cornell Medical College, New York, NY, United States; [2]Applied & Engineering Physics, Cornell University, Ithaca, NY, United States; [3]Radiology, Tongji Hospital, Tongji Medical College, Huazhong University of Science & Technoology, Wuhan, Hubei, China; [4]Neurology, Weill Cornell Medical College, New York, NY, United States; [5]Biomedical Engineering, Cornell University, Ithaca, NY, United States

Computer 88 **4344. Characterization of DTI Brain Connectivity in Different Clinical Forms of Multiple Sclerosis Patients Based on Graph Theory**

Gabriel KOCEVAR[1], Claudio STAMILE[1], Salem HANNOUN[1], Francois COTTON, [12], Françoise DURAND-DUBIEF, [13], Dominique SAPPEY-MARINIER[1, 4]
[1]CREATIS (CNRS UMR5220 & INSERM U1044), Université Lyon 1, INSA-Lyon, Villeurbanne, France; [2]Service de Radiologie, Centre Hospitalier Lyon-Sud, Hospices Civils de Lyon, Pierre-Benite, France; [3]Service de Neurologie A, Hôpital Neurologique, Hospices Civils de Lyon, Bron, France; [4]CERMEP - Imagerie du Vivant, Université de Lyon, Bron, France

Computer 89 **4345. Comparison of QSM, T2-Relaxometry and T2-Weighted Imaging at 7T for Assessment of Basal Ganglia Iron in MS Patients**

Petra Schmalbrock[1], Mary Russell[1], Grant K. Yang[1], Jacqueline A. Nicholas[2], Michael V. Knopp[1], David Pitt[3]
[1]Radiology, The Ohio State University, Columbus, OH, United States; [2]Neurology, The Ohio State University, Columbus, OH, United States; [3]Neurology, Yale School of Medicine, New Haven, CT, United States

Computer 90 **4346. Magnetization Transfer from Inhomogeneously Broadened Lines (IhMT): Application on Multiple Sclerosis (MS)**

Guillaume Duhamel[1], Arnaud le Troter[1], Valentin Prevost[1], Gopal Varma[2], Maxime Guye[1], Jean-Philippe Ranjeva[1], Jean Pelletier[3], David C. Alsop[2], Olivier M. Girard[1]
[1]Aix Marseille University, CRMBM / CNRS UMR 7339, Marseille, France; [2]Department of Radiology, BIDMC, Harvard Medical School, Boston, MA, United States; [3]Pôle de Neurosciences Cliniques, Service de Neurologie, APHM, Hôpital La Timone, Marseille, France

Computer 91 **4347. Deep Grey Matter Iron Deposition and Brain Atrophy in Early Multiple Sclerosis: A Longitudinal Study**

Matthew P. Quinn[1, 2], Joseph S. Gati[1], L Martyn Klassen[1], Marcelo Kremenchutzky[3], Ravi S. Menon[1, 2]
[1]Centre for Functional and Metabolic Mapping, Robarts Research Institute, Western University, London, Ontario, Canada; [2]Department of Medical Biophysics, Schulich School of Medicine & Dentistry, Western University, London, Ontario, Canada; [3]Department of Clinical Neurological Sciences, Schulich School of Medicine & Dentistry, Western University, London, Ontario, Canada

Computer 92 **4348. DTI and Visually Evoked Potential Changes in Mice with Optic Neuritis**

Christopher Nishioka[1], Jennifer Mei[2], Hsiao-Fang Liang[3], Wei-Xing Shi[4], Shu-Wei Sun[5, 6]
[1]Neuroscience, UC Riverside, Riverside, CA, United States; [2]Basic Science, Loma Linda University, Loma Linda, United States; [3]Basic Science, Loma Linda University, Loma Linda, CA, United States; [4]Pharmaceutical Science, Loma Linda University, CA, United States; [5]Basic Science and Radiation Medicine, Loma Linda University, CA, United States; [6]Neuroscience and Bioengineering, UC Riverside, CA, United States

Computer 93 **4349. Exploration of Advanced MR Imaging Contrasts for Automated Detection of White Matter and Cortical Lesions in Early-Stages of Multiple Sclerosis**

Mário João Fartaria de Oliveira[1, 2], Guillaume Bonnier[3, 4], Alexis Roche[3, 4], Tobias Kober[3, 4], Reto Meuli, David Rotzinger, Myriam Schluep[2], Renaud Du Pasquier[2], Jean-Philippe Thiran[4], Gunnar Krueger[3, 4], Cristina Granziera, [23], Meritxell Bach Cuadra[5]
[1]Advanced Clinical Imaging Technology, Siemens Healthcare IM BM PI & Department of Radiology, Centre Hospitalier Universitaire Vaudois and University of Lausanne (CHUV), Lausanne, Switzerland; [2]Neuro-immunology Unit and Laboratoire de Recherché en Neuroimagérie (LREN), Neurology Division, Centre Hospitalier Universitaire Vaudois and University of Lausanne (CHUV), Lausanne, Switzerland; [3]Advanced Clinical Imaging Technology, Siemens Healthcare IM BM PI & Department of Radiology, Centre Hospitalier Universitaire Vaudois and University of Lausanne (CHUV), Lausanne, Switzerland; [4]Signal Processing Laboratory, LTS5, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [5]Signal Processing Core, Centre d'Imagerie BioMédicale (CIBM), Lausanne, Switzerland

Computer 94 **4350. Whole Brain Multi-Metabolite Statistical Mapping Analyses to Characterize Metabolic Disorders in Multiple Sclerosis Using Combination of Two Tilted 3D-EPSI Acquisitions.**

Maxime Donadieu[1, 2], Yann Le Fur[1, 2], Andrew A. Maudsley[3], Angèle Lecocq[1, 2], Wafaa Zaaraoui[1, 2], Elisabeth Soulier[1, 2], Marie-Liesse Lesage[1, 2], Sulaiman Sheriff[3], Mohammad Sabati[3], Sylviane Confort-Gouny[1, 2], Maxime Guye[1, 2], Jean Pelletier[1, 4], Bertrand Audoin[1, 4], Jean-Philippe Ranjeva[1, 2]

[1]CRMBM UMR CNRS 7339, Aix Marseille Université, Marseille, France, Metropolitan; [2]CEMEREM, Pole d'imagerie médicale, Hopital la Timone, AP-HM, Marseille, France, Metropolitan; [3]Department of Radiology, Miller School of Medicine University of Miami, Miami, FL, United States; [4]Department of Neurology, Timone University Hospital, Marseille, France, Metropolitan

Electronic Poster
MS 2

Exhibition Hall Wednesday 17:00-18:00

Computer 1 **4351.** **Multi-Contrast MRI of Myelination After Transplantation of Human Glial-Restricted Progenitor Cells in a Dysmyelinated Mouse Model**

Antje Arnold[1, 2], Jiangyang Zhang[1, 2], Guanshu Liu[1, 3], Agatha Lyczek[1, 2], Miroslaw Janowski[1, 4], Jeff W.M. Bulte[1, 2], Piotr Walczak[1, 2]
[1]Dept. of Radiology and Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Cellular Imaging Section, Institute for Cell Engineering, Baltimore, MD, United States; [3]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States; [4]NeuroRepair Department, Polish Academy of Sciences, Warsaw, Poland

Computer 2 **4352.** **Normal-Appearing White Matter and Venous Flow Multiparameter Comparison Between Multiple Sclerosis and Healthy Control Subjects**

Eric Mathew Schrauben[1], Kevin M. Johnson[1], Oliver Wieben[1, 2], Aaron Field[3]
[1]Medical Physics, University of Wisconsin - Madison, Madison, WI, United States; [2]Radiology, University of Wisconsin - Madison, WI, United States; [3]Radiology, University of Wisconsin - Madison, Madison, WI, United States

Computer 3 **4353.** **Using Diffusion and Structural MRI for the Automated Segmentation of Multiple Sclerosis Lesions**

Pedro A. Gómez[1, 2], Tim Sprenger[1, 2], Ana A. López[1], Jonathan I. Sperl[2], Brice Fernandez[3], Miguel Molina-Romero[1, 2], Xin Liu[1, 2], Vladimir Golkov[1, 2], Michael Czisch[4], Philipp Saemann[4], Marion I. Menzel[2], Bjoern H. Menze[1]
[1]Technical University Munich, Munich, Germany; [2]GE Global Research, Munich, Germany; [3]GE Healthcare, Munich, Germany; [4]Max Plank Institute of Psychiatry, Munich, Germany

Computer 4 **4354.** **Fully Automated Segmentation of the Cervical Cord Using PropSeg: Application to Multiple Sclerosis**

Marios C. Yiannakas[1], Ahmed Mustafa[1], Benjamin De Leener[2], Hugh Kearney[1], David H. Miller[1], Julien Cohen-Adad[2], Claudia A. M. Wheeler-Kingshott[1]
[1]NMR Research Unit, Department of Neuroinflammation, Queen Square MS Centre, UCL Institute of Neurology, London, WC1N3BG, United Kingdom; [2]Institute of Biomedical Engineering, Polytechnique Montreal, Montreal, QC, Canada

Computer 5 **4355.** **Comparison of 3T Arterial Spin Labelling and Dynamic Contrast Enhanced MRI in Multiple Sclerosis**

Afaf S. Elsarraj[1], Paul S. Morgan[2], Cris S. Constantinescu[3], Dorothee P. Auer[1], Robert A. Dineen[1]
[1]Sir Peter Mansfield Imaging Centre, School of Medicine, University of Nottingham, Nottingham, United Kingdom; [2]Medical Physics, Nottingham University Hospitals NHS Trust, Nottingham, United Kingdom; [3]Clinical Neurology Group, Division of Clinical Neuroscience, University of Nottingham, Nottingham, United Kingdom

Computer 6 **4356.** **Quantitative Spin Echo R_2 and Brain Atrophy Measurements for Subcortical Grey Matter in Patients with Multiple Sclerosis: A 2-Year Longitudinal Study**

Md Nasir Uddin[1], R Marc Lebel[1], Peter Seres[1], Gregg Blevins[2], Alan H. Wilman[1]
[1]Biomedical Engineering, University of Alberta, Edmonton, Alberta, Canada; [2]Division of Neurology, University of Alberta, Edmonton, Alberta, Canada

Computer 7 **4357.** **Effect of Rhythmic Auditory Stimulation on Cortical Activation During the Mental Imagery of Walking in Patients with Multiple Sclerosis**

Katherine A. Koenig[1], Mark J. Lowe[1], Darlene K. Stough[2], Lisa Gallagher[2], Dwyer Conklyn[3], Francois Bethoux[2]
[1]The Cleveland Clinic, Cleveland, OH, United States; [2]Neurological Institute, The Cleveland Clinic, Cleveland, OH, United States; [3]DBC3 Music Therapy, Independence, OH, United States

Computer 8 **4358.** **Mapping of the Optic Nerve in Multiple Sclerosis Patients with and Without Optic Neuritis**

Robert L. Harrigan[1], Katrina M. Nelson[1], Lindsey M. Dethrage[2], Robert L. Galloway[3], Bennett A. Landman[1, 2], Louise A. Mawn[4], Seth A. Smith[2, 5]

[1]Electrical Engineering, Vanderbilt University, Nashville, TN, United States; [2]Institute for Imaging Science, Vanderbilt University, Nashville, TN, United States; [3]Biomedical Engineering, Vanderbilt University, Nashville, TN, United States; [4]Ophthalmology and Neurological Surgery, Vanderbilt University, Nashville, TN, United States; [5]Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States

Computer 9 **4359. Cortical Abnormalities in Multiple Sclerosis by 7T MRI: Novel Imaging Insights and Update**

Yulin Ge[1], Ilya Kister[2], Sanjeev Chawla[1], Tim Sinnecker[3], Jean-Christophe Brisset[1], Joseph Herbert[2], Friedemann Paul[3], Jens Wuerfel[3]

[1]Radiology, NYU Langone Medical Center, New York City, NY, United States; [2]Neurology, NYU Langone Medical Center, NY, United States; [3]Universitätsmedizin Göttingen, Berlin, Germany

Computer 10 **4360. Computerised Cognitive Rehabilitation in Multiple Sclerosis May Result in Improved Working Memory**

Jamie Campbell[1], Dawn Langdon[2], Waqar Rashid[3], Mara Cercignani[1]

[1]Clinical Imaging Sciences Centre, Brighton & Sussex Medical School, University of Sussex, Brighton, East Sussex, United Kingdom; [2]Neuropsychology, University of London, London, United Kingdom; [3]Neurology, Brighton & Sussex University Hospitals NHS Trust, Brighton, East Sussex, United Kingdom

Computer 11 **4361. A Comparison of FLAIR* and T2*-Weighted Imaging in Detecting White Matter Lesions and Central Veins in Patients with MS and Ischaemic Lesions at 3T.**

Amal Samaraweera[1], Margareta Clarke[2], Olivier Mougin[3], Rob Dineen[4], Ian Driver[3], Paul S. Morgan, Nikos Evangelou[1]

[1]Division of Clinical Neuroscience, University of Nottingham, Nottingham, United Kingdom; [2]Clinical Neurology, Nottingham University Hospitals NHS Trust, Nottingham, United Kingdom; [3]Sir Peter Mansfield MR Centre, University of Nottingham, Nottingham, United Kingdom; [4]Department of Neuroradiology, Nottingham University Hospitals NHS Trust, Nottingham, United Kingdom

Computer 12 **4362. Age Related Metabolic Consequences of Reduced Myelin Basic Protein – MRS and MRI of Heterozygous Shiverer Mice**

Juergen Baudewig[1], Giulia Poggi[2], Hannelore Ehrenreich[2], Susann Boretius[1]

[1]Section Biomedical Imaging, Dept. of Radiology and Neuroradiology, Christian-Albrechts-University Kiel, Kiel, Germany; [2]Max Planck Institute of Experimental Medicine, Goettingen, Germany

Computer 13 **4363. High-Field Characterization of Spinal Cord Damage in Multiple Sclerosis**

Bailey Lyttle[1], Adrienne Dula[2, 3], Benjamin Conrad[2], Richard Dortch[2, 3], Megan Barry[4], Subramaniam Sriram[4], Shilpa Reddy[4], Seth Smith[2, 3], Siddharama Pawate[4]

[1]Neuroscience, Vanderbilt University, Nashville, TN, United States; [2]Vanderbilt University Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [3]Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [4]Neurology, Vanderbilt University, Nashville, TN, United States

Computer 14 **4364. Identification of Quantitative Differences in Normal-Appearing White Matter of Multiple Sclerotic Patients Vs. Healthy Controls Using a Novel Bloch-Simulation-Based T_2 Mapping Technique**

Noam Ben-Eliezer[1, 2], Veronica Cosi[1], Akio Yoshimoto[1], Daniel K. Sodickson[1, 2], Mary Bruno[1], Kai Tobias Block[1, 2], Timothy M. Shepherd[1, 2]

[1]Center for Biomedical Imaging, Department of Radiology, New York University Medical Center, New York, NY, United States; [2]Center for Advanced Imaging Innovation and Research (CAI2R), Department of Radiology, New York University School of Medicine, New York, NY, United States

Computer 15 **4365. Magnetization Transfer from Inhomogeneously Broadened Lines (IhMT): Application on a Mouse Model of Experimental Autoimmune Encephalomyelitis (EAE)**

Valentin H. Prevost[1], Angele Viola[1], Olivier M. Girard[1], Adriana T. Perles-Barbacaru[1], Jennifer Tracz[1], Gopal Varma[2], David C. Alsop[2], Guillaume Duhamel[1]

[1]CRMBM CNRS UMR 7339, Aix-Marseille University, Marseille, France; [2]Departement of radiology, BIDMC, Harvard Medical School, Boston, MA, United States

Computer 16 **4366.** **Quantify White Matter Damage with Confounding Fiber Crossing and CSF Contamination**
Yong Wang[1, 2], Peng Sun[1], Qing Wang[1], Kathryn Trinkaus[3], Robert T. Naismith[4], Robert E. Schmidt[4], Anne H. Cross, [24], Sheng-Kwei Song[1, 2]
[1]Radiology, Washington University in St. Louis, Saint Louis, MO, United States; [2]Hope Center for neurological Disorders, Washington University in St. Louis, Saint Louis, MO, United States; [3]Biostatistics, Washington University in St. Louis, Saint Louis, MO, United States; [4]Neurology, Washington University in St. Louis, Saint Louis, MO, United States

Computer 17 **4367.** **Multi-Modal Analysis of Cortico-Cortical Connectivity Based on GM and WM Anatomical Properties: Application to Secondary Progressive Multiple Sclerosis**
Emma Biondetti[1], Jonathan D. Clayden[2], Matteo Pardini[3, 4], Alessandra Bertoldo[5], Declan T. Chard[4], Claudia A. M. Wheeler-Kingshott[4]
[1]UCL Department of Medical Physics and Biomedical Engineering, University College London, London, England, United Kingdom; [2]Developmental Imaging and Biophysics Section, UCL Institute of Child Health, University College London, London, England, United Kingdom; [3]Department of Neuroscience, Rehabilitation, Ophthalmology, Genetics, Maternal and Child Health, University of Genova, Genova, Italy; [4]NMR Research Unit, Department of Neuroinflammation, Queen Square MS Centre, UCL Institute of Neurology, London, England, United Kingdom; [5]University of Padova, Padova, Italy

Computer 18 **4368.** **Quantification of Normal-Appearing White Matter in Multiple Sclerosis (MS) by Quantitative Susceptibility Mapping (QSM)**
Weiwei Chen[1], Yan Zhang[1], Wenzhen Zhu[1], Ketao Mu[1], Chu Pan[1], Susan A. Gauthier[2], Yi Wang[3]
[1]Radiology, Tongji Hospital, Tongji Medical College, Huazhong University of Science& Technology, Wuhan, Hubei, China; [2]Neurology, Weill Cornell Medical College, NY, United States; [3]Radiology, Weill Cornell Medical College, NY, United States

Computer 19 **4369.** **Application of 3D Double Inversion Recovery Sequence in the Demyelinating Disease of Cervical and Thoracic Cord**
Yelong Shen[1], Tianyi Qian[2], Yanbing Wang[3], Guangbin Wang[1], Bin Zhao[1]
[1]Shandong Medical Imaging Research Institute, School of Medicine, Shandong University, Jinan, Shandong, China; [2]MR Collaborations NE Asia, Siemens Healthcare, Beijing, China; [3]Rizhao People's Hospital of Shandong, Shandong, China

Computer 20 **4370.** **Relationship of Sodium Concentration and T2 Relaxation in Multiple Sclerosis**
Patricia Alves Da Mota[1], Marios C. Yiannakas[2], Ferran Prados[2, 3], Manuel Jorge Cardoso[2], David Paling[4], Frank Riemer[2], Daniel Tozer[5], Sébastien Ourselin[2], David H. Miller[1], Xavier Golay[6], Claudia AM Wheeler-Kingshott[1], Bhavana S. Solanky[1]
[1]NMR Research Unit, Department of Neuroinflammation, Queen Square MS Centre, UCL Institute of Neurology, London, England, United Kingdom; [2]NMR Research Unit, Department of Neuroinflammation, Queen Square MS Centre, UCL Institute of Neurology, London, England, United Kingdom; [3]Department of Medical Physics and Bioengineering Wolfson House, Translational Imaging Group CMIC, London, England, United Kingdom; [4]Department of Clinical Neurosciences, University of Sheffield, Sheffield, England, United Kingdom; [5]Department of Clinical Neurosciences, University of Cambridge, Cambridge, England, United Kingdom; [6]NMR Research Unit, Department of Brain Repair and Rehabilitation, UCL Institute of Neurology, London, England, United Kingdom

Computer 21 **4371.** **Improve Myelin Imaging Biomarkers Specificity by Modeling Extra-Cellular Tissue Water**
Yong Wang[1, 2], Peng Sun[1], Qing Wang[1], Kathryn Trinkaus[3], Robert T. Naismith[4], Robert E. Schmidt[4], Anne H. Cross, [24], Sheng-Kwei Song[1, 5]
[1]Radiology, Washington University in St. Louis, Saint Louis, MO, United States; [2]Hope Center for neurological Disorders, Washington University in St. Louis, Saint Louis, MO, United States; [3]Biostatistics, Washington University in St. Louis, Saint Louis, MO, United States; [4]Neurology, Washington University in St. Louis, Saint Louis, MO, United States; [5]Hope Center for neurological Disorders, Washington University in St. Louis, Saint Louis, m, United States

Computer 22 **4372.** **Tracking the Individual Lesion Myelination Status in Multiple Sclerosis**
Hagen H. Kitzler[1], Caroline Koehler[1], Hannes Wahl[1], Tjalf Ziemssen[2], Sean C. Deoni[3]
[1]Neuroradiology, Technische Universitaet Dresden, Dresden, SN, Germany; [2]Neurology, Technische Universitaet Dresden, Dresden, SN, Germany; [3]Engineering, Brown University, Providence, RI, United States

Computer 23 **4373.** **Venous Oxygenation Mapping in Multiple Sclerosis: A Longitudinal Study**
Sanjeev Chawla[1], Olga Marshall[1], Jean Christophe Brisset[1], Hanzhang Lu[2], Ilya Kister[3], Yulin Ge[1]
[1]Radiology, New York University Langone Medical Center, New York, NY, United States; [2]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [3]Neurology, New York University Langone Medical Center, New York, NY, United States

Computer 24 **4374. Evaluation of Demyelination in a New Myelin Basic Protein Mutant Mouse Using *In Vivo* MRI**
Tom Dresselaers[1], Kristof Govaerts[1], James Dooley[2, 3], Uwe Himmelreich[1], Adrian Liston[2, 3], Kim A. Staats[2, 3]
[1]Dept of Imaging and Pathology, KU Leuven, Leuven, Belgium; [2]Autoimmune Genetics Laboratory, VIB, Leuven, Belgium; [3]Dept. of Microbiology and Immunology, KU Leuven, Leuven, Belgium

Electronic Poster
Brain Tumour Advanced Methods

Exhibition Hall Wednesday 17:00-18:00

Computer 25 **4375. MR Perfusion of Human Brain Tumors Demonstrates Increased Blood Volume in Active Tumor Before Static Contrast Enhancement or Permeability.**
Ajay Nemani[1], Mirko Vukelich[1], Kristina Wakeman[2], Tibor Valyi-Nagy[2], Keith Thulborn[1]
[1]Center for MR Research, University of Illinois at Chicago, Chicago, IL, United States; [2]Pathology, University of Illinois at Chicago, Chicago, IL, United States

Computer 26 **4376. Survival Prediction of Patients with Glioblastoma Based on Combination Analysis of Mammalian Target of Rapamycin (MTOR) - Epidermal Growth Factor Receptor (EGFR) Pathway and Dynamic Susceptibility Contrast (DSC)-MR Perfusion Imaging**
Xiang Liu[1], Wei Tian[2], Rajiv Mangla[2], Mahlon Johnson[2], Sven Ekholm[2]
[1]Department of Imaging Sciences, University of Rochester Medical Center, Rochester, NY, United States; [2]University of Rochester Medical Center, NY, United States

Computer 27 **4377. Weighted-Average Model Curve Preprocessing Strategy for Quantification of DSC Perfusion Imaging Metrics from Image-Guided Tissue Samples in Patients with Brain Tumors**
Janine M. Lupo[1], Qiuting Wen[1], Joanna J. Phillips[2, 3], Susan M. Chang[2], Sarah J. Nelson[1]
[1]Radiology and Biomedical Imaging, University of California, San Francisco, CA, United States; [2]Neurological Surgery, University of California, San Francisco, CA, United States; [3]Pathology, University of California, San Francisco, CA, United States

Computer 28 **4378. Tumour Response Assessment Using Volumetric DCE-CT and DCE-MRI in Metastatic Brain Cancer Patients**
Catherine Coolens[1, 2], Brandon Driscoll[3], Warren Foltz, Caroline Chung, [4]
[1]Radiation Medicine Program, Princess Margaret Cancer Centre and University Health Network, Toronto, Ontario, Canada; [2]Radiation Oncology and IBBME, University of Toronto, Toronto, Ontario, Canada; [3]Radiation Medicine Program, Princess Margaret Cancer Centre, Ontario, Canada; [4]Radiation Oncology, University of Toronto, Ontario, Canada

Computer 29 **4379. Are There Differences Between Macrocyclic Gadolinium Contrast Agents for Brain Tumor Imaging? Results of a Multicenter Intra-Individual Crossover Comparison of Gadobutrol with Gadoteridol (The TRUTH Study)**
Martin P. Smith[1], Kenneth R. Maravilla[2], Stefano Bastianello[3], Eva Bueltmann[4], Toshinori Hirai[5], Tiziano Frattini[6], Cesare Colosimo[7], Gianpaolo Pirovano[8]
[1]Department of Radiology, Beth Israel Deaconess Medical Center, Boston, MA, United States; [2]University of Washington, WA, United States; [3]Neuroradiology Department, University of Pavia, Pavia, Italy; [4]Oberartzin Institut fur Diagnostiche und Interventionelle Neuroradiologie, Hannover, Germany; [5]Kumamoto University, Kumamoto, Japan; [6]Ospedale Valduce, Como, Italy; [7]Policlinico "Agostino Gemelli", Rome, Italy; [8]Bracco Diagnostics Inc., Monroe, NJ, United States

Computer 30 **4380. The Role of DWI in Postoperative High Grade Glioma Trials**
Dewen Yang[1]
[1]ICON Medical Imaging, Warrington, PA, United States

Computer 31 **4381. Differentiation of High-Grade and Low-Grade Diffuse Gliomas by Intravoxel Incoherent Motion MRI**
Osamu Togao[1], Akio Hiwatashi[1], Koji Yamashita[1], Kazufumi Kikuchi[1], Marc Van Cauteren[2], Hiroshi Honda[1]
[1]Clinical Radiology, Graduate School of Medical Sciences, Kyushu University, Fukuoka, Japan; [2]Philips Electronics Japan, Tokyo, Japan

Computer 32 **4382. Cerebral Gliomas: Correlation of Diffusion Kurtosis Imaging with Tumour Grade and Ki-67**
Rifeng Jiang[1], Wenzhen Zhu[1], Jingjing Jiang[1], Nanxi Shen[1], Changliang Su[1]
[1]Radiology, Tongji Hospital, Tongji Medical College, HUST, Wuhan, Hubei, China

Computer 33 **4383.** **Differentiation of Low-Grade and High-Grade Gliomas Using a Non-Gaussian Diffusion Imaging Model**
Yi Sui[1, 2], Ying Xiong[1, 3], Karen Xie[4], Frederick C. Damen[1], Xiaohong Joe Zhou[1, 5], Wenzhen Zhu[3]
[1]Center for MR Research, University of Illinois Hospital & Health Sciences System, Chicago, IL, United States; [2]Bioengineering, University of Illinois at Chicago, Chicago, IL, United States; [3]Radiology, Tongji Hospital, Wuhan, Hubei, China; [4]Radiology, University of Illinois Hospital & Health Sciences System, Chicago, IL, United States; [5]Departments of Radiology, Neurosurgery and Bioengineering, University of Illinois Hospital & Health Sciences System, Chicago, IL, United States

Computer 34 **4384.** **Diffusion-Weighted MR Imaging Using Mono-Exponential, Bi-Exponential and Mono-Exponential High-B Values Models in the Grading of Gliomas**
Yan Bai[1], Carlos Torres[2], Zhoushe Zhao[3], Dandan Zheng[3], Dapeng Shi[1], Jie Tian[4], Meiyun Wang[1]
[1]Henan Provincial People's Hospital, Zhengzhou, Henan, China; [2]Department of Radiology, The Ottawa Hospital, The University of Ottawa , Ottawa, ON, Canada; [3]GE Healthcare, Beijing, China; [4]Institute of Automation, Chinese Academy of Sciences, Beijing, China

Computer 35 **4385.** **Brain Tumor Imaging Based, Histology Trained Maps (IBHTMs) of Cellularity Predict Tumor Presence in Pathologically Confirmed Regions Sampled *Ex-Vivo***
Peter S. LaViolette[1], Elizabeth J. Cochran[2], Nikolai Mickevicius[3], Jennifer Connelly[4], Kathleen M. Schmainda[1, 3], Scott D. Rand[1]
[1]Radiology, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Pathology, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [4]Neurology, Medical College of Wisconsin, Milwaukee, WI, United States

Computer 36 **4386.** **Towards Imaging Tumor Cellularity: Diffusion Basis Spectrum Imaging (DBSI) and Amide Proton Transfer (APT)**
Chien-Yuan Eddy Lin[1, 2], Bing Wu[2], Hung-Wen Kao[3, 4], Peng Sun[5], Yong Wang[5], Sheng-Kwei Song[5]
[1]GE Healthcare, Taipei, Taiwan; [2]GE Healthcare China, Beijing, China; [3]Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan; [4]Department of Biomedical Imaging and Radiological Sciences , National Yang-Ming University, Taipei, Taiwan; [5]Department of Radiology, Washington University School of Medicine, St. Louis, MO, United States

Computer 37 **4387.** **Hierarchical Non-Negative Matrix Factorization Using Multi-Parametric MRI to Assess Tumor Heterogeneity Within Gliomas.**
Nicolas Sauwen[1, 2], Diana Sima[1, 2], Sofie Van Cauter[3], Jelle Veraart[4, 5], Alexander Leemans[6], Frederik Maes[1, 2], Uwe Himmelreich[7], Sabine Van Huffel[1, 2]
[1]Department of Electrical Engineering (ESAT), KU Leuven, Leuven, Belgium; [2]iMinds Medical IT, Leuven, Belgium; [3]Department of Radiology, University Hospitals of Leuven, Leuven, Belgium; [4]iMinds Vision Lab, Department of Physics, University of Antwerp, Antwerp, Belgium; [5]Center for Biomedical Imaging, Department of Radiology, New York University Langone Medical Center, New York, NY, United States; [6]Image Sciences Institute, University Medical Center Utrecht, Utrecht University, Utrecht, Netherlands; [7]Biomedical MRI/MoSAIC, Department of Imaging and Pathology, KU Leuven, Leuven, Belgium

Computer 38 **4388.** **Association Between Texture Feature Ratios and Patient Survival in Glioblastoma**
Joonsang Lee[1], Rajan Jain[2], Kamal Khalil[3], Brent Griffith[3], Ryan Bosca[4], Ganesh Rao[5], Arvind Rao[1]
[1]Bioinformatics and Computational Biology, The University of Texas MD Anderson Cancer Center, Houston, TX, United States; [2]Radiology, New York University School of Medicine, Langone Medical Center, New York, NY, United States; [3]Radiology, Henry Ford Hospital, Detroit, MI, United States; [4]Medical Physics, University of Wisconsin, Madison, WI, United States; [5]Neurosurgery, The University of Texas MD Anderson Cancer Center, Houston, TX, United States

Computer 39 **4389.** **Multiparametric MRI Towards a Predictive Model to Differentiate Solitary Brain Metastasis from Glioblastoma Multiforme**
Kambiz Nael[1], Adam H. Bauer[1]
[1]Medical Imaging, University of Arizona, Tucson, AZ, United States

Computer 40 **4390.** **Relationship of Subventricular Zone with Tumor Blood Volume, Tumor Genomics and Patient Survival in Patients with Glioblastoma : A TCGA Glioma Phenotype Research Group Project**
Brent Griffith[1], Laila Poisson[2], Lev Bangiyev[3], Jason Huse[4], Rajan Jain[5]
[1]Radiology, Henry Ford Hospital, Detroit, MI, United States; [2]Henry Ford Hospital, MI, United States; [3]Radiology, Stony Brook University School of Medicine, NY, United States; [4]Pathology, Memorial Sloan-Kettering Cancer Center, NY, United States; [5]Radiology, NYU School of Medicine, New York, NY, United States

Computer 41 **4391. Peritumoral Myelin Imaging in Low-Grade Astrocytomas**

ISMRM MERIT AWARD magna cum laude

Hagen H. Kitzler[1], Hannes Wahl[1], Tareq Yuratli[2], Matthias Meinhardt[3]
[1]Neuroradiology, Technische Universitaet Dresden, Dresden, SN, Germany; [2]Neurosurgery, Technische Universitaet Dresden, Dresden, SN, Germany; [3]Neuropathology, Technische Universitaet Dresden, Dresden, SN, Germany

Computer 42 **4392. Simultaneous UHF Quantitative T1 Mapping and T2* Weighted Dynamic Contrast Imaging with Applications to Brain Tumors**

Jayashree Kalpathy-Cramer[1], Ville Renvall[1, 2], Elizabeth Gerstner[3], David Salat[1], Jean-Philippe Coutu[1], Bruce R. Rosen[1], Jonathan R. Polimeni[1]
[1]Radiology, MGH/Harvard Medical School, Charlestown, MA, United States; [2]Brain Research Unit, O.V. Lounasmaa Laboratory, Aalto University, Espoo,, Finland; [3]Neuroncology, MGH/Harvard Medical School, Charlestown, MA, United States

Computer 43 **4393. Automated 3-D Segmentation of Radiation-Induced Cerebral Microbleeds on Susceptibility Weighted Imaging at 3T and 7T**

Xiaowei Zou[1], Wei Bian[2], Christopher P. Hess[1], Sarah J. Nelson[1], Janine M. Lupo[1]
[1]Radiology & Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [2]Radiology, Stanford University, Stanford, CA, United States

Computer 44 **4394. Preliminary Experience with Visualization of Susceptibility Signals to Differentiate Recurrent Tumor Progression of Brain Metastases and Radiation Necrosis Following Gamma Kinfe Radiotherapy**

haiyan lou[1], Rui Zhang[1], Ying Tong[2], Qidong Wang[1], Shunliang Xu[1]
[1]radiology department, No.1 Affiliated hospital, Medical School of Zhejiang University, hangzhou, zhejiang, China; [2]Neurosurgery department, No.1 Affiliated hospital, Medical School of Zhejiang University, hangzhou, zhejiang, China

Computer 45 **4395. Imaging the Delivery of Brain-Penetrating PLGA Nanoparticles in the Brain Using Magnetic Resonance**

Daniel Coman[1], Garth Strohbehn[2], Liang Han[3], Ragy R. T. Ragheb[2], Tarek M. Fahmy[2], Anita J. Huttner[4], Fahmeed Hyder[1, 2], Joseph M. Piepmeier[3], Mark Saltzman[2], Jiangbing Zhou[2, 3]
[1]Diagnostic Radiology, Yale University, New Haven, CT, United States; [2]Biomedical Engineering, Yale University, New Haven, CT, United States; [3]Neurosurgery, Yale University, New Haven, CT, United States; [4]Pathology, Yale University, New Haven, CT, United States

Computer 46 **4396. Intracellular Sodium (23Na) MRI for Assessment of Response to Cancer Therapies on Brain Tumor Patients**

Yongxian Qian[1], Charles M. Laymon[2], Matthew J. Oborski[3], Jan Drappatz[4], Frank S. Lieberman[4], James M. Mountz[2]
[1]Qian's Lab for MRI, General Labs Cloud LLC, Pittsburgh, PA, United States; [2]Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [3]Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States; [4]Neurology and Medicine, University of Pittsburgh, Pittsburgh, PA, United States

Computer 47 **4397. Electrical Conductivity Characteristics of Meningiomas: Noninvasive Assessment Using Electric Properties Tomography**

Khin Khin Tha[1], Ulrich Katscher[2], Christian Stehning[2], Shigeru Yamaguchi[3], Shunsuke Terasaka[3], Hiroyuki Sugimori[3], Toru Yamamoto[4], Noriyuki Fujima[3], Kohsuke Kudo[3], Yuriko Suzuki[5], Marc van Cauteren[5], Hiroki Shirato[1]
[1]Hokkaido University Graduate School of Medicine, Sapporo, Hokkaido, Japan; [2]Philips Research Laboratories, Hamburg, Germany; [3]Hokkaido University Hospital, Japan; [4]Hokkaido University Graduate School of Health Sciences, Japan; [5]Philips Electronics, Japan

Computer 48 **4398. Noninvasive Characterization and Staging of Glioma with MR Elastography - A Pilot Study**

Kay Pepin[1], Arvin Arani[2], Nikoo Fattahi[2], Armando Manduca[3], Richard L. Ehman[2], John Huston III[2], Kiaran McGee[2]
[1]Graduate School, Mayo Clinic, Rochester, MN, United States; [2]Radiology, Mayo Clinic, MN, United States; [3]Physiology and Biomedical Engineering, Mayo Clinic, MN, United States

Electronic Poster
Traumatic Brain Injury

Exhibition Hall Wednesday 17:00-18:00

Computer 49 **4399. Investigation of Vigilance and Working Memory Impairment in Sport Related Concussion Patients with Functional MRI**

Binjian Sun[1], Thomas G. Burns[1], Tricia Z. King[2], Laura L. Hayes[1], Ana Arenivas[3], Susan McManus[1], Kim E. Ono[1], Richard A. Jones[1, 4]

[1]Children's Healthcare of Atlanta, Atlanta, GA, United States; [2]Georgia State University, Atlanta, GA, United States; [3]Kennedy Krieger Institute, Baltimore, MD, United States; [4]Emory University, Atlanta, GA, United States

Computer 50 **4400. Resting State Dynamic Functional Network Analysis in Mild Traumatic Brain Injury**

Wenshuai Hou[1], Chandler Sours[2], Joseph JaJa[3], Rao Gullapalli[2]

[1]ECE, University of Maryland, college park, MD, United States; [2]Department of Diagnostic Radiology and Nuclear Medicine, University of Maryland School of Medicine, MD, United States; [3]ECE, University of Maryland, MD, United States

Computer 51 **4401. MRI Monitoring of Stem Cells Transplantation in Traumatic Brain Injury Mice and Its Therapeutic Potential**

ISMRM MERIT AWARD magna cum laude

Sushanta Kumar Mishra[1], Subash Khushu[1], Gangenahalli U. Gurudutta[2]

[1]NMR Research Centre, Institute of Nuclear Medicine and Allied Sciences, DRDO, Delhi, India; [2]Stem Cells Research Group, Institute of Nuclear Medicine and Allied Sciences, DRDO, Delhi, India

Computer 52 **4402. Static and Dynamic Functional Connectivity Impairments in Concussed Soldiers with and Without PTSD**

ISMRM MERIT AWARD magna cum laude

D Rangaprakash[1], Gopikrishna Deshpande[1, 2], Thomas A. Daniel[2], Adam Goodman[2], Jeffrey S. Katz, [12], Nouha Salibi[1, 3], Thomas S. Denney Jr[1, 2], MAJ Michael N. Dretsch[4, 5]

[1]AU MRI Research Center, Department of Electrical and Computer Engineering, Auburn University, Auburn, AL, United States; [2]Department of Psychology, Auburn University, Auburn, AL, United States; [3]MR R&D, Siemens Healthcare, Malvern, PA, United States; [4]National Intrepid Center of Excellence, Walter Reed National Military Medical Center, Bethesda, MD, United States; [5]U.S. Army Aeromedical Research Laboratory, Fort Rucker, AL, United States

Computer 53 **4403. Identify Potentially Vulnerable Functional Networks to Concussion in Sports: A Resting-State fMRI Longitudinal Study**

David C. Zhu[1], Sally Nogle[1], Scarlett Doyle[1], Doozie Russell[1], Tracey Covassin[1], Randolph L. Pearson[1], J Kevin DeMarco[1], David I. Kaufman[1]

[1]Michigan State University, East Lansing, MI, United States

Computer 54 **4404. Dynamic Susceptibility Contrast Perfusion Imaging Revealed Asymmetric Cerebral Blood Flow in Chronic TBI Patients**

Wei Liu[1, 2], Jennifer Pacheco, [12], Cyrus Eierud, [12], David Joy[1, 3], Justin Senseney, [12], Ping-Hong Yeh, [12], Dominic Nathan, [12], Elyssa Sham, [12], John Ollinger, [12], Terrence Oakes, [12], Gerard Riedy, [12]

[1]National Intrepid Center of Excellence, Walter Reed National Military Medical Center, Bethesda, MD, United States; [2]National Capital Neuroimaging Consortium, Bethesda, MD, United States; [3]Center of Neuroscience and Regenerative Medicine, Bethesda, MD, United States

Computer 55 **4405. Reduction of Hippocampal Blood Flow in Collegiate Football Players**

Michael Zeineh[1], David Douglas[1], Mansi Parekh[1], Eugene Wilson[1], Sherveen Parivash[2], Lex Mitchell[3], Brian Boldt[1], Wei Scott Bian[1], Scott Anderson[4], Andrew Hoffman[5], Huy Scott Do[1], Gerald Scott Grant[6], Jamshid Scott Ghajar[6], Greg Zaharchuk[1]

[1]Radiology, Stanford University, Stanford, CA, United States; [2]Duke University, NC, United States; [3]Evans Army Community Hospital, Fort Carson, CO, United States; [4]Sports Medicine, Stanford University, Stanford, CA, United States; [5]Internal Medine, Stanford University, Stanford, CA, United States; [6]Neurosurgery, Stanford University, Stanford, CA, United States

Computer 56 **4406. Diffusion MRI Connectometry Findings and Symptom Reporting Following Traumatic Brain Injury**

Ping-Hong Yeh[1], Fang-Cheng Yeh[2], John Ollinger[3], Elyssa B. Sham[3], Binquan Wang[1], David Joy[1], Justin Senseney[3], Terrence R. Oakes[3], Gerard Riedy[3]

[1]Henry Jackson Foundation for the Advancement of Military Medicine, Bethesda, MD, United States; [2]Department of Psychology & Center for the Neural Basis of Cognition, Carnegie Mellon University, Pittsburg, PA, United States; [3]National Intrepid Center of Excellence, Bethesda, MD, United States

Computer 57 **4407. Diffusion-Derived MRI Measures of Longitudinal Microstructural Remodeling Induced by Marrow Stromal Cell Therapy After TBI**
Lian Li[1], Michael Chopp[1, 2], Guangliang Ding[1], Changsheng Qu[3], Siamak P. Nejad-Davarani[1], Esmaeil Davoodi-Bojd[1], Qingjiang Li[1], Asim Mahmood[3], Quan Jiang[1, 2]
[1]Neurology, Henry Ford Hospital, Detroit, MI, United States; [2]Physics, Oakland University, MI, United States; [3]Neurosurgery, Henry Ford Hospital, Detroit, MI, United States

Computer 58 **4408. Preliminary Multimodal MR Imaging Evaluation in Blast-Induced Traumatic Brain Injury Rat Model**
Xiao Wang[1], Xiao-hong Zhu[1], Afshin Divani[2], Yi Zhang[1], Wei Chen[1]
[1]Center for Magnetic Resonance Research, Department of Radiology, University of Minnesota Medical School, Minneapolis, MN, United States; [2]Department of Neurology, University of Minnesota, MN, United States

Computer 59 **4409. Symptomatic White Matter and Gray Matter Changes in Mild Traumatic Brain Injury**
Ping-Hong Yeh[1], Jennifer Pacheco[2], Joseph Hennessey[2], Alex Kubli[2], Priya Santhanam[2], Terrence R. Oakes[2], Thomas Perkins[3], Gerard Riedy[2], William W. Orrison[4], Lindell K. Weaver[5, 6]
[1]Henry Jackson Foundation for the Advancement of Military Medicine, Bethesda, MD, United States; [2]National Intrepid Center of Excellence, Bethesda, MD, United States; [3]Philips Healthcare, Cleveland, OH, United States; [4]Nevada Imaging Centers, Las Vegas, NV, United States; [5]Department of Hyperbaric Medicine, Intermountain LDS Hospital and Intermountain Medical Center, Salt Lake City, UT, United States; [6]School of Medicine, University of Utah, UT, United States

Computer 60 **4410. Effects of Subconcussive Head Trauma on the Resting State Default Mode Network**
Brian Johnson[1], Semyon Slobounov[2], Thomas Neuberger[2]
[1]Penn State University, University Park, PA - Pennsylvania, United States; [2]Penn State University, PA, United States

Computer 61 **4411. MEMRI of Mild Traumatic Brain Injury**
Lora Talley Watts[1], Qiang Shen[1], Justin Alexander Long[1], Timothy Duong[1]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

Computer 62 **4412. Detection of TBI-Related Anomalies in Single-Subject DTI Scalar Images**
John M. Ollinger[1], PIng-Hong Yeh[1], David Joy[1], Terrence R. Oakes[1], Gerard Riedy[1]
[1]NICoE, Walter Reed National Military Medical Center, Bethesda, MD, United States

Computer 63 **4413. Neuroprotective Effects of Chronic Oral Methylene Blue Treatment in Mild Traumatic Brain Injury**
Lora Talley Watts[1], Michael O'Boyle[1], Robert Cole Boggs[1], Shiliang Huang[1], Justin Alexander Long[1], Qiang Shen[1], Timothy Duong[1]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

Computer 64 **4414. Multiparametric MRI Characterization of Mild Traumatic Brain Injury in Mice**
Yichu Liu[1, 2], Lora Watts[1], Qiang Shen[1], Hemanth Manga[1, 2], Timothy Duong[1]
[1]Research Imaging Center, University of Texas Health Science Center, San Antonio, TX, United States; [2]Biomedical Engineering, UT San Antonio, San Antonio, TX, United States

Computer 65 **4415. MRS of Acute MTBI in Young Athletes**
General Leung[1, 2], Nathan W. Churchill[3], Anthony A. Sheen[1], Shaylea Badovinac[4], Marc A. Settino[3], Gerald R. Moran[5], Todd English[5], Walter Montanera[1, 2], Michael G. Hutchison[6], Tom A. Schweizer[3, 7]
[1]Medical Imaging, St. Michael's Hospital, Toronto, Ontario, Canada; [2]Medical Imaging, University of Toronto, Toronto, Ontario, Canada; [3]Neuroscience Research Program, Keenan Research Centre for Biomedical Science of St. Michael's Hospital, Ontario, Canada; [4]University of Toronto, Ontario, Canada; [5]Siemens Canada Ltd, Ontario, Canada; [6]Concussion Program, Faculty of Kinesiology and Physical Education, University of Toronto, Ontario, Canada; [7]Faculty of Medicine, Neurosurgery, University of Toronto, Ontario, Canada

Computer 66 **4416. White Matter Abnormalities in Acute Mild Traumatic Brain Injury: A Diffusion Kurtosis MRI Study**
Sohae Chung[1, 2], Els Fieremans[1, 2], Jelle Veraart[1, 2], Dmitry S. Novikov[1, 3], Jacqueline Smith[1, 2], Steven R. Flanagan[4], Yvonne W. Lui[1, 2]

[1]Center for Advanced Imaging Innovation and Research (CAI2R), Department of Radiology, New York University School of Medicine, New York, NY, United States; [2]Bernard and Irene Schwartz Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States; [3]Bernard and Irene Schwartz Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States; [4]Department of Rehabilitation Medicine, New York University Langone Medical Center, New York, NY, United States

Computer 67 4417. Multi-Scale Coupling of BOLD fMRI and Cardiac Variability in Patients with Mild Traumatic Brain Injury

Nathan Churchill[1], Michael G. Hutchison[2], Doug Richards[2], Shaylea Badovinac[3], Marc A. Settino[1], General Leung[4, 5], Gerald R. Moran[6], Todd English[6], Anthony Sheen[7], Tom A. Schweizer[8, 9]
[1]Neuroscience Research Program, Keenan Research Centre for Biomedical Science of St. Michael's Hospital, Toronto, Ontario, Canada; [2]Concussion Program, Faculty of Kinesiology and Physical Education, University of Toronto, Toronto, Ontario, Canada; [3]University of Toronto, Ontario, Canada; [4]Medical Imaging, University of Toronto, Toronto, Ontario, Canada; [5]Keenan Research Centre, St Michael's Hospital, Ontario, Canada; [6]Siemens Canada Ltd, Ontario, Canada; [7]Medical Imaging, St. Michael's Hospital, Ontario, Canada; [8]Neuroscience Research Program, Keenan Research Centre for Biomedical Science of St. Michael's Hospital, Ontario, Canada; [9]Faculty of Medicine (Neurosurgery), University of Toronto, Ontario, Canada

Computer 68 4418. Analysis of Hemorrhagic Traumatic Axonal Injury Lesions Using Seed-Based Resting-State fMRI at 7T

Seul Lee[1, 2], Jonathan R. Polimeni[3], Thomas Witzel[3], Collin M. Price[4], Michael D. Greicius[4], Brian L. Edlow, [35], Jennifer A. McNab[2]
[1]Department of Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Department of Radiology, Stanford University, Stanford, CA, United States; [3]Athinoula A. Martinos Center for Biomedical Imaging, Department of Radiology, Harvard Medical School, Massachusetts General Hospital, Charlestown, MA, United States; [4]Department of Neurology, Stanford University, CA, United States; [5]Department of Neurology, Massachusetts General Hospital, Harvard Medical School, MA, United States

Computer 69 4419. Robust Detection of Axonal Abnormalities in High School Collision-Sport Athletes: Longitudinal Single Subject Analysis

Ikbeom Jang[1], Il Yong Chun[1], Larry J. Leverenz[2], Eric A. Nauman[3, 4], Thomas M. Talavage[1, 4]
[1]School of Electrical & Computer Engineering, Purdue Universisty, West Lafayatte, IN, United States; [2]Department of Health & Kinesiology, Purdue Universisty, IN, United States; [3]School of Mechanical Engineering, Purdue Universisty, IN, United States; [4]Weldon School of Biomedical Engineering, Purdue Universisty, IN, United States

Computer 70 4420. Detecting Atrophy in Chronic Moderate and Severe Traumatic Brain Injury Using an Automated Volume-Based Morphometry Toolbox

Yang Wang[1, 2], Benedicte Marechal[3, 4], Dawn Neumann[2], Alexis Roche[3, 4], John D. West[2], Brenna C. McDonald[2], Michelle A. Keiski[2], Dori J. Smith[2], Andrew J. Saykin[2], Gunnar Kruger[3, 4]
[1]Medical College of Wisconsin, Milwaukee, WI, United States; [2]Indiana University School of Medicine, Indianapolis, IN, United States; [3]Siemens Healthcare IM BM PI & Department of Radiology CHUV, Lausanne, Switzerland; [4]LTS5, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland

Computer 71 4421. DTI Parametric Lesion Load Is a Better Surrogate Marker When Regional Analysis Is Insensitive to Distinguish Between Control and TBI Population.

Ramtilak Gattu[1], Robert Welch[2], Brian Oneil[3], Anamika Chaudhary[1], Ewart Mark Haacke[1], Zhifeng Kou[1]
[1]Radiology, wayne state university, Detroit, MI, United States; [2]Emergency Medicine, wayne state university, Detroit, MI, United States; [3]Emergency Medicine, wayne state university, MI, United States

Computer 72 4422. Effects of Linear and Rotational Head Impact on White Matter Changes in High School Football Players

Naeim Bahrami[1], Harish Sharma[1], Elizabeth Davenport[1], Jillian Urban[2], Joel Stitzel[2], Christopher Whitlow[1], Joseph Maldjian[1]
[1]Wake Forest School of Medicine, NC, United States; [2]Wake forest school of Biomedical Engineering, NC, United States

Electronic Poster
Spinal Cord & Plexus

Exhibition Hall Wednesday 17:00-18:00

Computer 73 4423. Multi-Parameter Mapping of the Human Cervical Spinal Cord in Brachial Plexus Root Implantation

Rebecca Sara Samson[1], Carolina Kachramanoglou[1], David Choi[2], Antoine Lutti[3], David L. Thomas[4], Nikolaus Weiskopf[3], Olga Ciccarelli[5, 6], Claudia A M Wheeler-Kingshott[1]
[1]NMR Research Unit, Department of Neuroinflammation, Queen Square MS Centre, UCL Institute of Neurology, London, England, United Kingdom; [2]Spinal Repair Unit, UCL Institute of Neurology, London, England, United Kingdom; [3]Wellcome Trust Centre for

Neuroimaging, UCL Institute of Neurology, London, England, United Kingdom; [4]5Neuroradiological Academic Unit, Department of Brain Repair and Rehabilitation, UCL Institute of Neurology, London, England, United Kingdom; [5]NMR Research Unit, Department of Brain Repair and Rehabilitation, Queen Square MS Centre, UCL Institute of Neurology, London, England, United Kingdom; [6]6NIHR UCL/UCLH Biomedical Research Centre (BRC), London, England, United Kingdom

Computer 74 **4424. Spinal Cord Gray and White Matter Segmentation Using Atlas Deformation**

ISMRM MERIT AWARD magna cum laude

Benjamin De Leener[1], Augustin Roux[1], Manuel Taso[2, 3], Virginie Callot[2, 3], Julien Cohen-Adad[1, 4]
[1]Institute of Biomedical Engineering, Polytechnique Montreal, Montreal, Quebec, Canada; [2]Aix-Marseille Université, CNRS, CRMBM UMR 7339, Marseille, France; [3]AP-HM, Pôle d'imagerie médicale, Hopital de la Timone, CEMEREM, Marseille, France; [4]Functional Neuroimaging Unit, CRIUGM, Université de Montréal, Montreal, Quebec, Canada

Computer 75 **4425. Development and Implementation of Amide Proton Transfer Chemical Exchange Saturation Transfer in the Spinal Cord at 3T Using Lorentzian Difference Analysis**

ISMRM MERIT AWARD magna cum laude

Samantha By[1, 2], Alex K. Smith[1, 2], Lindsey M. Dethrage[2], Adrienne N. Dula[2, 3], Siddharma Pawate[4], Seth A. Smith[2, 3]
[1]Department of Biomedical Engineering, Vanderbilt University, Nashville, TN, United States; [2]Vanderbilt University Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [3]Department of Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [4]Department of Neurology, Vanderbilt University, Nashville, TN, United States

Computer 76 **4426. Cervical Myelopathy Patient Follow-Up After Decompressive Surgery Using Diffusion Tensor Imaging (DTI) and Inhomogeneous Magnetization Transfer (IhMT): Preliminary Application and Results**

ISMRM MERIT AWARD magna cum laude

Manuel Taso[1, 2], Olivier M. Girard[3, 4], Guillaume Duhamel[3, 4], Thorsten Feiweier[5], Pierre-Jean Arnoux[2], Maxime Guye[3, 4], Jean-Philippe Ranjeva[3, 4], Kathia Chaumoitre[6], Pierre-Hugues Roche[7], Virginie Callot[3, 4]
[1]CRMBM-CEMEREM UMR 7339, Aix-Marseille Université, CNRS, Marseille, France; [2]LBA UMR T 24, Aix-Marseille Université, IFSTTAR, Marseille, France; [3]CRMBM UMR 7339, Aix-Marseille Université, CNRS, Marseille, France; [4]CEMEREM, Pole d'imagerie médicale, Hopital la Timone, AP-HM, Marseille, France; [5]Siemens AG, Healthcare, Erlangen, Germany; [6]Service de radiologie, Hopital Nord, Pole d'imagerie médicale, AP-HM, Marseille, France; [7]Service de Neurochirurgie,Trauma Center, Hopital Nord, AP-HM, Marseille, France

Computer 77 **4427. MRI Investigation of Functional Connectivity in the Human Spinal Cord**

ISMRM MERIT AWARD magna cum laude

Oscar San Emeterio Nateras[1], Fang Yu[2], Eric R. Muir[3, 4], Carlos Bazan III[2], Crystal G. Franklin[4], Wei Li[3, 4], Jack L. Lancaster[2, 4], Jinqi Li[2, 4], Timothy Q. Duong[3, 4]
[1]Biomedical Engineering, University of Texas at San Antonio , San Antonio, TX, United States; [2]Radiology, University of Health Science Center at San Antonio, TX, United States; [3]Ophthalmology, University of Health Science Center at San Antonio, TX, United States; [4]Research Imaging Institute, San Antonio, TX, United States

Computer 78 **4428. Slice-By-Slice Regularized Registration for Spinal Cord MRI: SliceReg**

J. Cohen-Adad[1, 2], S. Lévy[1], B. Avants[3]
[1]Institute of Biomedical Engineering, Polytechnique Montreal, Montreal, QC, Canada; [2]Functional Neuroimaging Unit, CRIUGM, Université de Montréal, Montreal, QC, Canada; [3]PENN Image Computing & Science Lab, Dept of Radiology, UPENN, Philadelphia, PA, United States

Computer 79 **4429. Whole Post-Mortem Spinal Cord Imaging with Diffusion-Weighted Steady State Free Precession at 7T**

Sean Foxley[1], Jeroen Mollink[1], Olaf Ansorge[2], Connor Scott[2], Saad Jbabdi[1], Richard Yates[2], Gabriele De Luca[2], Karla Miller[1]
[1]FMRIB Centre, University of Oxford, Oxford, OXON, United Kingdom; [2]Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, OXON, United Kingdom

Computer 80 **4430. Comparison Between Histology and MRI Markers of White Matter Damage in Contused Rat Spinal Cords Treated with Transplanted Schwann Cells: Correlation Analysis Based on Image Registration**

Andrew C.H. Yung[1], Peggy Assinck[2], Di Leo Wu[3], Jie Liu[2], Shaalee Dworski[4], Freda Miller[4], Wolfram Tetzlaff[2, 5], Piotr Kozlowski[1, 2]
[1]UBC MRI Research Centre, University of British Columbia, Vancouver, BC, Canada; [2]ICORD, Vancouver, BC, Canada; [3]Physics, University of British Columbia, Vancouver, BC, Canada; [4]Hospital for Sick Children, Toronto, ON, Canada; [5]Zoology, University of British Columbia, Vancouver, BC, Canada

Computer 81 **4431. Diffusion Tensor Imaging of Porcine Spinal Cord at 7 Tesla Using Readout-Segmented EPI, GRAPPA and a Distortion Correction Tool**
Aurélien Massire[1, 2], Pierre-Henri Rolland[3], Maxime Guye[1, 2], Virginie Callot[1, 2]
[1]CRMBM UMR 7339 CNRS, Aix-Marseille Université, Marseille, France; [2]CEMEREM, Hôpital de la Timone, Pôle d'imagerie médicale, AP-HM, Marseille, France; [3]Experimental Interventional Imaging Laboratory, Aix-Marseille Université, Marseille, France

Computer 82 **4432. CEST of the Cervical Spinal Cord at 7 Tesla**
Adrienne Dula[1], Siddharama Pawate[1], Lindsey M. Dethrage[1], Benjamin N. Conrad[1], Robert L. Barry[1], Seth A. Smith[1]
[1]Vanderbilt University, Nashville, TN, United States

Computer 83 **4433. Cortical Plasticity of the Ipsilateral Motor Areas in Cervical Myelopathy Following Decompression Surgery**
Kayla Ryan[1, 2], Sandy Goncalves[1, 2], Izabela Aleksanderek[1, 2], Robert Bartha, [12], Neil Duggal, [13]
[1]Medical Biophysics, Western University, London, Ontario, Canada; [2]Centre for Functional and Metabolic Mapping, Robarts Research Institute, London, Ontario, Canada; [3]Clinical Neurological Sciences, University Hospital, London, Ontario, Canada

Computer 84 **4434. Large-FOV Tractography of the Brain and Spinal Cord with Reduced Scan Time: a Study Using Diffusion-Weighted, Readout-Segmented EPI and Simultaneous Multi-Slice Acceleration**
Wei Liu[1], Himanshu Bhat[2], Julien Cohen-Adad[3], Kawin Setsompop[4], Dingxin Wang[5], Thomas Beck[6], Stephen F. Cauley[4], Kun Zhou[1], David A. Porter[7]
[1]Siemens Shenzhen Magnetic Resonance Ltd., Shenzhen, Guangdong, China; [2]Siemens Medical Solutions USA, Inc., Charlestown, MA, United States; [3]Department of Electrical Engineering, Institute of Biomedical Engineering, Ecole Polytechnique de Montreal, Montreal, QC, Canada; [4]A.A. Martinos Center for Biomedical Imaging, Dept. of Radiology, MGH, Charlestown, MA, United States; [5]Siemens Medical Solutions USA, Inc., Minneapolis, MN, United States; [6]MR Application Development, Siemens Healthcare, Erlangen, Germany; [7]Fraunhofer MEVIS, Institute for Medical Image Computing, Bremen, Germany

Computer 85 **4435. T1 and T2 Template of the Human Brainstem and Spinal Cord**
J. Touati[1], M. Taso[2, 3], V. Fonov[4], A. Le Troter[2, 3], B. De Leener[1], D.L. Collins[4], V. Callot[2, 3], Julien Cohen-Adad[1, 5]
[1]Institute of Biomedical Engineering, Polytechnique Montreal, Montreal, QC, Canada; [2]CRMBM UMR 7339, Aix- Marseille Université, CNRS, Marseille, France; [3]CEMEREM, Hopital de la Timone, Pôle d'imagerie médicale, AP-HM, Marseille, France; [4]Montreal Neurological Institute, McGill University, Montreal, QC, Canada; [5]Functional Neuroimaging Unit, CRIUGM, Université de Montréal, Montreal, QC, Canada

Computer 86 **4436. Measuring Cross Sectional Area of the Spinal Cord at 7T: Validating Fully Automated Segmentation**
Benjamin N. Conrad[1], Bailey D. Lyttle[2], Siddharama Pawate[3], Robert L. Barry[1, 4], Bennett A. Landman[1, 5], Seth A. Smith[1, 4]
[1]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States; [2]Neuroscience, Vanderbilt University, Nashville, TN, United States; [3]Neurology, Vanderbilt University, Nashville, TN, United States; [4]Radiology and Radiological Sciences, Vanderbilt University Medical Center, Nashville, TN, United States; [5]Electrical Engineering, Vanderbilt University, Nashville, TN, United States

Computer 87 **4437. Template-Based Analysis of Multi-Parametric MRI Data with the Spinal Cord Toolbox**
Benjamin De Leener[1], Augustin Roux[1], Julien Touati[1], Simon Levy[1], Manuel Taso[2, 3], Vladimir Fonov[4], D. Louis Collins[4], Virginie Callot[2, 3], Julien Cohen-Adad[1, 5]
[1]Institute of Biomedical Engineering, Polytechnique Montreal, Montreal, Quebec, Canada; [2]CRMBM UMR 7339, Aix-Marseille Université, CNRS, Marseille, France; [3]CEMEREM, Hopital de la Timone, Pôle d'imagerie médicale, AP-HM, Marseille, France; [4]Montreal Neurological Institute, McGill University, Montreal, Quebec, Canada; [5]Functional Neuroimaging Unit, CRIUGM, Université de Montréal, Montreal, Quebec, Canada

Computer 88 **4438. Comparison of White Matter Damage Progression in Dislocation Versus Contusion Injury in Rat Spinal Cord Using Longitudinal Diffusivity Measurements**
Andrew C.H. Yung[1], Stephen Mattucci[2], Barry Bohnet[3], Jie Liu[2], Wolfram Tetzlaff[2], Piotr Kozlowski[1], Thomas Oxland[2]
[1]UBC MRI Research Centre, University of British Columbia, Vancouver, BC, Canada; [2]ICORD, Vancouver, BC, Canada; [3]UBC MRI Research Centre, University of British Columbia, Vancouver,, BC, Canada

Computer 89 **4439. 3D Brachial Plexus Imaging: Comparison Between STIR and Two Point Dixon Technique**
Mitsuharu Miyoshi[1], Shigeo Okuda[2], Masahiro Jinzaki[2], Atsushi Nozaki[1], Hiroyuki Kabasawa[1]
[1]Global MR Application and Workflow, GE Healthcare Japan, Hino, Tokyo, Japan; [2]2. Department of Diagnostic Radiology, Keio University School of Medicine, Tokyo, Japan

Computer 90 **4440. Isotropic Volumetric Imaging of Lumbar and Brachial Plexus Using Outer Volume Suppression CUBE MSDE**
Anand Kumar Venkatachari[1], Suchandrima Banerjee[2], Mitsuharu Miyoshi[3], Ajit Shankaranarayanan[2], William Dillon[4], Sharmila Majumdar[1], Christopher Hess[4]
[1]Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [2]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [3]Global Applied Science Laboratory, GE Healthcare, Hino, Japan; [4]Neuroradiology, University of California San Francisco, San Francisco, CA, United States

Computer 91 **4441. Resting State Spinal Cord Functional Connectivity at 3 Tesla**
Robert L. Barry[1, 2], Seth A. Smith[1, 2], John C. Gore[1, 2]
[1]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States; [2]Radiology and Radiological Sciences, Vanderbilt University Medical Center, Nashville, TN, United States

Computer 92 **4442. Investigating Functional-Structural Correlations in the Cervical Spinal Cord *In Vivo***
Moreno Pasin[1], Marios C. Yiannakas[1], Ahmed T. Toosy[2], Claudia A M Wheeler-Kingshott[1]
[1]NMR Research Unit, Department of Neuroinflammation, Queen Square MS Centre, UCL Institute of Neurology, London, England, United Kingdom; [2]Department of Brain Repair and Rehabilitation, UCL Institute of Neurology, London, England, United Kingdom

Computer 93 **4443. Comparison Between DTI, MWF, and Frequency Shift Mapping in Assessing White Matter Damage of Spinal Cord**
Evan I-Wen Chen[1, 2], Jie Liu[2], Vanessa Wiggermann[1], Andrew Yung[1], Alexander Rauscher[1, 3], Piotr Kozlowski[1, 3]
[1]MRI Research Center, Vancouver, BC, Canada; [2]International Collaboration On Repair Discoveries, Vancouver, BC, Canada; [3]Radiology, University of British Columbia, Vancouver, BC, Canada

Computer 94 **4444. Optimization of Spinal Cord NODDI Protocol with Multi-Band EPI for Clinical Use**
Masaaki Hori[1, 2], Ryuji Nojiri[2], Katsutoshi Murata[3], Yuichi Suzuki[4], Koji Kamagata[1], Mariko Yoshida[1], Kouhei Tsuruta, [15], Keiichi Ishigame[2], Shigeki Aoki[1]
[1]Radiology, Juntendo University School of Medicine, Tokyo, Japan; [2]Tokyo Medical Clinic, Tokyo, Japan; [3]Siemens Japan K.K., Tokyo, Japan; [4]Radiology, The University of Tokyo Hospital, Tokyo, Japan; [5]Department of Health Science, Graduate School of Human Health Sciences, Tokyo Metropolitan University, Tokyo, Japan

Computer 95 **4445. Velocity Phase Imaging with Simultaneous Multi-Slice EPI Reveals Respiration Driven Motion in Spinal CSF.**
Alexander Beckett[1, 2], Liyong Chen[1, 2], Ajay Verma[3], David A. Feinberg[1, 2]
[1]Helens Wills Neuroscience Institute, University of California, Berkeley, CA, United States; [2]Advanced MRI Technology, Sebastopol, CA, United States; [3]Biogen Idec, MA, United States

Computer 96 **4446. The Comparative Research of Different Sequences on Lumbosacral Nerve Roots with 3.0T MR**
Yunlong Song[1], Lihua Sun[1], Guangnan Quan[2], Lizhi Xie[2]
[1]Department of CT & MRI, Air Force General Hospital, Beijing, China; [2]GE Healthcare China, Beijing, China

Electronic Poster
Myocardial Tissue Differentiation

Exhibition Hall Thursday 10:30-11:30

Computer 1 **4447. High-Resolution Three-Dimensional ANGIE T1 Mapping of the Heart**
Bhairav Bipin Mehta[1], Michael Salerno, [12], Frederick H. Epstein[1, 3]
[1]Department of Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [2]Department of Medicine, Cardiology Division, University of Virginia, Charlottesville, VA, United States; [3]Department of Radiology and Medical Imaging, University of Virginia, Charlottesville, VA, United States

Computer 2 **4448. Evaluation of Extracellular Volume with Limited T1 Mapping Planes Using MOLLI Technique**
Wei Li[1], Eugene Dunkle[2], Claire Feczko[3], Shivraman Giri[4], Edelman R. Robert[1]
[1]Northshore University HealthSystem, Evanston, IL, United States; [2]Northshore University HealthSystem, IL, United States; [3]Northshore University HealthSystem, Evanston, IL, United States, IL, United States; [4]Siemens Healthcare, Chicargo, IL, United States

Computer 3 **4449. Improving the Precision of Arrhythmia-Insensitive Rapid (AIR) T1 Mapping Through Optimization of Saturation Recovery Time Delay**

Kyle Erjin Jeong[1, 2], Kyungpyo Hong[1, 2], Daniel Kim[2, 3]
[1]Bioengineering Department, University of Utah, Salt Lake City, UT, United States; [2]Utah Center for Advanced Imaging Research, University of Utah, Salt Lake City, UT, United States; [3]Department of Radiology, University of Utah, UT, United States

Computer 4 **4450. Prognostic Value of Hypointense Cores Within Chronic Myocardial Infarctions on Balanced Steady-State Free Precession MRI for the Prediction of Malignant Ventricular Arrhythmias**

Ivan Cokic[1], Avinash Kali[1], Hsin-Jung Yang[1], Raymond Yee[2], Richard Tang[1], Mourad Tighiouart[3], Xunzhang Wang[4], Warren M. Jackman[5], Sumeet S. Chugh[4], James A. White[6], Rohan Dharmakumar[1]
[1]Biomedical Sciences - BIRI, Cedars-Sinai Medical Center, Los Angeles, CA, United States; [2]Department of Medicine - Division of Cardiology, London Health Sciences Centre, London, ON, Canada; [3]Biostatistics and Bioinformatics Research Center, Cedars-Sinai Medical Center, Los Angeles, CA, United States; [4]Cedars-Sinai Heart Institute, Cedars-Sinai Medical Center, Los Angeles, CA, United States; [5]Heart Rhythm Institute, University of Oklahoma, Oklahoma City, OK, United States; [6]Department of Cardiac Sciences, University of Calgary - Stephenson Cardiac Imaging Centre, Calgary, AB, Canada

Computer 5 **4451. Free-Breathing Myocardial 3D T1 Mapping Using Inversion Time Specific Image-Based Respiratory Navigators**

Markus Henningsson[1], Rene Botnar[1], Tobias Voigt, [1,2]
[1]Division of Imaging Sciences and Biomedical Engineering, King's College London, London, United Kingdom; [2]Clinical Research Europe, Philips Research, Hamburg, United Kingdom

Computer 6 **4452. Assessment of Acute Cryo and RF Ablation Lesions by Non-Contrast and Contrast Enhanced MRI Techniques: Similarities and Differences**

Eugene G. Kholmovski[1], Ravi Ranjan[2], Joshua Silvernagel[2], Nassir F. Marrouche[2]
[1]UCAIR, Department of Radiology, University of Utah, Salt Lake City, UT, United States; [2]CARMA Center, University of Utah, Salt Lake City, UT, United States

Computer 7 **4453. Non-Contrast MRI for Assessing Myocardial Fibrosis: Initial Study in a Canine Model of Myocardial Reperfusion After Drug Treatments**

Jie Zheng[1], Qian Yin[1], David Muccigrosso[1], Ridong Chen[2], Dana Abendschein[3]
[1]Radiology, Washington University School of Medicine, Saint Louis, MO, United States; [2]APT Therapeutics, Saint Louis, MO, United States; [3]Cardiology Division, Washington University School of Medicine, Saint Louis, MO, United States

Computer 8 **4454. T1ρ-Mapping of the Heart in a Single Breath-Hold**

Joep van Oorschot[1], Hamza El Aidi[1], Fredy Visser[2], Peter Luijten[1], Tim Leiner[1], Jaco Zwanenburg[1]
[1]University Medical Center Utrecht, Utrecht, Netherlands; [2]Philips Healthcare, Best, Noord-Brabant, Netherlands

Computer 9 **4455. Geometrical Complexity of Left Ventricular Endocardial Border Measured by Fractal Analysis: A Comprehensive Study**

ISMRM MERIT AWARD summa cum laude

Andrea S. Dell'Aquila[1], Sofia A. Papadopoulou[1], Sanjay Sharma[1], Lisa J. Anderson[1], Taigang He[1]
[1]Cardiovascular Sciences Research Centre, St George's, University of London, London, Greater London, United Kingdom

Computer 10 **4456. Oxygen-Enhanced T2* Cardiac Magnetic Resonance Imaging in Non-Ischemic Cardiac Diseases**

Satoshi Kawanami[1], Michinobu Nagao[1], Masato Yonezawa[2], Yuzo Yamasaki[2], Takeshi Kamitani[2], Torahiko Yamanouchi[2], Tomomi Ide[3], Ryohei Funatsu[4], Hidetake Yabuuchi[5], Hiroshi Honda[2]
[1]Molecular Imaging & Diagnosis, Kyushu University, Graduate School of Medicine, Fukuoka, Japan; [2]Clinical Radiology, Kyushu University, Graduate School of Medicine, Fukuoka, Japan; [3]Cardiovascular Medicine, Kyushu University, Graduate School of Medicine, Fukuoka, Japan; [4]Radiological Technology, Kyushu University Hospital, Fukuoka, Japan; [5]Health Sciences, Kyushu University, Graduate School of Medicine, Fukuoka, Japan

Computer 11 **4457. Feasibility Analysis of the Chemical Exchange and T_1 Measurement Using Progressive Saturation (CUPS) Method for *In Vivo* Application to Human Myocardium**

David A. Reiter[1], Mustapha Bouhrara[1], Richard G. Spencer[1]
[1]Laboratory of Clinical Investigation, NIH/National Institute on Aging, Baltimore, MD, United States

Computer 12 **4458. Small Animal Myocardial T1 Mapping with Respiratory Motion Navigated Look-Locker Imaging**
ISMRM MERIT AWARD magna cum laude
Pan-Ki Kim[1], Joonsung Lee[1], Byoung Wook Choi[1]
[1]Yonsei University, Seoul, Korea

Computer 13 **4459. 3D Late Gadolinium Enhancement Imaging Using CENTRA-PLUS Ordering with Weighted Navigator Acquisition: Feasibility of Surgically Implanted RV Patch Volume Quantification in Swine Model**
Keigo Kawaji[1], Akiko Tanaka[2], Mita Patel[1], Sui-Cheng Wang[3], Hui Wang[4], Takeyoshi Ota[2], Roberto M. Lang[1], Amit R. Patel[1]
[1]Medicine, Section of Cardiology, The University of Chicago, Chicago, IL, United States; [2]Surgery, The University of Chicago, Chicago, IL, United States; [3]Biomedical Engineering, Northwestern University, Evanston, IL, United States; [4]Philips Medical Systems, Cleveland, OH, United States

Computer 14 **4460. Whole Heart DTI Using Asymmetric Bipolar Diffusion Gradients**
Martijn Froeling[1, 2], Gustav J. Strijkers[3], Aart J. Nederveen[4], Peter R. Luijten[1]
[1]Radiology, UMC Utrecht, Utrecht, Netherlands; [2]Radiology, AMC , Amsterdam, Netherlands; [3]Biomedical engineering and physics, AMC, Amsterdam, Netherlands; [4]Radiology, AMC, Amsterdam, Netherlands

Computer 15 **4461. The Accuracy of Quantitative MR Elastography in an Anatomically Accurate Diastolic Cardiac Phantom**
Arvin Arani[1], Shivaram Poigai Arunachalam[1], Phillip Rossman[1], Armando Manduca[2], David S. Lake[1], Joshua D. Trzasko[1], Kiaran P. McGee[1], Kevin J. Glaser[1], Richard L. Ehman[1], Philip Araoz[1]
[1]Radiology, Mayo Clinic, Rochester, MN, United States; [2]Physiology and Biomedical Engineering, Mayo Clinic, Rochester, MN, United States

Computer 16 **4462. Wideband Arrhythmia-Insensitive-Rapid (AIR) Cardiac T_1 Mapping Pulse Sequence for Suppressing Image Artifacts Induced by ICD**
Kyungpyo Hong[1, 2], Eun-Kee Jeong[1], Daniel Kim[1]
[1]UCAIR, Department of Radiology, University of Utah, Salt Lake City, UT, United States; [2]Department of Bioengineering, University of Utah, Salt Lake City, UT, United States

Computer 17 **4463. Late Gadolinium Enhancement for Left Ventricular Lead Guidance in Cardiac Resynchronization Therapy: Comparison of 3D Free-Breathing IR-FLASH Vs 2D Breath-Hold Phase-Sensitive IR**
Adrian Lam[1], Ankit Parikh[2], Michael Lloyd[2], John Oshinski[1, 3]
[1]Department of Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA, United States; [2]Department of Medicine, Emory University, GA, United States; [3]Department of Radiology and Imaging Science, Emory University, GA, United States

Computer 18 **4464. Improved Arrhythmia-Insensitive-Rapid (AIR) Cardiac T_1 Mapping with Pulse Sequence Optimization: K-Space Ordering and Flip Angle**
Kyungpyo Hong[1, 2], Daniel Kim[1]
[1]UCAIR, Department of Radiology, University of Utah, Salt Lake City, UT, United States; [2]Department of Bioengineering, University of Utah, Salt Lake City, UT, United States

Computer 19 **4465. Measurement and Quantification of Sheep Cardiac Myocyte and Sheetlet Orientation from High-Field 80 × 80 × 160 µm Contrast-Enhanced T1W MRI.**
Stephen Henry Gilbert[1], Julie Magat[2], Mark Trew[3], Valery Ozenne[2], Fanny Vaillant[2], Jérôme Naulin[2], Olivier Bernus[2], Bruno Quesson[2]
[1]Mathematical Cell Physiology, Max Delbrück Center for Molecular Medicine, Berlin, Germany; [2]L'Institut de rythmologie et modélisation cardiaque LIRYC, Pessac, France; [3]Auckland Bioengineering Institute, Auckland, New Zealand

Computer 20 **4466. Hemorrhage Alters T2 BOLD Response in Remote Myocardium Following Acute Myocardial Infarction in a Porcine Model**
Nilesh R. Ghugre[1, 2], Xiuling Qi[1], Jennifer Barry[1], Bradley H. Strauss[3], Graham A. Wright[1, 2]
[1]Physical Sciences Platform, Sunnybrook Research Institute, Toronto, ON, Canada; [2]Department of Medical Biophysics, University of Toronto, Toronto, ON, Canada; [3]Schulich Heart Program, Sunnybrook Health Sciences Centre, Toronto, ON, Canada

Computer 21 **4467. Intralipid Reduces Post-MI Ventricular Remodeling and Heart Failure After Ischemic Injury**

Yijen Lin Wu[1, 2], Fang-Cheng Yeh[3], Chien Ho[4]
[1]Developmental Biology, University of Pittsburgh, Pittsburgh, PA, United States; [2]Rangos Research Center Imaging Core, Children's Hospital of Pittsburgh of UPMC, Pittsburgh, PA, United States; [3]Psychology, Carnegie Mellon University, Pittsburgh, PA, United States; [4]Biological Sciences, Carnegie Mellon University, Pittsburgh, PA, United States

Computer 22 **4468. Early Detection of Doxorubicin Induced Diffuse Myocardial Fibrosis by Contrast Enhanced Magnetic Resonance Imaging in Rabbit Modell: Compared with Histology and Electron Microscopy.**

Byoung Wook Choi[1], Yoo Jin Hong[1], Chul Hwan Park[1], Panki Kim[1]
[1]Radiology, Yonsei University, Seoul, Korea

Computer 23 **4469. Left Atrial Strain Is Correlated to Atrial Fibrosis by Late Gadolinium Enhancement, in an AF Population.**

Dana C. Peters[1], Daniel Cornfeld[1], Albert J. Sinusas[2], James S. Duncan[1], Xenios Papademetris[1], Karl Grunseich[1], Sudhakar Chelikani[1]
[1]Radiology, Yale School of Medicine, New Haven, CT, United States; [2]Cardiology, Yale School of Medicine, New Haven, CT, United States

Computer 24 **4470. Assessment of Diffuse Ventricular Fibrosis in Atrial Fibrillation Using Extracellular Volume Fraction Mapping: Initial Study**

Lei Zhao[1], Xiaohai Ma[1], Songnan Li[2], Tianjing Zhang[3], Jing An[3], Greiser Andreas[4], Zhanming Fan[1]
[1]Radiology, Anzhen Hospital, Capital Medical University, Beijing, China; [2]Cardiology, Anzhen Hospital, Capital Medical University, Beijing, China; [3]MR Collaborations NE Asia, Siemens Healthcare, Beijing, China, Beijing, China; [4]Siemens Healthcare, Erlangen, Germany

Electronic Poster
Cardiac Perfusion & Function

Exhibition Hall Thursday 10:30-11:30

Computer 25 **4471. Efficient Radial Tagging: Undersampled Radial Acquisition with Polar Fourier Transform Reconstruction**

ISMRM MERIT AWARD magna cum laude

Shokoufeh Golshani[1], Abbas Nasiraei Moghaddam[1, 2]
[1]BME, Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran; [2]Radiology, UCLA, Los Angeles, CA, United States

Computer 26 **4472. Assessment of Global Cardiac Function from Tagged Magnetic Resonance Images. Comparison with Cine MRI**

Abram Makram[1], Ayman Khalifa[1], Hossam El-Rewaidy[2], Ahmed Fahmy[2], El-Sayed H. Ibrahim[3]
[1]Helwan University, Cairo, Egypt; [2]Nile University, Cairo, Egypt; [3]University of Michigan, Ann Arbor, MI, United States

Computer 27 **4473. Impact of Temporal Resolution on the Quantification of Regional Myocardial Velocities Using Tissue Phase Mapping**

Kai Lin[1], Robert A. Gordon[2], Keith H. Benzuly[2], Clyde W. Yancy[2], Jon W. Lomasney[2], Vera H. Rigolin[2], Allen S. Anderson[2], Michael Markl[1], James C. Carr[1]
[1]Radiology, Northwestern University Feinberg School of Medicine, Chicago, IL - Illinois, United States; [2]Cardiology, Northwestern University Feinberg School of Medicine, Chicago, IL - Illinois, United States

Computer 28 **4474. Multi-Slice Excitation with MRI Tagging for Single Breath Hold Estimates of Left Ventricular Rotational Mechanics**

Zhe Wang[1, 2], Ziwu Zhou[1, 2], Yi Wang[3], Peng Hu[1, 2], Daniel B. Ennis[1, 2]
[1]Radiological Science, University of California, Los Angeles, CA, United States; [2]Bioengineering, University of California, Los Angeles, CA, United States; [3]Neurology, University of California, Los Angeles, CA, United States

Computer 29 **4475. Improvement of Left Ventricular Strain with Reduction of Mean Pulmonary Arterial Pressure in Pulmonary Hypertension: Treatment Effect Independent of Right Ventricular Volumetric Parameters.**

ISMRM MERIT AWARD magna cum laude

Tomoyoshi Kimura[1, 2], Hideki Ota[1], Koichiro Sugimura[3], Kazuomi Yamanaka[1], Tatsuo Nagasaka[1], Hiroaki Shimokawa[3], Kei Takase[1], Haruo Saito[2]
[1]Radiology, Tohoku University Hospital, Sendai, Miyagi, Japan; [2]Graduate School of Medicine, Tohoku University, Sendai, Miyagi, Japan; [3]Cardiology, Tohoku University Hospital, Sendai, Miyagi, Japan

Computer 30 **4476. A Novel Approach to Comprehensive Atrio-Ventricular Functional Analysis**
Xiaoxia Zhang[1, 2], Nikhil Jha[1, 2], Himanshu Gupta[3], Nouha Salibi, [24], Thomas Jr. Denney[1, 2]
[1]Department of Electrical and Computer Engineering, Auburn University, Auburn, AL, United States; [2]AU MRI Research Center, Auburn University, Auburn, AL, United States; [3]Department of Medicine, Division of Cardiovascular Disease, University of Alabama at Birmingham, Birmingham, AL, United States; [4]MR R&D, Siemens Healthcare, Malvern, PA, United States

Computer 31 **4477. Normalized Wall Thickening Patterns for Detecting Cardiac Functional Abnormality from Cine MRI Images**
Mai Wael[1], El-Sayed H. Ibrahim[2], Ahmed Fahmy[1]
[1]Nile University, Cairo, Egypt; [2]University of Michigan, Ann Arbor, MI, United States

Computer 32 **4478. Left Ventricular (LV) Volume Based Indices for the Evaluation of Diastolic Function Using High Frame Rate Cine SSFP Imaging: Direct Comparison with Doppler Echocardiography**
Jiming Zhang[1], Amol Pednekar[2], Jie Chen[1], Claudio Arena[1], Debra Dees[1], Benjamin Cheong[1], Raja Muthupillai[1]
[1]Diagnostic and Interventional Radiology, CHI St Luke's Health, Houston, TX, United States; [2]Philips Healthcare, Houston, TX, United States

Computer 33 **4479. Free Breathing Variable Flip Angle Balanced SSFP Cardiac Cine Imaging with Reduced SAR at 3T**
Subashini Srinivasan[1, 2], Randall M. Kroeker[3], Adam Plotnik[1], Simon Gabriel[1], Nancy Halnon[4], Peng Hu[1], J. Paul Finn[1], Daniel B. Ennis[1, 2]
[1]Department of Radiological Sciences, University of California, Los Angeles, CA, United States; [2]Department of Bioengineering, University of California, Los Angeles, CA, United States; [3]Siemens Healthcare, Malvern, PA, United States; [4]Department of Pediatrics, University of California, Los Angeles, CA, United States

Computer 34 **4480. Robust Free-Breathing Whole-Heart Cine MRI Using Multi-Slab 3D Acquisition with Isotropic Resolution and Offline Reformattability**
ISMRM MERIT AWARD magna cum laude
Peng Lai[1], Joseph Y. Cheng[2], Shreyas S. Vasanawala[2], Anja CS Brau[3]
[1]Global MR Applications & Workflow, GE Healthcare, Menlo Park, CA, United States; [2]Radiology, Stanford University, CA, United States; [3]Global MR Applications & Workflow, GE Healthcare, Munich, Germany

Computer 35 **4481. Can We Rely on the New 1T "benchtop" Systems for Investigating Cardiac Function and Viability?**
Daniel James Stuckey[1], Thomas A. Roberts[1], Laurence H. Jackson[1], Rajiv Ramasawmy[1], Valerie Taylor[1], Anna L. David[2], Bernard Siow[1], Mark F. Lythgoe*[1]*
[1]Centre for Advanced Biomedical Imaging, UCL - University College London, London, United Kingdom; [2]Institute for Women's Health, UCL - University College London, London, United Kingdom

Computer 36 **4482. Evaluation of Myocardial Eulerian Strain Using Bandpass Optical Flow. Comparison to Harmonic Phase Imaging**
Azza Hassanein[1], Ayman Khalifa[1], El-Sayed H. Ibrahim[2]
[1]Helwan University, Cairo, Egypt; [2]University of Michigan, Ann Arbor, MI, United States

Computer 37 **4483. Heterogeneity of Myocardial ATP Flux Rate Via CK *In Vivo* Porcine Hearts with HiPSC Tri-Lineage Cell Transplantation Using 2D CSI P-31 MR Spectroscopy**
Weina Cui[1], Lei ye[1], Albert Jang[1], Pengyuan Zhang[1], Qiang Xiong[1], Jianyi Zhang[1]
[1]Department of Medicine/cardiology, University of Minnesota, minneapolis, MN, United States

Computer 38 **4484. High Resolution Quantitative Spiral CMR Perfusion Imaging Demonstrates a Reduced Endocardial to Epicardial Perfusion Gradient and Myocardial Flow Reserve in Patients with Microvascular Disease**
Michael Salerno[1, 2], Yang Yang[3], Peter Shaw[4], Angela Taylor[4], Craig Meyer[3], Fred Epstein[3], Christopher Kramer, [45]
[1]Medicine, Cardiology, University of Virginia, Charlottesville, VA, United States; [2]Radiology, University of Virginia, Charlottesville, VA, United States; [3]Biomedical Engineering, University of Virginia, VA, United States; [4]Medicine, Cardiology, University of Virginia, VA, United States; [5]Radiology, University of Virginia, VA, United States

Computer 39 **4485. Prospectively Accelerated CMR First-Pass Perfusion Imaging in Patients with Suspected Heart Disease**
Xiao Chen[1], Michael Salerno[2, 3], Christopher M. Kramer[3, 4], Bhairav B. Mehta[1], Yang Yang[1], Peter Shaw[4], Frederick H. Epstein[1]

[1]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [2]Radiology, University of Virginia, Charlottesville, VA, United States; [3]Cardiology, University of Virginia, Charlottesville, VA, United States; [4]Medicine, Cardiovascular Medicine, University of Virginia, Charlottesville, VA, United States

Computer 40 **4486. A Novel Fully Automatic Motion Correction Scheme for Cardiac Perfusion MR Images Using Group-Wise Non-Rigid Registration**

Sandeep Kaushik[1], Dattesh Shanbhag[1], Anne Menini[2], Sheshadri Thiruvenkadam[1], Stephanie Reiter[3], Tobias Heer[3], Günter Pilz[3], Anja Brau[4]
[1]Medical Image Analysis Lab, GE Global Research, Bangalore, Karnataka, India; [2]GE Global Research, Garching, Bavaria, Germany; [3]Department of Cardiology, Clinic Agatharied Academic Teaching Hospital, University of Munich, Hausham, Bavaria, Germany; [4]GE Healthcare, Garching, Bavaria, Germany

Computer 41 **4487. FLASH Proton Density Imaging for Improved Surface Coil Intensity Correction in Quantitative and Semi-Quantitative SSFP Myocardial Perfusion Imaging**

Sonia Nielles-Vallespin[1], Peter Kellman[1], Li-Yueh Hsu[1], Andrew E. Arai[1]
[1]National Institutes of Health, Bethesda, MD, United States

Computer 42 **4488. Radial CAIPIRINHA for Rapid 6 Slice Myocardial Perfusion Without Magnetization Preparation**

Haonan Wang[1], Neal Kepler Bangerter[1], Liyong Chen[2], Ganesh Adluru[3], Edward V.R DiBella[3]
[1]Department of Electrical & Computer Engineering, Brigham Young University, Provo, UT, United States; [2]Advanced MRI Technologies, Sebastopol, CA, United States; [3]Utah Center for Advanced Imaging Research, University of Utah, Salt Lake City, UT, United States

Computer 43 **4489. Data-Driven Dynamic Coil-Bias Correction for Segmented Myocardial Perfusion Images.**

Roman Wesolowski[1, 2], Eva Sammut[2], Niloufar Zarinabad Nooralipour[2], Eike Nagel[2], Amedeo Chiribiri[2]
[1]University of Birmingham, Birmingham, West Midlands, United Kingdom; [2]King's College London, London, United Kingdom

Computer 44 **4490. A Preliminary Assessment of Magnetic Resonance Low-Multi-B Values Diffusion Weighted Imaging in Patients with Hypertrophic Cardiomyopathy**

Mou anna[1], Li zhiyong[2], Zhang ziheng[3], Song qingwei[2], Liu ailian[2]
[1]The First Affiliated Hospital of Dalian Medical University, China, Liaoning, China; [2]The First Affiliated Hospital of Dalian Medical University, Liaoning, China; [3]GE Healthcare China, Beijing, China

Computer 45 **4491. Fusion and Combined Evaluation of 3D-CMR-Perfusion with 3D-MR-Coronary Angiography**

Alexander Gotschy[1, 2], Lukas Wissmann[1], Datta Singh Goolaub[1], Markus Niemann[3], Sebastian Kozerke[1], Robert Manka[1, 3]
[1]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [2]Department of Internal Medicine, University Hospital Zurich, Zurich, Switzerland; [3]Department of Cardiology, University Hospital Zurich, Switzerland

Computer 46 **4492. Heart-Rate Independent, Whole-Heart, Free-Breathing, Quantitative Myocardial BOLD MRI at 3T with Simultaneous 13N-Ammonia PET Validation in Canines**

Hsin-Jung Yang[1], Damini Dey[2], Jane Sykes[3], John Butler[3], Avinash Kali[2], Ivan Cokic[2], Behzad Sharif[2], Sotirios Tsaftaris[4], Debiao Li[2], Piotr Slomka[2], Frank Prato[3], Rohan Dharmakumar[2]
[1]Cedars Sinai Medical Center, Los angeles, CA, United States; [2]Cedars Sinai Medical Center, CA, United States; [3]Lawson Health Research Institute, ON, Canada; [4]IMT Lucca Institute, Lucca, Italy

Computer 47 **4493. Reducing Dark-Rim Artifacts in Free-Breathing First-Pass Perfusion Cardiac MRI with Cartesian Sampling and Instantaneous Image Reconstruction**

Zhengwei Zhou[1, 2], Xiaoming Bi[3], Hsin-Jung Yang[1, 2], Rohan Dharmakumar[1], Reza Arsanjani, [14], C Noel Bairey Merz[4], Daniel Berman, [14], Debiao Li[1, 2], Behzad Sharif[1]
[1]Biomedical Imaging Research Institute, Cedars-Sinai Medical Center, Los Angeles, CA, United States; [2]Department of Bioengineering, University of California, Los Angeles, Los Angeles, CA, United States; [3]MR R&D, Siemens Healthcare, Los Angeles, CA, United States; [4]Cedars-Sinai Heart Institute, Los Angeles, CA, United States

Computer 48 **4494. Through-Plane Dark-Rim Artefacts in 3D First-Pass Perfusion**

Merlin J. Fair[1, 2], Peter D. Gatehouse[1, 2], David N. Firmin[1, 2]

[1]NHLI, Imperial College London, London, United Kingdom; [2]NIHR Cardiovascular BRU, Royal Brompton Hospital, London, United Kingdom

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CE & Non-CE NRA

Exhibition Hall Thursday 10:30-11:30

Computer 49 4495. Improving Flow Characterization in SNAP with K-Space Acquisition Reordering

Jinnan Wang[1], Haining Liu[2], Zechen Zhou[3], Niranjan Balu[2], Thomas S. Hatsukami[2], Jin Liu[2], Peter Boernert[4], Chun Yuan[2]
[1]Philips Reserach North America, Seattle, WA, United States; [2]University of Washington, Seattle, WA, United States; [3]Tsinghua University, Beijing, China; [4]Philips Research Europe, Hamburg, Germany

Computer 50 4496. Non-Contrast-Enhanced Peripheral Venography Using Velocity-Selective Magnetization Preparation and Transient Balanced SSFP

Taehoon Shin[1], Seth J. Kligerman[1], Robert S. Crawford[2], Sanjay Rajagopalan[3], Rao P. Gullapalli[1]
[1]Radiology, University of Maryland, Baltimore, MD, United States; [2]Vascular Surgery, University of Maryland, MD, United Kingdom; [3]Cardiovascular Medicine, University of Maryland, Baltimore, MD, United States

Computer 51 4497. Non-Contrast MRA in PAD Patients: Diagnostic Comparison of QISS, ECG-FSE, and QIR Techniques

Christopher J. Hanrahan[1], Marc Lindley[1], Michelle Mueller[2], Daniel Sommers[1], Marta E. Heilbrun[1], Glen Morrell[1], Daniel Kim[1], Vivian S. Lee[1]
[1]Radiology, UCAIR, University of Utah School of Medicine, Salt Lake City, UT, United States; [2]Vascular Surgery, University of Utah School of Medicine, Salt Lake City, United States

Computer 52 4498. Comprehensive Arterial Assessment in Diabetic Patients Using Combined Quiescent Interval Single Shot (QISS) Imaging for Leg Imaging and QISS-Arterial Spin Labeled MRA for Pedal Imaging: Preliminary Experience with Comparison to DSA

Ruth P. Lim[1, 2], Adrienne CY Lam[1], Matthew Lukies[1], Dinesh Ranatunga[1], Emma K. Hornsey[1], Brenden McColl[1], Yuliya Perchyonok[1, 2], Jason Chuen, [23], Jason Heidrich[1], Pei-Heng Ko[3], Robert R. Edelman[4]
[1]Radiology, Austin Health, Melbourne, Victoria, Australia; [2]The University of Melbourne, Melbourne, Victoria, Australia; [3]Vascular Surgery, Austin Health, Melbourne, Victoria, Australia; [4]Radiology, NorthShore University Health System, Chicago, IL, United States

Computer 53 4499. Comparison of 3D Non-Contrast Enhanced Foot MR Angiography Using Steady-State Free Precession with Single and Multi-Directional FSD Modules Preparation

Na Zhang[1, 2], Zhaoyang Fan[3], Xin Liu[1, 2]
[1]Lauterbur Research Center for Biomedical Imaging, Shenzhen Institutes of Advanced Technology of Chinese Academy of Sciences, Shenzhen, Guangdong, China; [2]Shenzhen Key Laboratory for MRI, Shenzhen, Guangdong, China; [3]Biomedical Imaging Research Institute, Cedars-Sinai Medical Center, Los Angeles, CA, United States

Computer 54 4500. Velocity-Selective Magnetization-Prepared Non-Contrast-Enhanced Cerebral MR Angiography at 3T

Qin Qin[1, 2], Taehoon Shin[3], Michael Schar[1], Hua Guo[4], Ye Qiao[1]
[1]Radiology, Johns Hopkins University, Baltimore, MD, United States; [2]Kirby Center, Kennedy Krieger Institute, Baltimore, MD, United States; [3]Radiology, University of Maryland, Baltimore, MD, United States; [4]Center for Biomedical Imaging Research, Biomedical Engineering, Tsinghua University, Beijing, China

Computer 55 4501. Velocity-Selective Magnetization-Prepared Non-Contrast-Enhanced Peripheral MR Angiography at 3T

Taehoon Shin[1], Qin Qin[2], Jang-Yeon Park[3], Sanjay Rajagopalan[4]
[1]Diagnostic Radiology, University of Maryland, Baltimore, MD, United States; [2]Radiology, Johns Hopkins University, Baltimore, MD, United States; [3]Biomedical Engineering, Sungkyunkwan University, Suwon, Gyeonggi-do, Korea; [4]Cardiology, University of Maryland, Baltimore, MD, United States

Computer 56 4502. 3D TOF MR Angiography Using Combined Compressed Sensing and Parallel Imaging with Coil Compression

Naoyuki Takei[1], Kevin F. King[2], Adriana Kanwischer[2], Hiroyuki Kabasawa[3]
[1]GE Healthcare , Hino, Tokyo, Japan; [2]GE Healthcare, WI, United States; [3]GE Healthcare, Hino, Tokyo, Japan

Computer 57 **4503.** **Additive Value of Non Contrast MRA for Evaluation of Mesenteric Arterial Anatomy in Preoperative Planning for Living Donor Liver Transplants.**
Elizabeth M. Hecht[1], Firas Ahmed[1], Anuradha Shenoy-Bhangle[1], Guillermo Jimenez[1], Stuart Bentley-Hibbert[1], Martin Prince[1]
[1]Columbia University, New York, NY, United States

Computer 58 **4504.** **Undersampled Motion Compensated LOST Reconstruction for Free-Breathing Coronary MRA**
Andrew Peter Aitken[1], Mehmet Akçakaya[2], Rene Botnar[1], Claudia Prieto[1]
[1]Division of Imaging Sciences and Biomedical Engineering, King's College London, London, United Kingdom; [2]Department of Medicine, Beth Israel Deaconess Medical Center, Boston, MA, United Kingdom

Computer 59 **4505.** **Large Slice FOV Non-Contrast MR Angiography with Variable Slice Resolution 3D Time-Of-Flight**
Yutaka Nattsuaki[1], Xiaoming Bi[1], Aurelien F. Stalder[2], Gerhard Laub[1]
[1]Siemens Healthcare, Los Angeles, CA, United States; [2]Siemens Healthcare, Erlangen, Germany

Computer 60 **4506.** **Image Quality and Accuracy of a 3D Whole-Heart Self-Navigated Sequence in Comparison with Cardiac Computed Tomography for the Assessment of Coronary Artery Anomalies**
Giuseppe Muscogiuri[1, 2], Akos Varga-Szemes[1], U. Joseph Schoepf[1], Carlo N. De Cecco[1, 2], Davide Piccini[3, 4], Wolfgang G. Rehwald[5, 6], Anthony M. Hlavacek[1], Arni C. Nutting[1]
[1]Medical University of South Carolina, Charleston, SC, United States; [2]University of Rome Sapienza, Rome, Italy; [3]Siemens Healthcare IM BM IP, Lausanne, Switzerland; [4]University of Lausanne, Lausanne, Switzerland; [5]Siemens Medical Solutions, Chicago, IL, United States; [6]Duke Cardiovascular Magnetic Resonance Center, Durham, NC, United States

Computer 61 **4507.** **ECG Gated 3D Single Shot Fast Spin Echo with Variable TR for Non-Contrast Peripheral MR Angiography at 3T**
Xiangzhi Zhou[1], Cheng Ouyang[1], Aiming Lu[1], Mitsue Miyazaki[1]
[1]Toshiba Medical Research Institute USA, Vernon Hills, IL, United States

Computer 62 **4508.** **High-Resolutional Visualization of the Lenticulostriate Artery: Application of Compressed Sensing for Faster Acquisition**
Tomohisa Okada[1], Koji Fujimoto[1], Yasutaka Fushimi[1], Akira Yamamoto[1], Kei Sano[2], Toshiyuki Tanaka[2], Naotaka Sakashita[3], Kaori Togashi[1]
[1]Dept. of Diagnostic Imaging and Nuclear Medicine, Kyoto University Graduate School of Medicine, Kyoto, Japan; [2]Department of Informatics, Kyoto University Graduate School of Informatics, Kyoto, Japan; [3]Toshiba Medical Systems, Otawara, Tochigi, Japan

Computer 63 **4509.** **Turbo Quiescent-Interval Single-Shot (TurboQISS): Accelerated Non-Enhanced Peripheral Angiography**
Shivraman Giri[1], Eugene Dunkle[2], Wei Li[2], Ian Murphy[2, 3], Ioannis Koktzoglou[2, 4], Robert R. Edelman[2, 3]
[1]Siemens Healthcare, Chicago, IL, United States; [2]Radiology, NorthShore University HealthSystem, IL, United States; [3]Radiology, Northwestern University Feinberg School of Medicine, IL, United States; [4]Radiology, The University of Chicago Pritzker School of Medicine, IL, United States

Computer 64 **4510.** **Combined Parallel Imaging and Compressed Sensing for Rapid Inflow-Enhanced Inversion Recovery (IFIR) Imaging of Carotid Arteries**
Allison Grayev[1], Utaroh Motosugi[1, 2], Peter Bannas[1, 3], Naoyuki Takei[4], Kevin King[5], Kang Wang[6], James Holmes[7], Scott Reeder[8, 9], Aaron Field[1]
[1]Department of Radiology, University of Wisconsin, Madison, WI, United States; [2]Department of Radiology, University of Yamanashi, Yamanashi, Japan; [3]Department of Radiology, University Hospital Hamburg-Eppendorf, Hamburg, Germany, Germany; [4]Global MR Applications and Workflow, GE Healthcare, Hino, Japan; [5]Global MR Applications and Workflow, GE Healthcare, Waukesha, WI, United States; [6]Global MR Applications and Workflow, GE Healthcare, Madison, WI, United States; [7]Department of Medical Physics, University of Wisconsin, Madison, WI, United States; [8]Department of Radiology; Department of Medical Physics, University of Wisconsin, Madison, WI, United States; [9]Department of Biomedical Engineering and Medicine; Department of Emergency Medicine, University of Wisconsin, Madison, WI, United States

Computer 65 **4511. Dietary Intake Enhances the Visualization of MR Portography Using Non-Contrast-Enhanced Time-Spatial Labeling Inversion Pulse (Time-SLIP) - Evaluation of Temporal Change After Meal to Determine an Appropriate Examination Timing -**

Hiroki Matoba[1], Akiyoshi Yamamoto[1], Yuji Shintani[1], Daiji Uchiyama[1], Seigo Yoshida[1], Katsumi Nakamura, [12], Mitsue Miyazaki[3]
[1]Radiology, Tobata Kyoritsu Hospital, Kitakyusyu, Fukuoka, Japan; [2]Radiology, Hikari Central Hospital, Hikari, Yamaguchi, Japan; [3]Toshiba Medical Research Institute USA, Vernon Hills, IL, United States

Computer 66 **4512. Fat Saturation Improves Fresh Blood Imaging of Peripheral Vessels in the Calf Station**

Marc D. Lindley[1, 2], Daniel Kim[1], Glen Morrell[1], Marta E. Heilbrun[1], Christopher J. Hanrahan[1], Vivian S. Lee[1]
[1]UCAIR, Radiology, University of Utah, Salt Lake City, UT, United States; [2]Physics, University of Utah, Salt Lake City, UT, United States

Computer 67 **4513. Velocity Selective Prepared Non-Contrast Enhanced MR Angiography Using Phase Sensitive Reconstruction**

Xinzeng Wang[1], Joshua S. Greer[1, 2], Shu Zhang[1], Ananth J. Madhuranthakam[1, 3]
[1]Radiology, UT Southwestern Medical Center, Dallas, TX, United States; [2]Bioengineering, UT Dallas, Dallas, TX, United States; [3]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States

Computer 68 **4514. High Resolution, First Pass 3D Gadolinium-Enhanced Venography of the Jugular Veins: Application to Multiple Sclerosis**

Andrew J. Walsh[1], Derek J. Emery[2], Ken Warren[3], Ingrid Catz[3], Alan H. Wilman[1]
[1]Biomedical Engineering, University of Alberta, Edmonton, Alberta, Canada; [2]Radiology and Diagnostic Imaging, University of Alberta, Edmonton, Alberta, Canada; [3]Neurology, University of Alberta, Edmonton, Alberta, Canada

Computer 69 **4515. Positive Contrast High-Resolution 3D-Cine Imaging of the Cardiovascular System in Small Animals Using a UTE Sequence and Iron Nanoparticles at 4.7, 7 and 9.4 T**

Aurélien Julien Trotier[1], William Lefrancois[1], Kris Van Renterghem[1], Jean-Michel Franconi[1], Eric Thiaudière[1], Sylvain Miraux[1]
[1]RMSB-UMR5536, CNRS - Université de Bordeaux, Bordeaux, Aquitaine, France

Computer 70 **4516. The Effects of Injection Rate on Vascular Signal Intensity Profile in a Porcine Model Using Four Gadolinium Contrast Agents: Comparison Between Observation and Prediction Based on Measured Blood Relaxivity Values**

Jeffrey H. Maki[1], Guenther Schneider[2], Alexander Massmann[2], Matthias Leist[2], Diane Wagner-Jochem[2], Gregory J. Wilson[1]
[1]Radiology, University of Washington, Seattle, WA, United States; [2]Radiology, University Hosptial of Saarland, Homburg, Germany

Computer 71 **4517. An MRI-Based CFD Analysis of Flow Patterns in the Jugular Vein**

Evan Kao[1, 2], Farshid Faraji[1], Sarah Kefayati[1], Van Halbach[1], Matthew Amans[1], David Saloner[1]
[1]Radiology, UCSF, San Francisco, CA, United States; [2]Bioengineering, UC Berkeley, Berkeley, CA, United States

Computer 72 **4518. angioCEST: Using TmDOTMA Liposomes and Chemical Exchange Saturation Transfer for MR Angiography**

Todd C. Soesbe[1, 2], Ketan B. Ghaghada[3], S. James Ratnakar[1], Chandreshkumar Patel[3], Mark Milne[1], A. Dean Sherry[1, 4], Robert E. Lenkinski[2]
[1]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States; [2]Department of Radiology, UT Southwestern Medical Center, Dallas, TX, United States; [3]Texas Children's Hospital, Houston, TX, United States; [4]Department of Chemistry, University of Texas at Dallas, Dallas, TX, United States

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Vessel Wall & Cardiovascular Image Processing

Exhibition Hall Thursday 11:30-12:30

Computer 1 **4519. Effect of BOLD Contrast on Myocardial Registration**

Ilkay Oksuz[1], Anirban Mukhopadhyay[1], Marco Bevilacqua[1], Hsin-Jung Yang[2, 3], Rohan Dharmakumar[2, 3], Sotirios A. Tsaftaris[1, 4]
[1]IMT Institute for Advanced Studies, Lucca, Tuscany, Italy; [2]Biomedical Research Institute, Cedars Sinai Medical Center, Los Angeles, CA, United States; [3]Medicine, University of California, Los Angeles, CA, United States; [4]Electrical Engineering and Computer Science, Northwestern University, IL, United States

Computer 2 **4520. Three-Dimensional Super-Resolution Technique for Whole-Heart Coronary MRA by Utilizing Graphical Processing Unit**

Ryohei Nakayama[1], Masaki Ishida[1], Yasutaka Ichikawa[1], Yoshitaka Goto[1], Motonori Nagata[1], Kakuya Kitagawa[1], Hajime Sakuma[1]
[1]Department of Radiology, Mie University School of Medicine, Tsu, Mie, Japan

Computer 3 **4521. Extracting a Cine Cardiac Cycle Without Respiratory Motion from Real-Time Free-Breathing Images with Unsupervised Motion Correction**

Haris Saybasili[1], Marie-Pierre Jolie[2], Bruce Spottiswoode[1]
[1]Siemens Healthcare, Chicago, IL, United States; [2]Imaging and Computer Vision, Siemens Corporation, Corporate Technology, NJ, United States

Computer 4 **4522. Software for Multi-Average Processing in Neonatal Cardiac Imaging**

Andreia S. Gaspar[1, 2], David J. Cox[1], Alan M. Groves[1, 3], Anthony N. Price[1]
[1]Centre for the Developing Brain, King's College London, London, United Kingdom; [2]Instituto de Biofisica e Engenharia Biomedica, Faculdade de Ciencias, Universidade de Lisboa, Lisboa, Portugal; [3]Department of Pediatrics, Weill Cornell Medical College, NY, United States

Computer 5 **4523. Prediction of the Benefit of Motion-Compensated Reconstruction for Whole-Heart Coronary MRI**

Jens Wetzl[1, 2], Christoph Forman[3], Andreas Maier[1, 2], Joachim Hornegger[1, 2], Michael O. Zenge[3]
[1]Pattern Recognition Lab, Department of Computer Science, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany; [2]Erlangen Graduate School in Advanced Optical Technologies (SAOT), Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany; [3]Siemens AG, Healthcare, Imaging & Therapy Systems, Magnetic Resonance, Erlangen, Germany

Computer 6 **4524. Retrospective Motion Correction for Carotid Vessel Wall Imaging**

Rui Li[1], Shujing Cao[1], Feng Huang[2], Chun Yuan[1, 3]
[1]Center for Biomedical Imaging Research, Tsinghua University, Beijing, China; [2]Philips Research China, Shanghai, China; [3]University of Washington, Seattle, WA, United States

Computer 7 **4525. Artifact Removal in Carotid Imaging Based on Motion Measurement Using Structured Light**

Huijun Chen[1], Jin Liu[2], Zechen Zhou[1], Chun Yuan[2], Peter Boernert[3], Jinnan Wang[4]
[1]Tsinghua University, Beijing, China; [2]University of Washington, Seattle, WA, United States; [3]Philips Research Europe, Hamburg, Germany; [4]Philips Reserach North America, Seattle, WA, United States

Computer 8 **4526. Data Driven Feature Learning for Representation of Myocardial BOLD MR Images**

Anirban Mukhopadhyay[1], Marco Bevilacqua[1], Ilkay Oksuz[1], Rohan Dharmakumar[2, 3], Sotirios Tsaftaris[1, 4]
[1]IMT Institute for Advanced Studies Lucca, Lucca, LU, Italy; [2]Biomedical Imaging Research Institute, Cedars-Sinai Medical Center, Los Angeles, CA, United States; [3]Medicine, University of California, Los Angeles, Los Angeles, CA, United States; [4]Electrical Engineering and Computer Science, Northwestern University, Evanston, Il, United States

Computer 9 **4527. Dictionary-Based Support Vector Machines for Unsupervised Ischemia Detection at Rest with CP-BOLD Cardiac MRI**

Marco Bevilacqua[1], Anirban Mukhopadhyay, Ilkay Oksuz, Cristian Rusu[2], Rohan Dharmakumar[3, 4], Sotirios A. Tsaftaris, [5]
[1] IMT Institute for Advanced Studies, Lucca, LU, Italy; [2]University of Vigo, Vigo, Galicia, Spain; [3]Biomedical Imaging Research Institute, Cedars-Sinai Medical Center, Los Angeles, CA, United States; [4]Medicine, University of California, Los Angeles, CA, United States; [5]Electrical Engineering and Computer Science, Northwestern University, Evanston, IL, United States

Computer 10 **4528. An Integer Optimization Technique for Measuring Biventricular Cardiac Strain from Tagged MR Images**

Ming Li[1, 2], Himanshu Gupta[3], Steven G. Lloyd[3], Louis J. Dell'Italia[3], Thomas S. Denney Jr. [1, 2]
[1]Auburn University MRI Research Center, Auburn University, Auburn, AL, United States; [2]Electrical and Computer Engineering, Auburn University, AL, United States; [3]Division of Cardiovascular Disease, University of Alabama at Birmingham, AL, United States

Computer 11 **4529. Fully Automated Strain Analysis from SSFP Cines of the Heart Using Non-Rigid Registration Techniques**
Yun-Jung Jack Tsai[1], Yingmin Liu[1], Andreas Greiser[2], Carmel Hayes[2], Helen Lam[1], Chris Occleshaw[1], Alistair Young[1], Brett Cowan[1]
[1]University of Auckland, Auckland MRI Research Group, Auckland, New Zealand; [2]Siemens Healthcare, Erlangen, Germany

Computer 12 **4530. Unwrapping-Based Fat-Suppression Method for Imaging Scar Using Bipolar Dual-Echo Acquisition**
Junmin Liu[1], Dana C. Peters[2], Maria Drangova[1, 3]
[1]Imaging Research Laboratories, Robarts Research Institute, Schulich School of Medicine & Dentistry, University of Western Ontario, London, Ontraio, Canada; [2]Department of Diagnostic Radiology, Yale Medical School, New Haven, CT, United States; [3]Department of Medical Biophysics, Schulich School of Medicine & Dentistry, University of Western Ontario, London, Ontario, Canada

Computer 13 **4531. T1-Mapping Based Synthetic Phase-Sensitive Inversion Recovery Imaging for the Accurate Quantification of Myocardial Late Gadolinium Enhancement**
Akos Varga-Szemes[1], Rob J. van der Geest[2], Bruce Spottiswoode[3], Giuseppe Muscogiuri[1, 4], Carlo N. De Cecco[1, 4], Pal Suranyi[1], Wolfgang G. Rehwald[3, 5], U. Joseph Schoepf[1]
[1]Medical University of South Carolina, Charleston, SC, United States; [2]Leiden University Medical Center, Leiden, Netherlands; [3]Siemens Medical Solutions, Chicago, IL, United States; [4]University of Rome Sapienza, Rome, Italy; [5]Duke Cardiovascular Magnetic Resonance Center, Durham, NC, United States

Computer 14 **4532. Ungated, Free-Breathing Arrhythmia-Insensitive-Rapid (AIR) Cardiac T_1 Mapping with Motion Corrected Registration**
Kyungpyo Hong[1, 2], Ganesh Adluru[1], Edward VR. DiBella[1], Daniel Kim[1]
[1]UCAIR, Department of Radiology, University of Utah, Salt Lake City, UT, United States; [2]Department of Bioengineering, University of Utah, Salt Lake City, UT, United States

Computer 15 **4533. Synthetic LGE Derived Automatically from Cardiac T_1 Mapping Using K-Means Clustering of T_1: Virtual TI Scout Approach**
Kyungpyo Hong[1, 2], Edward VR. DiBella[1], Akram Shaaban, Daniel Sommer, Leif Jensen, Eugene G. Kholmovski[1], Ravi Ranjan[3], Daniel Kim[1]
[1]UCAIR, Department of Radiology, University of Utah, Salt Lake City, UT, United States; [2]Department of Bioengineering, University of Utah, Salt Lake City, UT, United States; [3]Cardiology, Internal Medicine, University of Utah, Salt Lake City, UT, United States

Computer 16 **4534. Motion Correction of Free Breathing Quantitative Myocardial T2 Mapping: Impact on Reproducibility and Spatial Variability**
Sébastien Roujol[1], Tamer A. Basha[1], Sebastian Weingärtner[1], Mehmet Akcakaya[1], Sophie Berg[1], Warren Manning[1, 2], Reza Nezafat[1]
[1]Department of Medicine, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, United States; [2]Department of Radiology, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, United States

Computer 17 **4535. The Influence of Geometric and In-Flow Boundary Conditions on Patient-Specific Computational Fluid Dynamics in a Fontan Patient Population**
Merih Cibis[1], Kelly Jarvis[2, 3], Alex J. Barker[2], Michael Rose[2, 4], Cynthia Rigsby[2, 4], Michael Markl[2, 3], Jolanda J. Wentzel[1]
[1]Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands; [2]Radiology, Northwestern University, Chicago, IL, United States; [3]Biomedical Engineering, Northwestern University, Chicago, IL, United States; [4]Medical Imaging, Ann& Robert H Lurie Children's Hospital of Chicago, Chicago, IL, United States

Computer 18 **4536. *In-Vivo* Systolic Pressure Gradients Across the Aortic Root in Patients with a Physiologically Shaped Sinus Prosthesis and Healthy Volunteers Analyzed by 4D Flow MRI**
Thekla Oechtering[1], Carl Frederik Hons[1], Julian Haegele[1], Peter Hunold[1], Michael Scharfschwerdt[2], Anja Hennemuth[3], Markus Huellebrand[3], Hans-Hinrich Sievers[2], Jörg Barkhausen[1], Alex Frydrychowicz[1]
[1]Clinic for Radiology and Nuclear Medicine, University Hospital Schleswig-Holstein, Lübeck, Germany; [2]Department of Cardiac and Cardiothoracic Vascular Surgery, University Hospital Schleswig-Holstein, Lübeck, Germany; [3]Fraunhofer MEVIS, Bremen, Germany

Computer 19 **4537. 3D Cine Atherosclerotic Plaque Images Using 3D Stack of Stars Trajectory Acquisition and Ciné Reconstruction Method Using Retrospective Ordering and Compressed Sensing (Ciné-ROCS)**
Seong-Eun Kim[1], John A. Roberts[1], J. Scott Mcnally[1], Bradley D. Bolster, Jr. [2], Gerald S. Treiman[3, 4], Dennis L. Parker[1]
[1]UCAIR, Department of Radiology, University of Utah, Salt Lake City, UT, United States; [2]Siemens Healthcare, Salt Lake City, UT, United States; [3]Department of Surgery, University of Utah, Salt Lake City, UT, United States; [4]Department of Veterans Affairs, VASLCHCS, Salt Lake City, UT, United States

Computer 20 **4538. Whole-Brain Intracranial Arterial Wall Imaging at 3 Tesla: 3D TSE with CSF Attenuation and Enhanced T1 Weighting**
Zhaoyang Fan[1], Qi Yang[1, 2], Debiao Li[1]
[1]Biomedical Imaging Research Institute, Cedars-Sinai Medical Center, Los Angeles, CA, United States; [2]Radiology, Xuanwu Hospital, Beijing, China

Computer 21 **4539. Volumetric Aortic Vessel Wall MRI Using Improved Flow-Independent T2-Prepared Phase Sensitive Inversion Recovery at 3T**
M.G.M. van de Steeg[1, 2], M. Henningsson[2], A. Noorani[2], K. Nicolay[1], R. Botnar[2]
[1]Division of Molecular Bioengineering and Molecular Imaging, Eindhoven University of Technology, Eindhoven, Netherlands; [2]Division of Imaging Sciences and Biomedical Engineering, King's College London, London, United Kingdom

Computer 22 **4540. Comparison Between Carotid Wall T1,T2 Quantifications with and Without 3D IMSDE Reference Scan**
Shan Gao[1], Bram F. Coolen[2], Rob J. van der Geest[1], Dirk H.J. Poot[3, 4], Aart J. Nederveen[2]
[1]Division of Image Processing, Department of Radiology, Leiden University Medical Center, Leiden, Netherlands; [2]Radiology, Academic Medical Center, Amsterdam, Netherlands; [3]Biomedical Imaging Group Rotterdam, Erasmus MC Rotterdam, Rotterdam, Netherlands; [4]Imaging Science and Technology, Delft University of Technology, Delft, Netherlands

Computer 23 **4541. Lumen Expansion at Five Locations Along the Venous System of Murine Models**
Olivia Palmer[1], Amos Cao[2], Ulrich Scheven[2], Jose A. Diaz[3], Joan M. Greve[2]
[1]Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States; [2]Biomedical Engineering, University of Michigan, MI, United States; [3]Surgery, Section of Vascular Surgery, Conrad Jobst Vascular Research Lab, University of Michigan, MI, United States

Computer 24 **4542. The Effect of Ivabradine on Plaque Size, Biomechanics, and Microvasculature in Atherosclerotic Rabbits Measured Using MR and Ultrasound Imaging**
Raf H.M. van Hoof[1, 2], Evelien Hermeling[1, 2], Julie Salzmann[3], Judith C. Sluimer, [24], Sylvia Heeneman, [24], Arnold P.G. Hoeks, [25], Harry A.J. Struijker-Boudier, [26], Jérôme Roussel[3], Joachim E. Wildberger[1, 2], M. Eline Kooi[1, 2]
[1]Radiology, Maastricht University Medical Center, Maastricht, Netherlands; [2]Cardiovascular Research Institute Maastricht (CARIM), Maastricht University, Maastricht, Netherlands; [3]Institut de Recherches Internationales Servier, Suresnes, France; [4]Pathology, Maastricht University Medical Center, Maastricht, Netherlands; [5]Biomedical Engineering, Maastricht University Medical Center, Maastricht, Netherlands; [6]Pharmacology, Maastricht University Medical Center, Maastricht, Netherlands

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Let It Flow

Exhibition Hall Thursday 11:30-12:30

Computer 25 **4543. Intracranial K-T Accelerated Dual-Venc 4D Flow MRI**
Susanne Schnell[1], Can Wu[1, 2], Ian G. Murphy[1], Julio Garcia[1], Michael Markl[1, 2]
[1]Radiology, Northwestern University, Chicago, IL, United States; [2]Biomedical Engineering, Northwestern University, Evanston, IL, United States

Computer 26 **4544. Accelerating Flow Encoded MRI by Exploiting Vector Field Divergence Regularization**
Claudio Santelli[1, 2], Michael Loecher[3], Julia Busch[2], Oliver Wieben[3, 4], Tobias Schaeffter[1], Sebastian Kozerke[1, 2]
[1]Imaging Sciences and Biomedical Engineering, King's College London, London, United Kingdom; [2]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [3]Department of Medical Physics, University of Wisconsin-Madison, WI, United States; [4]Department of Radiology, University of Wisconsin-Madison, WI, United States

Computer 27 4545. New Method for Efficient, Volumetric Quantification of Aortic Hemodynamics
Michael J. Rose[1], Kelly Jarvis[2, 3], Varun Chowdhary[2], Alex J. Barker[2], Bradley D. Allen[2], Joshua D. Robinson[4, 5], Michael Markl[2, 3], Cynthia K. Rigsby[1, 2], Susanne Schnell[2]
[1]Medical Imaging, Ann & Robert H. Lurie Children's Hospital of Chicago, Chicago, IL, United States; [2]Radiology, Northwestern University, Chicago, IL, United States; [3]Biomedical Engineering, Northwestern University, Chicago, IL, United States; [4]Pediatrics, Northwestern University, Chicago, IL, United States; [5]Pediatric Cardiology, Ann & Robert H. Lurie Children's Hospital of Chicago, Chicago, IL, United States

Computer 28 4546. Dual-Velocity Encoding Phase-Contrast MRI: Extending the Dynamic Range and Lowering the Velocity to Noise Ratio
Susanne Schnell[1], Julio Garcia[1], Can Wu[1, 2], Michael Markl[1, 2]
[1]Radiology, Northwestern University, Chicago, IL, United States; [2]Biomedical Engineering, Northwestern University, Evanston, IL, United States

Computer 29 4547. Assessing Caval Flow Distribution in Patients with Fontan Circulation Using 4D Flow MRI and Probabilistic Flow Connectivity Mapping
ISMRM MERIT AWARD magna cum laude
Kelly Jarvis[1, 2], Susanne Schnell[1], Alex J. Barker[1], James Carr[1], Joshua D. Robinson[3, 4], Cynthia K. Rigsby[1, 4], Michael Markl[1, 2]
[1]Radiology, Northwestern University, Chicago, IL, United States; [2]Biomedical Engineering, Northwestern University, Chicago, IL, United States; [3]Pediatrics, Northwestern University, Chicago, IL, United States; [4]Medical Imaging and Cardiology, Ann & Robert H Lurie Children’s Hospital of Chicago, IL, United States

Computer 30 4548. Impact of View Ordering and Soft-Gating on Morphologic Assessment of Congenital Heart Disease with 4D Flow
Joseph Y. Cheng[1, 2], Kate Hanneman[2], Tao Zhang[1, 2], Marcus T. Alley[2], Peng Lai[3], Jonathan I. Tamir[4], Martin Uecker[4], Michael Lustig[4], John M. Pauly[1], Shreyas S. Vasanawala[2]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Radiology, Stanford University, Stanford, CA, United States; [3]Global MR Applications & Workflow, GE Healthcare, Menlo Park, CA, United States; [4]Electrical Engineering and Computer Sciences, University of California, Berkeley, CA, United States

Computer 31 4549. Radial Displacement Errors and Correction Efficiency for Streamline Visualization in 4D-Flow MRI
Michael Loecher[1], Kevin M. Johnson[1], Patrick Turski[2], Oliver Wieben[1, 2]
[1]Medical Physics, University of Wisconsin Madison, Madison, WI, United States; [2]Radiology, University of Wisconsin Madison, Madison, WI, United States

Computer 32 4550. Clinical Evaluation and Optimization of Highly Accelerated 2D and 4D Phase Contrast Flow Imaging Applications Using Sparse Sampling and Iterative Reconstruction
Andreas Greiser[1], Christoph Forman[1], Jens Wetzel[2], Christoph Tillmanns[3], Aurelien F. Stalder[4], Michaela Schmidt[4], Michael Zenge[5], Edgar Mueller[4]
[1]Siemens AG, Healthcare, Imaging & Therapy Systems, Magnetic Resonance , Erlangen, Bavaria, Germany; [2]Department of Computer Science, Friedrich-Alexander-Universität Erlangen-Nuernberg, Pattern Recognition Lab, Erlangen, Bavaria, Germany; [3]Diagnostikum Berlin, Berlin, Germany; [4]Siemens AG, Healthcare, Imaging & Therapy Systems, Magnetic Resonance, Erlangen, Bavaria, Germany; [5]Siemens Healthcare, NY, United States

Computer 33 4551. Comparison of MRI and CFD Based Wall Shear Stress and Their Relationship with Wall Thickening in Human Carotid Arteries
Merih Cibis[1], Wouter V. Potters[2], Mariana Selwaness[3], Frank J. Gijsen[1], Andres M. Arias Lorza[4], Aad van der Lugt[3], Aart J. Nederveen[2], Jolanda J. Wentzel[1]
[1]Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands; [2]Radiology, AMC, Amsterdam, Netherlands; [3]Epidemiology, Erasmus MC, Rotterdam, Netherlands; [4]Radiology and Medical Informatics, Erasmus MC, Rotterdam, Netherlands

Computer 34 4552. USPIO Enhanced 3D-Cine Phase Contrast of the Whole Cardiovascular System in Small Animals at 7T with an Ultrashort Echo Time Sequence
Aurélien Julien Trotier[1], Charles Castets[1], William Lefrancois[1], Jean-Michel Franconi[1], Eric Thiaudière[1], Sylvain Miraux[1]
[1]RMSB-UMR5536, CNRS - Université de Bordeaux, Bordeaux, Aquitaine, France

Computer 35 **4553. Inter Breath-Hold Reproducibility of High Temporal Resolution Spiral Phase Velocity Mapping of Coronary Artery Blood Flow and *In Vivo* Validation Against Doppler Flow Wire**
Jennifer Keegan[1], Claire Raphael[1], Kim Parker[2], Robin Simpson[3], Ranil de Silva[1], Carlo Di Mario[1], Julian Collinson[4], Rod Stables[5], Stephen Strain[1], Sanjay Prasad[1], David Firmin[1, 2]
[1]Royal Brompton Hospital, London, United Kingdom; [2]Imperial College, London, United Kingdom; [3]Radiological Physics, Freiburg, Germany; [4]Chelsea and Westminster Hospital, United Kingdom; [5]Liverpool Heart and Chest Hospital, United Kingdom

Computer 36 **4554. Impact of Aortic Valve Replacement on Turbulent Flow Characteristics**
Christian Binter[1], Alexander Gotschy[1, 2], Robert Manka[1, 3], Simon H. Sündermann[4], Sebastian Kozerke[1, 5]
[1]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [2]Dept. of Internal Medicine, University Hospital Zurich, Switzerland; [3]Dept. of Cardiology, University Hospital Zurich, Switzerland; [4]Division of Cardiovascular Surgery, University Hospital Zurich, Switzerland; [5]Imaging Sciences and Biomedical Engineering, King's College London, United Kingdom

Computer 37 **4555. Preliminary Fetal Hemodynamic Patterns in Late Gestation Fetuses with Common Forms of Cyanotic Congenital Heart Disease by Phase Contrast MRI and T2 Mapping**
Prashob Porayette[1], Christopher Macgowan[2], Sujana Madathil[1], Edgar Jaeggi[1], Lars Grosse-Wortmann[1], Shi-Joon Yoo[3], John Kingdom[4], Greg Ryan[5], Steven Miller[6], Mike Seed[1]
[1]Pediatric Cardiology, The Hospital for Sick Children, Toronto, ON, Canada; [2]Physiology & Experimental Medicine, The Hospital for Sick Children, Toronto, ON, Canada; [3]Diagnostic Imaging, The Hospital for Sick Children, Toronto, ON, Canada; [4]Obstetrics & Gynaecology, Mount Sinai Hospital, Toronto, ON, Canada; [5]Maternal-Fetal Medicine, Mount Sinai Hospital, Toronto, ON, Canada; [6]Neurology, The Hospital for Sick Children, Toronto, ON, Canada

Computer 38 **4556. Self-Gated Tissue Phase Mapping Using Golden Angle Radial Sparse SENSE**
Jan Paul[1], Stefan Wundrak[1], Peter Bernhardt[1], Wolfgang Rottbauer[1], Heiko Neumann[2], Volker Rasche[1]
[1]Internal Medicine II, University Hospital Ulm, Ulm, Germany; [2]Institute of Neural Information Processing, University of Ulm, Ulm, Germany

Computer 39 **4557. Spatio-Temporal Sacrifices for Wall Shear Stress and Oscillatory Shear Stress Calculations**
Wouter V. Potters[1], Merih Cibis[2], Frank JH Gijsen[2], Henk A. Marquering[1, 3], Ed vanBavel[3], Jolanda J. Wentzel[2], Aart J. Nederveen[1]
[1]Radiology, Academic Medical Center, Amsterdam, Netherlands; [2]Biomedical Engineering, Erasmus Medical Center, Rotterdam, Netherlands; [3]Biomedical Engineering & Physics, Academic Medical Center, Amsterdam, Netherlands

Computer 40 **4558. 4D Vs. 2D Flow MRI in 109 Patients with Dilated Ascending Aorta: Improved Assessment of Peak Systolic Velocity**
Martin Fasshauer[1, 2], Alexander L. Powell[3], Alex J. Barker[3], Susanne Schnell[3], Joachim Lotz, [24], Michael Markl[3, 5]
[1]Institute for Diagnostic And Interventional Radiology, University Medical Center Goettingen, Goettingen, Lower saxony , Germany; [2]German Center for Cardiovascular Research, DZHK, partner site Goettingen, Germany; [3]Department of Radiology, Nortwestern University, Chicago, IL, United States; [4]Institute for Diagnostic And Interventional Radiology, University Medical Center Goettingen, Goettingen, Lower saxony, Germany; [5]Department of Biomedical Engineering, Northwestern University, Chicago, IL, United States

Computer 41 **4559. Analysis of Aortic Pulse Wave Velocities Using Real-Time PC MRI**
Arun Antony Joseph[1], Martin Fasshauer[2], Klaus-Dietmar Merboldt[3], Jens Frahm[3]
[1]Biomedizinsche NMR Forschungs GmbH am Max Planck Institut fuer biophysikalische Chemie, Goettingen, Niedersachsen, Germany; [2]Abteilung Diagnostische Radiologie, Universitätsmedizin Goettingen, Niedersachsen, Germany; [3]Biomedizinsche NMR Forschungs GmbH am Max Planck Institut fuer biophysikalische Chemie, Niedersachsen, Germany

Computer 42 **4560. MR Phase-Contrast Imaging with Automatic Inline Flow Quantification and Visualization**
Mehmet Akif Gulsun[1], Arne Littmann[2], Timothy Slesnick[3], Ning Jin[4], Andreas Greiser[2], Marie-Pierre Jolly[1], Gary McNeal[4], Aurelien F. Stalder[2]
[1]Imaging and Computer Vision, Siemens Corporate Technology, Princeton, NJ, United States; [2]Siemens Healthcare, Erlangen, Germany; [3]Emory University School of Medicine, Children's Healthcare of Atlanta, GA, United States; [4]Siemens Healthcare, IL, United States

Computer 43 **4561. High-Acquisition-Efficiency Cardiac 4D Flow MRI for High-SNR Motion-Robust Imaging with Contrast Agent During Delayed Enhancement Wait Time**
Peng Lai[1], Ann Shimakawa[1], Joseph Y. Cheng[2], Marcus T. Alley[2], Shreyas S. Vasanawala[2], Anja CS Brau[3]

[1]Global MR Applications & Workflow, GE Healthcare, Menlo Park, CA, United States; [2]Radiology, Stanford University, CA, United States; [3]Global MR Applications & Workflow, GE Healthcare, Munich, Germany

Computer 44 4562. Assessment of Flow Vorticity in the Right Heart of Patients with Repaired Tetralogy of Fallot

Julio Garcia[1], Daniel Hirtler[2], Alex J Barker[1], Julia Geiger[2, 3]
[1]Radiology, Northwestern University, Chicago, IL, United States; [2]Congenital Heart Defects and Pediatric Cardiology, University Hospital Freiburg, Freiburg, Germany; [3]Radiology, University Childrens' Hospital Zurich, Zurich, Switzerland

Computer 45 4563. Coil Array Compression for Tissue Phase Mapping

Jan Paul[1], Stefan Wundrak[1], Heiko Neumann[2], Volker Rasche[1]
[1]Internal Medicine II, University Hospital Ulm, Ulm, Germany; [2]Institute of Neural Information Processing, University of Ulm, Ulm, Germany

Computer 46 4564. 4D Flow MRI to Monitor Mean Pulmonary Arterial Pressure in Patients with Chronic Thromboembolic Pulmonary Hypertension Treated by Percutaneous Transluminal Pulmonary Angioplasty

Hideki Ota[1], Koichiro Sugimura[2], Haruka Sato[2], Kotaro Nochioka[2], Shunsuke Tatebe[2], Saori Yamamoto[2], Masanobu Miura[2], Kimio Satoh[2], Yuta Urushibata[3], Yoshiaki Komori[3], Aurelien F. Stalder[4], Andreas Greiser[4], Hiroaki Shimokawa[2], Kei Takase[1]
[1]Diagnostic Radiology, Tohoku University Hospital, Sendai, Miyagi, Japan; [2]Cardiology, Tohoku University Hospital, Sendai, Miyagi, Japan; [3]Siemens Japan K.K, Tokyo, Japan; [4]Siemens Healthcare, Erlangen, Germany

Computer 47 4565. 4D Flow MRI Assessment of Cerebrospinal Venous Blood Flow in Multiple Sclerosis Patients and Age/Sex-Matched Controls

Eric Mathew Schrauben[1], Kevin M. Johnson[1], Aaron Field[2], Oliver Wieben[1, 2]
[1]Medical Physics, University of Wisconsin - Madison, Madison, WI, United States; [2]Radiology, University of Wisconsin - Madison, Madison, WI, United States

Computer 48 4566. Systolic Pressure Gradients Derived from 4D Flow in a Physiological Healthy and Aortic Coarctation Phantom Versus Cardiac Catheterization

Jesús Urbina[1, 2], Julio Sotelo[2, 3], Cristian Montalba[2], Cristián Tejos[2, 3], Pablo Irarrázaval[2, 3], Marcelo Andía[2, 4], Israel Valverde[5, 6], Sergio Uribe[2, 4]
[1]School of Medicine, Pontificia Universidad Católica de Chile, Santiago, Chile; [2]Biomedical Imaging Center, Pontificia Universidad Católica de Chile, Santiago, Chile; [3]Electrical Engineering Department, Pontificia Universidad Católica de Chile, Santiago, Chile; [4]Radiology Department, Pontificia Universidad Católica de Chile, Santiago, Chile; [5]Pediatric Cardiology Unit, Hospital Virgen del Rocio, Seville, Spain; [6]Institute of Biomedicine of Seville, Universidad de Sevilla, Seville, Spain

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New Insights & Innovations in Cardiovascular MRI

Exhibition Hall Thursday 11:30-12:30

Computer 49 4567. Simultaneous Multi-Slice Dark Blood Cardiac Imaging Using Multiband Double-Inversion Recovery TSE

Dingxin Wang[1, 2], Edward Auerbach[3], Gary McNeal[4], Peter Kollasch[1], Uma Valeti[5], Vibhas Deshpande[6], Kamil Ugurbil[3], Greg Metzger[3]
[1]Siemens Healthcare, Minneapolis, MN, United States; [2]CMRR, Department of Radiology , University of Minnesota, Minneapolis, MN, United States; [3]CMRR, Department of Radiology, University of Minnesota, Minneapolis, MN, United States; [4]Siemens Healthcare, Dallas, TX, United States; [5]Departments of Medicine and Radiology, University of Minnesota, Minneapolis, MN, United States; [6]Siemens Healthcare, Austin, TX, United States

Computer 50 4568. Free-Breathing Diffusion Tensor MRI of the Entire Human Heart *In Vivo* Using Simultaneous Multislice Excitation and Spatiotemporal Registration

Choukri Mekkaoui[1], Timothy G. Reese[2], Stephen F. Cauley[2], Kawin Setsompop[2], Himanshu Bhat[3], William J. Kostis[2], Marcel P. Jackowski[4], David E. Sosnovik[2]
[1]Harvard Medical School - Massachussetts General Hospital, Boston, MA, United States; [2]Harvard Medical School-Massachusetts General Hospital, Boston, MA, United States; [3]Siemens, Boston, MA, United States; [4]University of São Paulo, São Paulo, Brazil

Computer 51 4569. Respiratory Resolved Cardiac Cine Imaging Using Self-Gated Golden Angle Radial Acquisition

Karen Holst[1], Martin Ugander[1], Andreas Sigfridsson[1]

[1]Department of Clinical Physiology, Karolinska Institutet and Karolinska University Hospital, Stockholm, Sweden

Computer 52 **4570.** **Cardiac Magnetic Resonance Imaging with Doppler Ultrasound as Alternative Trigger Method at 3T**

Fabian Kording[1], Bjoern Schoennagel[1], Friedrich Ueberle[2], Gunnar Lund[1], Gerhard Adam[1], Jin Yamamura[1]
[1]Department of Diagnostic and Interventional Radiology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Faculty of Life Sciences, University of Aplied Sciences, Hamburg, Germany

Computer 53 **4571.** **4D Flow MRI of the Great Vessels During Respiration Plateaus**

Eric Mathew Schrauben[1], Christopher J. François[2], Oliver Wieben[1, 2], Alejandro Roldán-Alzate[2]
[1]Medical Physics, University of Wisconsin - Madison, Madison, WI, United States; [2]Radiology, University of Wisconsin - Madison, WI, United States

Computer 54 **4572.** **Multi-Channel Double-Tuned TX/RX RF Coil Using Loop Elements for ^{23}Na and Loopole Elements for ^{1}H Cardiac MR Imaging at 7.0 Tesla**

Helmar Waiczies[1], Jan Rieger[1], Armin M. Nagel[2], Andreas Graessl[3], Lukas Winter[3], Thoralf Niendorf[3]
[1]MRI.Tools GmbH, Berlin, Germany; [2]Division of Medical Physics in Radiology, Cancer Research Center (DKFZ), Heidelberg, Germany; [3]Berlin Ultrahigh Field Facility (B.U.F.F.), Max Delbrück Center for Molecular Medicine, Berlin, Germany

Computer 55 **4573.** **7D DSA : a Dual Modality Combination of 4D DSA and 4D Flow MRI**

CHARLES ANTHONY MISTRETTA[1], CHARLES STROTHER, OLIVER WIEBEN[1]
[1]MEDICAL PHYSICS AND RADIOLOGY, U OF WISCONSIN-MADISON, MADISON, WI, United States

Computer 56 **4574.** ***In Vivo* Detection of Myocardial Fibrosis Using Native T1ρ and T2* Mapping in an Animal Model of Chronic Myocardial Infarction**

Joep van Oorschot[1], Sanne Jansen of Lorkeers[1], Fredy Visser[2], Pieter Doevendans[1], Johannes Gho[1], Steven Chamuleau[1], Peter Luijten[1], Jaco Zwanenburg[1]
[1]University Medical Center Utrecht, Utrecht, Netherlands; [2]Philips Healthcare, Best, Noord-Brabant, Netherlands

Computer 57 **4575.** **Accelerate Free Breathing Cardiac Cine Imaging with Propeller and GRAPPA**

Tsung-Lun Wu[1], Ching-Lung Cheng[2], Ming-Ting Wu[3, 4], Ming-Long Wu[1, 2], Tzu-Cheng Chao[1, 2]
[1]Department of Computer Science and Information Engineering, National Cheng-Kung University, Tainan, Taiwan; [2]Institute of Medical Informatics, National Cheng-Kung University, Tainan, Taiwan; [3]Department of Radiology, Kaohsiung Veterans General Hospital, Kaohsiung, Taiwan; [4]School of Medicine, National Yang-Ming University, Taipei, Taiwan

Computer 58 **4576.** **Free-Breathing 3D Late Gadolinium Enhancement MRI Using Outer Volume Suppressed Projection Navigators**

Rajiv G. Menon[1], G Wilson Miller[2], Jean Jeudy[1], Sanjay Rajagopalan[3], Taehoon Shin[1]
[1]Diagnostic Radiology and Nuclear Medicine, University of Maryland, Baltimore, Baltimore, MD, United States; [2]Department of Radiology and Medical Imaging, University of Virginia, Charlottesville, VA, United States; [3]Division of Cardiovascular Medicine, University of Maryland, Baltimore, Baltimore, MD, United States

Computer 59 **4577.** **MRI Assessment of Cardiac Function in Response to Exercise**

Jacob Macdonald[1], Omid Forouzan[2], Jared Warczytowa[2], Oliver Wieben[1, 3], Naomi Chesler[2], Christopher Francois[3]
[1]Medical Physics, University of Wisconsin - Madison, Madison, WI, United States; [2]Biomedical Engineering, University of Wisconsin - Madison, Madison, WI, United States; [3]Radiology, University of Wisconsin - Madison, Madison, WI, United States

Computer 60 **4578.** **Rapid Ungated Free-Breathing Cardiac MRI Protocol**

Edward DiBella[1, 2], Elwin Bassett[3], Kyungpyo Hong, [23], Ganesh Adluru[3], Devavrat Likhite[3], Promporn Suksaranjit[4], Brent Wilson[4], Chris McGann[4], Daniel Kim, [23]
[1]University of Utah, Salt Lake City, UT, United States; [2]Bioengineering, University of Utah, Salt Lake City, UT, United States; [3]Radiology, University of Utah, UT, United States; [4]Cardiology, University of Utah, UT, United States

Computer 61 **4579.** **Real-Time Heart MRI of the Mouse**

Amir Moussavi[1], Philipp R. Bovenkamp[2], Verena Hoerr[2], Cornelius Faber[2], Susann Boretius[1]

[1]Section Biomedical Imaging, Department of Radiology and Neuroradiology, Christian-Albrechts-University, Kiel, Germany; [2]Institute of Clinical Radiology, University Hospital of Muenster, Muenster, Germany

Computer 62 **4580. Cardiac Diffusion-Weighted MRI with Selective RF Excitation in a Single Breath-Hold**

Mahdi Salmani Rahimi[1], Dominik Fleischmann[1], Anne Chin[1, 2], Roland Bammer[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Radiology, Centre hospitalier de l'Université de Montréal, Montreal, QC, Canada

Computer 63 **4581. Whole-Heart T1 and Extracellular Volume Fraction Mapping with 6 Heartbeats**

Sohae Chung[1, 2], Pippa Storey[1, 2], Leon Axel[1, 2]
[1]Center for Advanced Imaging Innovation and Research (CAI2R), Department of Radiology, New York University School of Medicine, New York, NY, United States; [2]Bernard and Irene Schwartz Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States

Computer 64 **4582. A New Method for Quantification of Aortic Stiffness *In Vivo* Using Magnetic Resonance Elastography (MRE): A Translational Study from Sequence Design to Implementation in Patients**

Rachel Clough[1], Ondrej Holub[1], Henry Fok[1], Nick Gaddum[1], Jordi Alastruey[1], Ralph Sinkus[1]
[1]King's College London, London, United Kingdom

Computer 65 **4583. A Novel Imagery-Based Method for Preoperative EVAR/TEVAR Modeling: Validation**

Anou Sewonu[1, 2], Ramiro Moreno[1, 2], Olivier Meyrignac[3], Hervé Rousseau[3]
[1]I2MC, INSERM/UPS UMR 1048, Toulouse, France; [2]ALARA Expertise, Strasbourg, France; [3]Pôle imagerie, CHU Toulouse, Toulouse, France

Computer 66 **4584. New Intrinsic Frequency Measures of Cardiac Function Vs. Cardiac MRI as a Gold Standard**

Niema M. Pahlevan[1, 2], Thao T. Tran[3], Peyman M. Tavallali[4], Derek G. Rinderknecht[5], Marie Csete, Morteza M. Gharib[4]
[1]Medical Engineering, California Institute of Technology, Pasadena, CA, United States; [2]Magnetic Resonance Spectroscopy, Huntington Medical Research Institute, Pasadena, CA, United States; [3]Magnetic Resonance Spectroscopy, Huntington Medical Research Institutes, Pasadena, CA, United States; [4]Graduate Aerospace Laboratory, California Institute of Technology, Pasadena, CA, United States; [5]Aerospace, California Institute of Technology, Pasadena, CA, United States

Computer 67 **4585. *In Vivo* Cardiac MR Elastography on Mouse**

Yifei Liu[1], Thomas J. Royston[1, 2], E Douglas Lewandowski[3, 4]
[1]Department of Mechanical & Industrial Engineering, University of Illinois at Chicago, Chicago, IL, United States; [2]Department of Bioengineering, University of Illinois at Chicago, Chicago, IL, United States; [3]Center for Cardiovascular Research, University of Illinois at Chicago, Chicago, IL, United States; [4]Department of Physiology & Biophysics and Medicine (Cardiology), University of Illinois at Chicago, Chicago, IL, United States

Computer 68 **4586. Simulation and Phantom Study of Wall Shear Stress in Arteriovenous Grafts**

Daniel Beauchamp[1, 2], Steven G. Lloyd[3, 4], Michael Allon[3], Timmy Lee[3], Nouha Salibi, [15], Thomas S. Denney Jr. [1, 2]
[1]AU MRI Research Center, Auburn University, Auburn, AL, United States; [2]Electrical and Computer Engineering, Auburn University, Auburn, AL, United States; [3]Department of Medicine, University of Alabama at Birmingham, Birmingham, AL, United States; [4]VA Medical Center, Birmingham, AL, United States; [5]MR R&D, Siemens Healthcare, Malvern, PA, United States

Computer 69 **4587. Myocardial Steatosis and Its Association with Obesity and Regional Ventricular Dysfunction: Evaluated by Magnetic Resonance Tagging and 1H Spectroscopy in Healthy African Americans**

Chia-Ying Liu[1], David A. Bluemke[1], Gary Gerstenblith[2], Stefan L. Zimmerman[2], Ji li[2], hong zhu[3], Shenghan Lai[2], Hong Lai[2]
[1]Radiology and Imaging Sciences, NIH, Bethesda, MD, United States; [2]Johns Hopkins School of Medicine, MD, United States; [3]johns Hopkins School of Medicine, MD, United States

Computer 70 **4588. Dedicated Neonatal Cardiac Coil – Preliminary Results**

Michael S. Hansen[1], Russel R. Cross[2], Laura J. Olivieri, [12], Kendall O'Brien, [12], Hui Xue[1], Matthew R. DiPrimio[3], Paul Taylor[3], Tsinghua Zheng[3], Xiaoyu Yang[3], Matthew Finnerty[3], Peter Kellman[1]

[1]National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD, United States; [2]Children's National Medical Center, Washington, D.C., United States; [3]Quality Electrodynamics, Mayfield Village, OH, United States

Computer 71 **4589. ECG and Navigator-Free 4D Whole-Heart Coronary MRA: Preliminary Comparisons with Conventional Protocols**
Jianing Pang[1], Behzad Sharif[1], Zhaoyang Fan[1], Xiaoming Bi[2], Reza Arsanjani[1], Daniel S. Berman[1], Debiao Li[1, 3]
[1]Biomedical Imaging Research Institute, Cedars-Sinai Medical Center, Los Angeles, CA, United States; [2]MR R&D, Siemens Healthcare, Los Angeles, CA, United States; [3]Medicine and Bioengineering, University of California, Los Angeles, CA, United States

Computer 72 **4590. Comprehensive Morphological Classification of Bicuspid Aortic Valve by Cine CMR in 368 Patients.**
Ian Gavin Murphy[1], Alex J. Barker[2], Michael Markl[2], Chris memorial Malaisrie[3], Patrick M. McCarthy[3], Colleen memorial Clennon[4], James C. Carr[1], Jeremy Collins[1]
[1]Cardiovascular Imaging, Feinberg School of Medicine, Northwestern Memorial Hospital, CHICAGO, IL, United States; [2]Cardiovascular Imaging, Northwestern University, CHICAGO, IL, United States; [3]Cardiothoracic Surgery, Feinberg School of Medicine, Northwestern Memorial Hospital, CHICAGO, IL, United States; [4]Cardiothoracic Specialist Nurse, Feinberg School of Medicine, Northwestern Memorial Hospital, CHICAGO, IL, United States

Electronic Poster
Hyperpolarized MR

Exhibition Hall Thursday 13:30-14:30

Computer 1 **4591. Comparison of FDG-PET and Hyperpolarized Pyruvate in Assessing Response to an Isoform-Specific PI3K Inhibitor in Breast Cancer**
Aaron K. Grant[1], Gopal Varma[1], Hai Hu[2], Xiaoen Wang[1], Ashish Juvekar[2], Soumya Ullas[2], Gerburg Wulf[2]
[1]Radiology, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, United States; [2]Hematology and Oncology, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, United States

Computer 2 **4592. High Resolution Hyperpolarized Metabolic Imaging with Three-Dimensional Spectral-Spatial EPI at 7T**
Jack J. Miller[1, 2], Angus Z. Lau[1, 3], Damian J. Tyler[1, 3]
[1]Department of Physiology, Anatomy & Genetics, University of Oxford, Oxford, United Kingdom; [2]Department of Physics, University of Oxford, Oxford, United Kingdom; [3]Department of Cardiovascular Medicine, OCMR, University of Oxford, Oxford, United Kingdom

Computer 3 **4593. Effect of Acetate Concentration on Its Cerebral Metabolism Studied by Hyperpolarized ^{13}C MRS**
Elise Vinckenbosch[1], Mor Mishkovsky[1], Arnaud Comment[2], Rolf Gruetter[1, 3]
[1]Laboratory for Functional and Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [2]Institute Of Physics Of Biological Sytems, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [3]Department of Radiology, Université de Lausanne et de Genève, Lausanne and Geneva, Switzerland

Computer 4 **4594. Magnetic Field Dependence of Singlet State Lifetimes and Implications for Hyperpolarized Magnetic Resonance**
Thomas Theis[1], Matthew Morgan[1], Kevin Claytor[2], Ryan Davis[3], Zijian Zhou[1], Warren Warren[4]
[1]Chemistry, Duke University, Durham, NC, United States; [2]Physics, Duke University, Durham, NC, United States; [3]BME, Duke University, Durham, NC, United States; [4]Chemistry, Physics, Radiology and BME, Duke University, Durham, NC, United States

Computer 5 **4595. Time Evolution of [1,2-^{13}C]Pyruvate Doublet Asymmetry in Hyperpolarized ^{13}C MRS**
Keshav Datta[1], Daniel Spielman[2]
[1]Dept. of Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Dept. of Radiology, Stanford University, Stanford, CA, United States

Computer 6 **4596. *In Vivo* T_2 Mapping of Hyperpolarized [1-^{13}C] Pyruvate Using an Indirect Method**
Eunhae Joe[1], Joonsung Lee[2], Hansol Lee[1], Seungwook Yang[1], Young-suk Choi[3], Eunkyung Wang[3], Ho-Taek Song[3], Dong-Hyun Kim[1]
[1]School of Electrical and Electronic Engineering, Yonsei University, Seoul, Korea; [2]Severance Biomedical Science Institute, Yonsei University, Seoul, Korea; [3]Department of Radiology, Yonsei University College of Medicine, Seoul, Korea

Computer 7 **4597. Hyperpolarized 1-13C Pyruvate Metabolism as Marker of Inflammation and Progression of Lung Injury**
Hoora Shaghaghi[1], Yi Xin[1], Sarmad Siddiqui[1], Stephen Kadlecek[1], Mehrdad Pourfathi[1], Maurizio Cereda[2], Harrilla Profka[1], Hooman Hamedani[1], Rahim R. Rizi[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Anesthesiology and Critical Care, University of Pennsylvania, Philadelphia, PA, United States

Computer 8 **4598. Voxel-By-Voxel Signal Correlations Between Carbon-13 Metabolic and Perfusion Agents in a Rat Breast Cancer Xenograft Model by Co-Polarization of Pyruvic Acid and HP001**
Justin Y.C. Lau[1, 2], Albert P. Chen[3], Yiping Gu[2], William Dominguez-Viqueira[2], Charles H. Cunningham[1, 2]
[1]Dept. of Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [2]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada; [3]GE Healthcare, Toronto, Ontario, Canada

Computer 9 **4599. Development of High Resolution 3D Hyperpolarized ^{13}C Imaging Techniques**
Eugene Milshteyn[1], Cornelius von Morze[1], Galen D. Reed[2], Hong Shang[1], Peter J. Shin[1], Zihan Zhu[1], John Kurhanewicz[1], Robert Bok[1], Daniel B. Vigneron[1]
[1]Radiology and Biomedical Imaging, UCSF, San Francisco, CA, United States; [2]HeartVista, Menlo Park, CA, United States

Computer 10 **4600. Hyperpolarized 1-13C Pyruvate Metabolism of Inflamed Lung Via Pulmonary Delivery: A Preliminary Study**
Hoora Shaghaghi[1], Stephen Kadlecek[1], Mehrdad Pourfathi[1], Sarmad Siddiqui[1], Harrilla Profka[1], Hooman Hamedani[1], Maurizio Cereda[2], Yi Xin[1], Rahim R. Rizi[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Anesthesiology and Critical Care, University of Pennsylvania, Philadelphia, PA, United States

Computer 11 **4601. ParaHydrogen Induced Polarization Via Side Arm Hydrogenation (PHIP-SAH) Allows Hyperpolarization of Acetate and [1-13C] Pyruvate**
Francesca Reineri[1], Tommaso Boi[2], Silvio Aime[3]
[1]Molecular Biotechnology and Health Sciences, University of Torino, Torino, Italy; [2]Bracco Imaging Spa, Italy; [3]Molecular Biotechnology and Health Sciences, Universitty of Torino, Torino, Italy

Computer 12 **4602. Observing Gluconeogenesis in Real-Time in the Zucker Rat Using Hyperpolarized [2-^{13}C]Dihydroxyacetone**
Karlos Moreno[1], Jian-Xiong Wang[2], Leila Fidelino[3], A. Dean Sherry[3], Craig Malloy[3], Matthew E. Merritt[2]
[1]UT Southwestern Medical Center, Dallas, TX, United States; [2]AIRC, UT Southwestern Medical Center, Dallas, TX, United States; [3]AIRC, UT Southwestern Medical Center, TX, United States

Computer 13 **4603. Strategies to Simplify and Generalize Hyperpolarization of Heteronuclei Invoking the Cost-Efficient SABRE Method**
Thomas Theis[1], Milton Truong[2], Eduard Chekmenev[3], Warren Warren[4]
[1]Chemistry, Duke University, Durham, NC, United States; [2]Radiology, Vanderbilt University, Nashville, TN, United States; [3]Radiology and BME, Vanderbilt University, Nashville, TN, United States; [4]Chemistry, Physics, Radiology and BME, Duke University, Durham, NC, United States

Computer 14 **4604. Hyperpolarized [U-2H, U-13C]glucose Reports on Glycolytic and Pentose Phosphate Pathway Activity in EL4 Tumors and Glycolytic Activity in Yeast Cells.**
Kerstin N. Timm[1, 2], Johannes Hartl[1], Markus Keller[1], De-En Hu[1, 2], Alan J. Wright[2], Mikko I. Kettunen[1, 2], Tiago B. Rodrigues[2], Susana Ros[2], Markus Ralser[1, 3], Kevin M. Brindle[1, 2]
[1]Department of Biochemistry, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom; [2]CRUK Cambridge Institute, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom; [3]MRC National Institute for Medical Research, London, United Kingdom

Computer 15 **4605. Ramp-Sampled, Symmetric EPI for Rapid Dynamic Metabolic Imaging of Hyperpolarized ^{13}C Substrates on a Clinical MRI Scanner**
Jeremy W. Gordon[1], Sonam Machingal[1], John Kurhanewicz[1], Daniel Vigneron[1], Peder Larson[1]
[1]Radiology & Biomedical Imaging, UCSF, San Francisco, CA, United States

Computer 16 **4606. Gadoxetate-Attenuated Hyperpolarized ^{13}C MRI for Selective Assessment of Liver Metabolism**
Michael Abram Ohliger[1], Cornelius von Morze[1], Jeremy Gordon[1], Robert Bok[1], Jane Z. Wang[1], Peter Shin[1], John Kurhanewicz[1], Daniel Vigneron[1]
[1]Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States

Computer 17 **4607. A Novel Bloch-McConnell Simulator for Perfused Hyperpolarized Substrates**
Christopher M. Walker[1], James Bankson[1]
[1]Department of Imaging Physics, UT MD Anderson Cancer Center, Houston, TX, United States

Computer 18 **4608. Characterization of Glycolytic Activity and Perfusion in a Renal Cell Carcinoma Model During Sunitinib Treatment and Resistance with Hyperpolarized ^{13}C MRI**
Leo L. Tsai[1], Xiaoen Wang[1], Gopal Varma[1], David Alsop[1], Aaron K. Grant[1]
[1]Department of Radiology, Beth Israel Deaconess Medical Center, Boston, MA, United States

Computer 19 **4609. On the Utility of Propionate as a Probe of Myocardial Energy Metabolism Using Hyperpolarization – Effects on Anaplerotic Flux and Substrate Preference**
Mukundan Ragavan[1], Xiaorong Fu[1], Shawn C. Burgess[1], Matthew E. Merritt[1]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States

Computer 20 **4610. Assessing Tumor Microenvironment in Rat Glioma Model Using Hyperpolarized 13C MRSI with a Sliding Window**
Jae Mo Park[1], Ralph E. Hurd[2], Dirk Mayer[3], Lawrence D. Recht[4], Daniel M. Spielman[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Applied Sciences Laboratory, GE Healthcare, Menlo Park, CA, United States; [3]Diagnostic Radiology & Nuclear Medicine, University of Maryland, Baltimore, Baltimore, MD, United States; [4]Neurology and Neurological Sciences, Stanford University, Stanford, CA, United States

Computer 21 **4611. Quantification of TAE-Induced Alterations in Tumor Metabolism Using Hyperpolarized ^{13}C-MRSI**
Mehrdad Pourfathi[1], Terence Gade[1], Stephen Hunt[1], Stephen Pickup[1], Anthony Mancuso[1], Stephen Kadlecek[1], Neil Harrison[1], Gregory Nadolski[1], Rahim R. Rizi[1], Mitchell Schnall[1], Michael Soulen[1], Simon Celeste[2]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Cell and Developmental Biology, University of Pennsylvania, PA, United States

Computer 22 **4612. SNR Comparison of EPI and Spiral 3D Time Resolved Imaging of Hyperpolarized [1-^{13}C]Pyruvate and [1-^{13}C]Lactate**
Benjamin J. Geraghty[1, 2], Justin Y.C. Lau[1, 2], Albert P. Chen[3], William Dominguez-Viqueira[1], Charles H. Cunningham[1, 2]
[1]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada; [2]Dept. of Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [3]GE Healthcare, Toronto, Ontario, Canada

Electronic Poster
MRS-Animal Models & Non-Proton MRI

Exhibition Hall Thursday 13:30-14:30

Computer 25 **4613. Gender Differences in the Effect of Acute Nicotine Administration in Rat Brain by MRS.**
Tetyana Konak[1], Jaivijay Ramu[1], Serguei Liachenko[1]
[1]Neurotoxicology, NCTR / FDA, Jefferson, AR, United States

Computer 26 **4614. Brain Energy Metabolism Measured by ^{13}C MRS *In Vivo* Upon Infusion of [3-^{13}C]lactate**
Joao M.N. Duarte[1], Freya-Merret Girault[1], Rolf Gruetter[1, 2]
[1]LIFMET, EPFL, Lausanne, Vaud, Switzerland; [2]Radiology, UNIL and UNIGE, Lausanne and Geneva, Vaud & Geneva, Switzerland

Computer 27 **4615. *$CMRO_2$* Quantification by Direct ^{17}O MRI at 7 T in the Macaque Brain: Assessment of Energy Metabolism Impairment *In Vivo***
Chloe Najac[1, 2], Brice Tiret[1, 2], Julien Flament[1, 3], Martine Guillermier[1, 2], Diane Houitte[1, 2], Romina Aron Badin[1, 2], Philippe Hantraye[1, 2], Emmanuel Brouillet[1, 2], Vincent Lebon[1, 2], Julien Valette[1, 2]

[1]CEA-MIRCen, Fontenay-aux-Roses, France; [2]CEA-CNRS URA 2210, Fontenay-aux-Roses, France; [3]Inserm US27, CRC-MIRCen, Fontenay-aux-Roses, France

Computer 28 **4616. Activity of Pentose Phosphate Pathway and Pyruvate Dehydrogenase Is Decreased in MPTP Model of Parkinson's Disease: A ^{13}C NMR Study**

Puneet Bagga[1], Komal Kumari Mandal[1], Anant Bahadur Patel[1]
[1]NMR Microimaging and Spectroscopy, Centre for Cellular and Molecular Biology, Hyderabad, Andhra Pradesh, India

Computer 29 **4617. Comparative ^{1}H-MRS Study of IDH1 and IDH2 Mutated Gliomas in Rodent Brain at 9.4T**

Hyeong Hun Lee[1, 2], Sungjin Kim, [12], Hye Rim Cho, [12], Hwon Heo[1, 2], Seung Hong Choi, [12], Hyeonjin Kim[1, 2]
[1]Biomedical Sciences, Seoul National University, Seoul, Korea; [2]Radiology, Seoul National University Hospital, Seoul, Korea

Computer 30 **4618. *In-Vivo* 13C MRS Detects an Increase in Lactate Production Associated with PDH Down-Regulation in Genetically Engineered Mutant IDH1 Glioma Tumors**

Jose Luis Izquierdo Garcia[1], Marina Radoul[1], Myriam M. Chaumeil[1], Pia Eriksson[1], Pavithra Luis Viswanath[1], Sabrina M. Ronen[1]
[1]University California San Francisco, San Francisco, CA, United States

Computer 31 **4619. Determination of Fatty Acid Profile of Intact Fish by Intermolecular Double-Quantum Coherence ^{1}H-NMR Spectroscopy**

Honghao Cai[1], Liangjie Lin[1], Xiaohong Cui[1], Zhong Chen[1]
[1]Electronic Science Department, Xiamen University, Xiamen, Fujian, China

Computer 32 **4620. Hippocampal Dependent Cognitive Dysfunction and Microstructural Changes During Early Delayed Phase After Whole Body Radiation Exposure**

Mamta Aryabhushan Gupta[1], Poonam Rana[1], Richa Trivedi[1], Seenu Haridas[2], Kailash Manda[2], B S Hemanth Kumar[1], Subash Khushu[1]
[1]NMR Research Centre, INMAS,DRDO, Delhi, India; [2]Division of Radiation Biosciences, INMAS,DRDO, Delhi, India

Computer 33 **4621. Early Hepatic Lipid Changes in Fatty Liver Rat Model by *In Vivo* Short-TE 1H-MRS at 3T**

Hyeon-Man Baek[1, 2], Jooyun Kim[1], Youngjae Jeon[1], Mirim Bang[1]
[1]Center for MR Research, Korea Basic Science Institute, Ochang, Chungbuk, Korea; [2]Department of Bio-Analitical Science, University of Science & Technology, Daejeon, Chungnam, Korea

Computer 34 **4622. Regional Cerebral Metabolic Activity in Genetic Mouse Model of Parkinson's Disease: An NMR Investigation for Biomarkers**

Puneet Bagga[1], Anup N. Chugani[1], Mavuri Suresh Kumar[1], Anant Bahadur Patel[1]
[1]NMR Microimaging and Spectroscopy, Centre for Cellular and Molecular Biology, Hyderabad, Andhra Pradesh, India

Computer 35 **4623. Liver Metabolites in Rat Model of Non-Alcoholic Fatty Liver Disease: Quantification of Choline-Containing Compounds and Lipid Content by Using *In Vivo* Proton Magnetic Resonance Spectroscopy**

Kyu-Ho Song[1], Hyeon-Man Baek[2], Do-Wan Lee[1], Bo-Young Choe[1]
[1]Department of Biomedical Engineering, and Research Institute of Biomedical Engineering, College of Medicine, The Catholic University of Korea, Seoul, Korea; [2]Center for Magnetic Resonance Research, Korea Basic Science Institute, Chungbuk, Korea

Computer 36 **4624. Investigation of Early Biochemical Changes in Liver Fibrosis Using an Experimental Mouse Model**

Jadegoud Yaligar[1], Swee Shean Lee[1], Elma Faylon Ilanto[2], Sanjay K. Verma[1], Kanaga Sabapathy[2], S Sendhil Velan[1]
[1]Laboratory of Molecular Imaging, Singapore Bioimaging Consortium, Singapore, Singapore; [2]Laboratory of Molecular Carcinogenesis, National Cancer Center, Singapore, Singapore

Computer 37 **4625. Argon Augments Hypothermic Neuroprotection in a Perinatal Asphyxia Piglet Model: Evaluation by 31P and 1H MRS**

David Price[1], Alan Bainbridge[1], Kevin Broad[2], Go Kawano[2], Igor Fierens[2], Mojgan Ezzati[2], Magdalena Sokolska[3], Aaron Oliver-Taylor[2], Jamshid Rostami[2], Robert Sanders[4], Ernest Cady[1], Xavier Golay[5], Nicola Robertson[2]

[1]Dept Medical Physics & Bioengineering, UCLH NHS Foundation Trust, London, United Kingdom; [2]Institute for Womens Health, University College London, London, United Kingdom; [3]Dept. Medical Physics and Bioengineering, University College London, London, United Kingdom; [4]Department of Anaesthesia & Surgical Outcomes Research Centre, University College London, London, United Kingdom; [5]Institute of Neurology, University College London, London, United Kingdom

Computer 38 **4626.** **^{1}H-[^{13}C]-NMR Study of Brain Energy Metabolism in $AlCl_3$ Model of Alzheimer's Disease: Improvement of Energy Metabolism with Rasa-Sindoor Intervention**

ISMRM MERIT AWARD magna cum laude

Kamal Saba[1], Niharika Rajnala[1], Subhash Chandra Lakhotia[2], Anant Bahadur Patel[1]
[1]Centre for Cellular and Molecular Biology, Hyderabad, India; [2]Department of Zoology, Banaras Hindu University, Varanasi, India

Computer 39 **4627.** **Local Glial Energy Metabolism Supports Glutamatergic Neurotransmission During Increased Focal Cortical Activity: A ^{13}C MRS Study in the Rat Cortex *In Vivo***

Sarah Sonnay[1], Nathalie Just[2], Rolf Gruetter[3, 4], João M.N. Duarte[1]
[1]Laboratory of Functional and Metabolic Imaging (LIFMET), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; [2]Center for Biomedical Imaging (CIBM), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; [3]Center for Biomedical Imaging (CIBM) and Laboratory of Functional and Metabolic Imaging (LIFMET), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; [4]Department of Radiology, University of Geneva and Lausanne, Switzerland

Computer 40 **4628.** **Simultaneous B_1 Mapping and Tissue Sodium Content Quantification by MRI at 3 Tesla**

Jonathan Lommen[1, 2], Simon Konstandin, [13], Lothar R. Schad[4]
[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany; [2]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany; [3]MR-Imaging and Spectroscopy, Faculty 01 (Physics/Electrical Engineering), University of Bremen, Bremen, Germany; [4]Computer Assisted Clinical Medicine,, Heidelberg University, Mannheim, Germany

Computer 41 **4629.** **Combined Sodium NODDI: Towards Quantitative *In Vivo* Intracellular and Intraneurite Sodium Measures at 3T**

Bhavana S. Solanky[1], Patricia Alves Da Mota[1], Ferran Prados[2], Torben Schneider[1], Frank Riemer[1], Wallace Brownlee[1], Francesco Grussu[1], Manuel Jorge Cardoso[2], Sebastian Ourselin[2], Hui Zhang[3], David H. Miller[1], Xavier Golay[4], Claudia A M Wheeler-Kingshott[1]
[1]NMR Research Unit, Department of Neuroinflammation, Queen Square MS Centre, UCL, Institute of Neurology, London, England, United Kingdom; [2]Translational Imaging Group, CMIC, Department of Medical Physics & Biomedical Engineering, UCL, London, England, United Kingdom; [3]CMIC, Department of Computer Science, UCL, London, England, United Kingdom; [4]Brain Repair & Rehabilitation, Institute of Neurology, UCL, London, England, United Kingdom

Computer 42 **4630.** **Bilateral *In Vivo* Mapping of Sodium Relaxation Times in Breasts at 7T**

Stefan Zbyn[1], Vladimir Juras[1], Nadia Benkhedah[2], Olgica Zaric[1], Vladimir Mlynarik[1], Pavol Szomolanyi[1], Wolfgang Bogner[1], Armin M. Nagel[2], Siegfried Trattnig[1]
[1]High Field MR Center, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria; [2]Department of Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

Computer 43 **4631.** ***In Vivo* Triple Quantum Filtered Potassium (^{39}K) MR Imaging of Human Thigh Muscle**

Manuela B. Rösler[1], Nadia Benkhedah[1], Armin M. Nagel[1], Peter Bachert[1], Reiner Umathum[1]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

Computer 44 **4632.** **Triple-Quantum-Filtered Sodium Imaging at 9.4 Tesla**

Christian Mirkes[1, 2], G. Shajan[1], Jonas Bause[1], Kai Buckenmaier[1], Jens Hoffmann[1], Klaus Scheffler[1, 2]
[1]High-Field MR Center, Max Planck Institute for Biological Cybernetics, Tuebingen, BW, Germany; [2]Department for Biomedical Magnetic Resonance, University of Tübingen, BW, Germany

Computer 45 **4633.** **Dynamic ^{17}O-MRI at 3 Tesla for *In Vivo* $CMRO_2$ Quantification**

Robert Borowiak[1, 2], Dmitry Kurzhunov[2], Philipp Wagner[2], Marco Reisert[2], Michael Bock[2]
[1]German Cancer Consortium (DKTK), German Cancer Research Center (DKFZ), Heidelberg, Germany; [2]Dept. of Radiology · Medical Physics, University Medical Center Freiburg, Freiburg, Baden-Württemberg, Germany

Computer 46 **4634. Quantitative Sodium Breast MRI: A Pilot Study for Estimating (Pseudo) Intracellular Sodium Concentration and (Pseudo) Extracellular Volume Fraction *In Vivo***
Guillaume Madelin[1], Ryan Brown[1], Linda Moy[1]
[1]Department of Radiology, New York University Langone Medical Center, New York, NY, United States

Computer 47 **4635. Quadruple Interleaved ^{23}Na and ^{1}H Acquisition at 7T**
Paul W. de Bruin[1], Maarten J. Versluis[2], Peter Koken[3], Sebastian A. Aussenhofer[1], Wouter den Hollander[4], Ingrid Meulenbelt[4], Peter Börnert, [13], Andrew G. Webb[1]
[1]Radiology, Leiden University Medical Center, Leiden, Netherlands; [2]Philips Healthcare, Eindhoven, Netherlands; [3]Philips Research Hamburg, Germany; [4]Medical Statistics and Bioinformatics, Molecular Epidemiology, Leiden University Medical Center, Netherlands

Computer 48 **4636. Development of Theranostics Imaging Probe for MRI and EPR Imaging**
Miho EMOTO[1], Shingo Sato[2], Hirotada G. Fujii[1]
[1]Center for Medical Education, Sapporo Medical University, Sapporo, Hokkaido, Japan; [2]Graduate school of Science and Engineering, Yamagata University, Yamagata, Japan

Electronic Poster
Human Brain MRS

Exhibition Hall Thursday 13:30-14:30

Computer 49 **4637. Interregional Associations Between Excitatory and Inhibitory Neurotransmitters in the Resting Human Brain**
Marianne Cleve[1], Alexander Gussew[1], Lisa Janetzki[2], Constanze Borys[2], Jürgen R. Reichenbach[1]
[1]Medical Physics Group, Institute of Diagnostic and Interventional Radiology, Jena University Hospital - Friedrich Schiller University Jena, Jena, Germany; [2]Institute of Psychosocial Medicine and Psychotherapy, Jena University Hospital, Jena, Germany

Computer 50 **4638. fMRS of Visual Cortex at 3T with Periodic Averaging of a Block Design Paradigm**
Miguel Martínez-Maestro[1], Maria Guidi[1], Laurentius Huber[1], Štefan Holiga[1], Jöran Lepsien[1], Henrik Marschner[1], Harald E. Möller[1], Christian Labadie[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

Computer 51 **4639. Examination of the GABA-BOLD Relationship in Multiple Brain Regions**
Ashley D. Harris[1, 2], Nicolaas AJ Puts[1, 2], Brian A. Anderson[3], Steven Yantis[3], James J. Pekar[1, 2], Peter B. Barker[1, 2], Richard A. E. Edden[1, 2]
[1]The Russell H Morgan Department of Radiology and Radiological Sciences, The John Hopkins School of Medicine, Baltimore, MD, United States; [2]F.M. Kirby Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States; [3]Department of Psychological and Brain Sciences, The Johns Hopkins University, Baltimore, MD, United States

Computer 52 **4640. Metabolite Concentrations in the Basal Ganglia of Depressed Patients with High Inflammation**
Candace C. Fleischer[1, 2], Xiaoping Hu[1, 2], Andrew H. Miller[3, 4], Ebrahim Haroon[3, 4]
[1]Biomedical Imaging Technology Center, Emory University, Atlanta, GA, United States; [2]Biomedical Engineering, Emory University, Atlanta, GA, United States; [3]Psychiatry and Behavioral Sciences, School of Medicine, Emory University, Atlanta, GA, United States; [4]Winship Cancer Institute, Atlanta, GA, United States

Computer 53 **4641. Decreased Auditory GABA+ Concentrations in Presbycusis Demonstrated by Edited Magnetic Resonance Spectroscopy**
Fei Gao[1], Bin Zhao[1], Guangbin Wang[1], Wen Ma[2], Muwei Li[3], Fuxin Ren[1], Bo Liu[1], Weibo Chen[4], Richard A.E. Edden[5, 6]
[1]Shandong Medical Imaging Research Institute, Shandong University, Jinan, China; [2]The Central Hospital of Jinan City, Shandong University, Jinan, China; [3]College of Electronics and Information Engineering, Sichuan University, Chengdu, China; [4]Philips Healthcare, Shanghai, China; [5]Russell H. Morgan Department of Radiology and Radiological Science, The Johns Hopkins University School of Medicine, MD, United States; [6]FM Kirby Center for Functional Brain Imaging, Kennedy Krieger Institute, MD, United States

Computer 54 **4642. Brain Phenylalanine Levels in Phenylketonuria Using 2D Correlated Spectroscopy**
Alexander Peter Lin[1], Sai Krishna Merugumala[1, 2], Vera Anastosie[3], Stephanie Couchell[3], Xi April Long[1], Huijun Vicky Liao[1], Susan Waisbren[3]

[1]Center for Clinical Spectroscopy, Brigham and Women's Hospital, Boston, MA, United States; [2]Texas Tech University Health Sciences Center, Lubbock, TX, United States; [3]Metabolism Research, Boston Children’s Hospital, Boston, MA, United States

Computer 55 **4643.** **Neurometabolite Alterations in Hippocampus in Hypothyroid Patients: An *In-Vivo* 1H MRS Study**

Subash Khushu[1], Sadhana Singh[1], Poonam Rana[1], Pawan Kumar[1], L Ravi Shankar[2]
[1]NMR Research Centre, INMAS, DRDO, Delhi, India; [2]Thyroid Research Centre, INMAS, DRDO, Delhi, India

Computer 56 **4644.** **Investigation of Brain GABA Levels in Hypothyroidism Patients by MEGA-Editing Proton MR Spectroscopy**

Bo Liu[1], Bin Zhao[1], Guangbin Wang[1], Fei Gao[1], Zhensong Wang[1], Weibo Chen[2]
[1]Shandong Medical Imaging Research Institute, Shandong University, Jinan, Shandong, China; [2]Philips Healthcare, Shanghai, China

Computer 57 **4645.** **The Relationship Between 1H MRS and Brain Morphology at the Corresponding Locations in Methamphetamine Users**

Nuttawadee Intachai[1], Artit Rodkong[1], Suwit Saekho[1, 2], Napapon Sailasuta[3], Apinun Aramrattanan[4], Kanok Uttawichai[5], Mekkla Thomson[6], Bangorn Sirirojn[7], Daralak Thavornprasit[7], Sineenart Taejaroenkul[7], Kamolrawee Sintupat[7], Victor Valcour[8], Robert Paul[9]
[1]Department of Radiological Technology, Faculty of Associated Medical Sciences, Chiang Mai University, Chiang Mai, Thailand; [2]Biomedical Engineering Center, Faculty of Engineering, Chiang Mai University, Chiang Mai, Thailand; [3]Huntington Medical Research Institute, CA, United States; [4]Department of Family Medicine, Faculty of medicine, Chiang Mai University, Chiang Mai, Thailand; [5]Thanyarak Hospital, Chaing Mai, Thailand; [6]Westat, MD, United States; [7]Research Institute for Health Sciences, Chiang Mai University, Chiang Mai, Thailand; [8]Department of Neurology, University of California, San Francisco, CA, United States; [9]Department of Psychology, Behavioral Neuroscience, University of Missouri-St.Louis, St. Louis, United States

Computer 58 **4646.** **7T Brain MRS in HIV Infection: Effects of Serostatus and Cognitive Impairment**

Mona A. Mohamed[1], Peter B. Barker[1], Richard L. Skolasky[2], Heidi Vornbrock Roosa[3], Ned Sacktor[3]
[1]Radiology, Johns Hopkins Medical Institutions, Baltimore, MD, United States; [2]Orthopedic Surgery, Johns Hopkins Medical Institutions, MD, United States; [3]Neurology, Johns Hopkins Medical Institutions, MD, United States

Computer 59 **4647.** **Diffusion Weighted Magnetic Resonance Spectroscopy in Different Stages of MELAS Patient**

Dandan Zheng[1], Bing Wu[1], Huimao Zhang[2], Jue Zhang[3], Zhenyu Zhou[1]
[1]GE Healthcare China, Beijing, China; [2]Radiology Department, The First Hospital of Jilin University, Changchun, Jilin, China; [3]Peking University, Beijing, China

Computer 60 **4648.** **Elevated Glutamate Concentrations in the Visual Cortex of Migraine Without Aura Detected at 7 Tesla.**

Jannie P. Wijnen[1, 2], Ronald Zielman[3], Gerrit L.J. Onderwater[3], Andrew Webb[2], Gisela M. Terwindt[3], Michel Ferrari[3], Hermien E. Kan[2], Mark C. Kruit[2]
[1]University Medical Centre Utrecht, Utrecht, Netherlands; [2]Radiology, Leiden University Medical Centre, Leiden, Zuid Holland, Netherlands; [3]Neurology, Leiden University Medical Centre, Leiden, Zuid Holland, Netherlands

Computer 61 **4649.** **Investigating Metabolic and Functional Profiles of Mild and Moderate Cervical Spondylotic Myelopathy: A MRS and fMRI Study**

Izabela Aleksanderek[1, 2], Todd K. Stevens[2], Sandy Goncalves[1, 2], Robert Bartha[1, 2], Neil Duggal[1, 3]
[1]Medical Biophysics, Western University, London, Ontario, Canada; [2]Robarts Research Institute, London, Ontario, Canada; [3]University Hospital, LHSC, London, Ontario, Canada

Computer 62 **4650.** **Increased GABA Levels in Manganese Neurotoxicity: Biochemical Effect or Mn-Induced Change of GABA T1 Relaxation Time?**

Ruoyun Ma[1, 2], Anne Lotz[3], Ulrike Dydak[1, 2]
[1]School of Health Sciences, Purdue University, West Lafayette, IN, United States; [2]Department of Radiology and Imaging Sciences, Indiana University School of Medicine, Indianapolis, IN, United States; [3]Center of Epidemiology, Institute for Prevention and Occupational Medicine of the DGUV, Institute of the Ruhr-Universitӓt Bochum, Bochum, Germany

Computer 63 **4651.** **Evidence of Altered High-Energy Phosphate and Membrane Phospholipid Metabolism in Pelizaeus-Merzbacher Patients with PLP1 Duplications Using ^{31}P Magnetic Resonance Spectroscopy**

ISMRM MERIT AWARD magna cum laude

Anirudha S. Rathnam[1], Jasloveleen Sohi[2], Dalal Khatib[3], Jeremy J. Laukka[4], John Kamholz[2, 5], Jeffrey Stanley[3]

[1]Wayne State University School of Medicine, Detroit, MI, United States; [2]Center for Molecular Medicine and Genetics, Wayne State University School of Medicine, MI, United States; [3]Department of Psychiatry and Behavioral Neurosciences, Wayne State University School of Medicine, MI, United States; [4]Neurosciences, The University of Toledo, OH, United States; [5]Psychiatry, University of Iowa Carver College of Medicine, MI, United States

Computer 64 **4652. Quantitative Characterization of Tumor Microstructural Variations in Response to Chemotherapy Using Temporal Diffusion Spectroscopy**
Xiaoyu Jiang[1], Hua Li[1], Ping Zhao[1], Jingping Xie[1], Stephanie L. Barnes[1], Thomas Yankeelov[1], Junzhong Xu[1], John C. Gore[1]
[1]Institute of Imaging Science, vanderbilt university, nashville, TN, United States

Computer 65 **4653. Localized ^{1}H-MRS of Brain Phenylalanine in Adults with Phenylketonuria**
ISMRM MERIT AWARD magna cum laude
A. J. Bakermans[1], A. J. Nederveen[1], C. E. M. Hollak[2], J. Booij[3], A. M. Bosch[4], L. J. Bour[5], S. C. J. Huijbregts[6], R. Jahja[7], F. J. van Spronsen[7], D. H. Nieman[8], N. G. G. M. Abeling[9], E. Boot[3]
[1]Department of Radiology, Academic Medical Center, Amsterdam, Netherlands; [2]Department of Internal Medicine, Academic Medical Center, Amsterdam, Netherlands; [3]Department of Nuclear Medicine, Academic Medical Center, Amsterdam, Netherlands; [4]Department of Pediatrics, Academic Medical Center, Amsterdam, Netherlands; [5]Department of Neurology, Academic Medical Center, Amsterdam, Netherlands; [6]Department of Clinical Child and Adolescent Studies, Leiden University, Leiden, Netherlands; [7]Department of Metabolic Diseases, University Medical Center Groningen, Groningen, Netherlands; [8]Department of Psychiatry, Academic Medical Center, Amsterdam, Netherlands; [9]Laboratory Genetic Metabolic Diseases, Academic Medical Center, Amsterdam, Netherlands

Computer 66 **4654. Ketone Bodies and Glucose in Human Brain During Ketogenic Diet and Fasting**
Florian Schubert[1], Ralf Mekle[1], Bernd Ittermann[1], Markus Bock[2]
[1]Physikalisch-Technische Bundesanstalt, Berlin, Germany; [2]ECRC, Charité Universitätsmedizin, Berlin, Germany

Computer 67 **4655. Comparison of Healthy Young and Elderly: A Study Using Automated Whole-Brain *N*-Acetylaspartate Quantification**
William E. Wu[1], Marc Sollberger[2], Lidia Glodzik[3], Andreas U. Monsch[2], Achim Gass[4], Oded Gonen[1]
[1]Radiology, New York University School of Medicine, New York, NY, United States; [2]Neurology and Neuroradiology, University Hospital Basel, Basel, Switzerland; [3]Psychiatry, New York University School of Medicine, New York, NY, United States; [4]Neurology, University of Heidelberg, Mannheim, Germany

Computer 68 **4656. Reproducibility and Effect of Voxel Compartments on Cerebellar GABA MRS in an Elderly Population**
Zaiyang Long[1], Jonathan P. Dyke[2], Ruoyun Ma[3, 4], Chaorui C. Huang[5], Elan D. Louis[6, 7], Ulrike Dydak[3, 4]
[1]Department of Radiology, Mayo Clinic, Rochester, MN, United States; [2]Department of Radiology, Weill Cornell Medical College, New York, NY, United States; [3]School of Health Sciences, Purdue University, West Lafayette, IN, United States; [4]Department of Radiology and Imaging Sciences, Indiana University School of Medicine, Indianapolis, IN, United States; [5]Brain and Mind Research Institute, Weill Medical College of Cornell University, New York, NY, United States; [6]College of Physicians and Surgeons, Columbia University, New York, NY, United States; [7]Mailman School of Public Health, Columbia University, New York, NY, United States

Computer 69 **4657. Correlation of MRS Water Proton Resonance Frequency with ADC in Childhood Brain Tumours**
Ben Babourina-Brooks[1, 2], Theodoros N. Arvanitis, [23], Andrew C. Peet[1, 2], Nigel P. Davies, [14]
[1]School of Cancer Sciences, University of Birmingham, Birmingham, West Midlands, United Kingdom; [2]Birmingham Children's Hospital NHS Foundation Trust, Birmingham, West Midlands, United Kingdom; [3]3Institute of Digital Healthcare, WMG,, University of Warwick, Coventry, West Midlands, United Kingdom; [4]Imaging & Medical Physics,, University Hospitals Birmingham NHS Foundation Trust, West Midlands, United Kingdom

Computer 70 **4658. Altered Macromolecular Pattern in Aging Brain**
Malgorzata Marjanska[1], J. Riley McCarten[2], Laura S. Hemmy[2], Melissa Terpstra[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States; [2]Minneapolis VA Medical Center, Geriatric Research and Clinical Center, MN, United States

Computer 71 **4659. Reproducibility of Glutamate, GABA and Glycine in Human Brain, as Measured by Optimized ^{1}H MRS at 7T**
Zhongxu An[1], Sandeep Ganji[1], Changho Choi[1]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States

Computer 72 **4660. Towards Translation of Advanced MRS Methodology to Clinical Setting**
Dinesh K. Deelchand[1], Kejal Kantarci[2], Lynn E. Eberly[3], Gulin Oz[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States; [2]Department of Radiology, Mayo Clinic, Rochester, MN, United States; [3]Division of Biostatistics, University of Minnesota, Minneapolis, MN, United States

Electronic Poster
Molecular Imaging

Exhibition Hall Thursday 14:30-15:30

Computer 1 **4661. Biodistribution of Lanthanide-Based MRI Contrast Agents Assessed by BIRDS**
Yuegao Huang[1], Peter Herman[1], Daniel Coman[1], Samuel Maritim[2], Fahmeed Hyder[1, 2]
[1]Diagnostic Radiology, Yale University, New Haven, CT, United States; [2]Biomedical Engineering, Yale University, New Haven, CT, United States

Computer 2 **4662. Fe2O3/AgI Core/Shell Nanoparticles for Dual Modal Computed Tomography and Magnetic Resonance Imaging Applications.**
Anamaria Orza[1], Xiangyang Tang[2], Yi Yang[1], Hui We[2], Run Lin[1], Liya Wang[1], Hui Mao[2]
[1]Radiology and Imaging Sciences, Emory University, Atlanta, GA, United States; [2]Radiology and Imaging Sciences, Emory University , Atlanta, GA, United States

Computer 3 **4663. Fast Relaxing Contrast Agent for Fluorine MRI**
Vít Herynek[1], Andrea Gálisová[1], Jan Blahut[2], Jan Kotek[2], Milan Hájek[1]
[1]Institute for Clinical and Experimental Medicine, Prague, Czech Republic; [2]Faculty of Science, Charles University, Prague, Czech Republic

Computer 4 **4664. Physical Principles of Transient T1-Lengthening by Hemodilution: Applications to Perfusion MRI with Normal Saline Injections (NSI)**
Hernan Jara[1], Osamu Sakai[1], Asim Z. Mian[1], Stephan Anderson[1], Jorge A. Soto[1], Alexander M. Norbash[1]
[1]Boston University, Boston, MA, United States

Computer 5 **4665. Dual Functional Graphene Quantum Dots for Targeted Multimodal Imaging and Therapy**
Shizhen Chen[1], Yuqi Yang[1], Qing Luo[1], Xin Zhou[1]
[1]National Center for Magnetic Resonance in Wuhan, Wuhan Institute of Physics and Mathematics, Wuhan, Hubei, China

Computer 6 **4666. A Novel CEST-MRI Ratiometric Approach for *In Vivo* PH Imaging**
Dario Livio Longo[1], Phillip Zhe Sun[2], Lorena Consolino[3, 4], Filippo Michelotti[5], Fulvio Uggeri[6], Silvio Aime[3, 4]
[1]Institute of Biostructure and Bioimaging, CNR , Torino, Italy; [2]MGH and Harvard Medical School, Athinoula A. Martinos Center for Biomedical Imaging, Cherlestown, MA, United States; [3]Department of Molecular Biotechnology and Health Sciences, University of Torino, Torino, Italy; [4]Molecular Imaging Center, University of Torino, Torino, Italy; [5]Department of Preclinical Imaging and Radiopharmacy, University of Tubingen, Tubingen, Germany; [6]Bracco Imaging SpA, Milano, Italy

Computer 7 **4667. Imaging Developing Neural Structures in Chick Embryo Using Novel Gd_2O_3 Contrast Agent**
Gary R. Stinnett[1], Nasim Taheri[2], Stacey M. Glasgow[3], Benjamin Deneen[4], Vicki L. Colvin[2], Robia G. Pautler[5]
[1]Baylor College of Medicine, Houston, TX, United States; [2]Chemistry, Rice University, Houston, TX, United States; [3]Ctr Stem& Regen, Baylor College of Medicine, Houston, TX, United States; [4]Neuroscience, Baylor College of Medicine, Houston, TX, United States; [5]Molecular Physiology and Biophysics, Baylor College of Medicine, Houston, TX, United States

Computer 8 **4668. Developing Hyperpolarized Silicon Micro and Nanoparticles for Targeted Molecular Imaging of Ovarian Cancer**
Nicholas Whiting[1], Jingzhe Hu[1, 2], Niki Zacharias Millward[1], Rajesha Rupaimoole[3], David Gorenstein[4], Anil Sood[3], Pratip Bhattacharya[1]
[1]Cancer Systems Imaging, The University of Texas MD Anderson Cancer Center, Houston, TX, United States; [2]Department of Bioengineering, Rice University, Houston, TX, United States; [3]Gynecologic Oncology and Reproductive Medicine, The University of Texas MD Anderson Cancer Center, Houston, TX, United States; [4]Nanomedicine and Biomedical Engineering, The University of Texas Health Science Center at Houston, Houston, TX, United States

Computer 9 **4669.** **Motexafin Gadolinium (MGd)-Enhanced Molecular MR and Optical Imaging of Rat Gliomas for Potential Intraoperative Determination of Tumor Margins**
Longhua Qiu[1, 2], Feng Zhang[1], Yaoping Shi[1], Zhibin Bai[1], Jianfeng Wang[1], Donghoon Lee[1], Xiaoyuan Feng[2], Xiaoming Yang[1]
[1]Image-Guided Biomolecular Intervention Research, Department of Radiology, University of Washington School of Medicine, Seattle, WA, United States; [2]Department of Radiology, Huashan Hospital, Fudan University, Shanghai, China

Computer 10 **4670.** **MRI of Liver Fibrosis with a Fibrin-Specific Probe**
Iliyana Atanasova[1], Lan Wei[2], Helen Day[3], Boris Keil[3], Francesco Blasi[3], Bryan C. Fuchs[2], Peter Caravan[3]
[1]Madrid-MIT MVision Consortium, MIT, Cambridge, MA, United States; [2]Division of Surgical Oncology, Massachusetts General Hospital, Boston, MA, United States; [3]A. A. Martinos Center for Biomedical Imagin, Massachusetts General Hospital, Charlestown, MA, United States

Computer 11 **4671.** **A Comparison of [11C]-(R)PK11195 Tracer Kinetics and MRI-Based Vascularity-Related Parameters in Gliomas**
Chao Li[1, 2], Zhangjie Su[1], Ka-Loh Li[1], Alex Gerhard[1], Gerard Thompson[1], Xiaoping Zhu[1], Rainer Hinz[1], Federico Roncaroli[3], Karl Herholz[1], Alan Jackson[1]
[1]Wolfson Molecular Imaging Centre, The University of Manchester, Manchester, United Kingdom; [2]Department of Neurosurgery, Shanghai First People's Hospital, Shanghai, China; [3] “John Fulcher” Neuro-Oncology Lab, Imperial College London, London, United Kingdom

Computer 12 **4672.** **Magnetic Brain Cell Stimulation Using an MRI Contrast Agent: Superparamagnetic Iron Oxide Nanoparticles (SPIONs)**
Yichao Yu[1], Chris Payne[1], Vitaliy Kasymov[2], Bernard Siow[1], Quentin Pankhurst[3], Alexander Gourine[2], Mark F. Lythgoe[1]
[1]Centre for Advanced Biomedical Imaging, University College London, London, United Kingdom; [2]Neuroscience, Physiology and Pharmacology, University College London, London, United Kingdom; [3]Institute of Biomedical Engineering, University College London, London, United Kingdom

Computer 13 **4673.** **MEMRI and Tumors: a Method for the Evaluation of the Contribution of Mn(II) Ions in the Intra- And Extra-Cellular Compartments**
Eliana Gianolio[1], Francesca Arena[1], Enza Di Gregorio[1], Roberto Pagliarin[2], Martina Delbianco[2], Gabriella Baio[3], Silvio Aime[1]
[1]Molecular Biotecnologies and Health Sciences, University of Torino, Torino, Italy, Italy; [2]Chemistry, University of Milano, MIlano, Italy, Italy; [3]Aberdeen Biomedical Imaging Centre, University of Aberdeen, Aberdeen, Scotland, United Kingdom

Computer 14 **4674.** **Manganese-Enhanced MRI (MEMRI) Enables Measurement of Regional Myocardial Viability and to Evaluate the Regenerative Effects by Human Induced Pluripotent Stem Cell Derived Cardiomyocytes (ICMs)**
Atsushi Tachibana[1], Morteza Mahmoudi[1], Yuka Matsuura[1], Rajesh Dash[1], Eric Rulifson[1], Phillip Yang[1]
[1]Cardiovascular Medicine, Stanford University School of Medicine, Stanford, CA, United States

Computer 15 **4675.** **Functional Imaging of Brown Fat in Mouse**
Hussein SROUR[1], Kai Hsiang CHUANG[1]
[1]Singapore BioImaging Consortium, Singapore, Singapore

Computer 16 **4676.** **Evaluation of PET/DWI Registration Quality in PET/MR Hybrid Scanner: Zoomed DWI Vs. Conventional DWI**
Koji Sagiyama[1], Yuji Watanabe[2], Ryotaro Kamei[1], Shingo Baba[1], Takuro Isoda[1], Osamu Togao[1], Michinobu Nagao[2], Satoshi Kawanami[2], Akihiro Nishie[1], Hiroshi Honda[1]
[1]Department of Clinical Radiology, Graduate School of Medical Sciences, Kyushu University, Higashi-ku, Fukuoka, Japan; [2]Department of Molecular Imaging and Diagnosis, Graduate School of Medical Sciences, Kyushu University, Higashi-ku, Fukuoka, Japan

Computer 17 **4677.** **Metabolic Imaging to Differentiate Aggressive Versus Indolent Prostate Cancer**
Niki Zacharias Millward[1], Christopher McCullough[1], Youngbok Lee[2], Jingzhe Hu[1, 3], Prasanta Dutta[1], David Piwnica-Worms[1], Pratip Bhattacharya[1]

[1]Cancer Systems Imaging , University of Texas MD Anderson Cancer Center, Houston, TX, United States; [2]Department of Applied Chemistry, Hanyang University, Korea; [3]Rice University, TX, United States

Computer 18 4678. Monitoring the Pancreatic Islets Implantation in the Subcutaneous Polymeric Scaffolds by DCE-MRI and Optical Imaging

Andrea Gálisová[1], Daniel Jirák[1], Eva Fábryová[2], Vít Herynek[1], Lucie Kosinová[2], Jan Kříž[2], Milan Hájek[1]
[1]MR Unit, Department of Diagnostic and Interventional Radiology, Institute for Clinical and Experimental Medicine, Prague, Czech Republic; [2]Center of Experimental Medicine, Institute for Clinical and Experimental Medicine, Prague, Czech Republic

Computer 19 4679. Improvements of Quantitative Oxygenation Levels in Venous Blood (Y_v) Measurements Based on QUIXOTIC

Klaus Möllenhoff[1], Nadim Jon Shah[1, 2]
[1]Institute of Neuroscience and Medicine - 4, Forschungszentrum Jülich GmbH, Jülich, NRW, Germany; [2]Faculty of Medicine, Department of Neurology, JARA, RWTH Aachen University, Aachen, NRW, Germany

Computer 20 4680. Optimization of Pulsed CEST Imaging Using Genetic Algorithm

Eriko Yoshimaru[1], Edward Randtke[1], Mark D. Pagel[1], Julio Cárdenas-Rodríguez[1]
[1]Biomedical Engineering, University of Arizona, Tucson, AZ, United States

Computer 21 4681. Tri-Modal *In Vivo* Imaging of the Rodent Pancreatic Islets Transplanted in the Subcutaneous Site

Sayuan Liang[1], Karim Louchami[1, 2], Bryan Holvoet[1], Rein Verbeke[3], Bella Manshian[1], Willy J Malaisse[2], Abdullah Sener[2], Ine Lentacker[3], Uwe Himmelreich[1]
[1]Department of Imaging & Pathology, KU Leuven, Leuven, Flemish Brabant, Belgium; [2]Laboratory of Experimental Hormonology, Université Libre de Bruxelles, Brussels, Belgium; [3]Laboratory for General Biochemistry and Physical Pharmacy, Ghent University, Ghent, East Flanders, Belgium

Computer 22 4682. Normal Saline Injections with Dynamic Inversion Recovery Pulse Sequences: Dynamic Parameter Mappings with Signal Polarity Correction

Hernan Jara[1], Asim Z. Mian[1], Osamu Sakai[1], Stephan Anderson[1], Jorge A. Soto[1], Alexander M. Norbash[1]
[1]Boston University, Boston, MA, United States

Electronic Poster
SV MRS Acquisition Methods

Exhibition Hall Thursday 14:30-15:30

Computer 25 4683. Comparison of MEGA-PRESS and A-PRESS for the Measurements for GABA Concentration in the Brain of Healthy Volunteers

Zhengsong Wang[1, 2], Caroline Rae[3], Guangqiang Geng[4], Weibo Chen[5], Fei Gao[1], Bo Liu[1], Jie Gan[2], Xue Bai[6], Bin Zhao[1], Guangbin Wang[1]
[1]Shandong Medical Imaging Research Institute, Shandong University, Jinan, Shandong, China; [2]Second Affiliated Hospital of Shandong university of Traditional Chinese Medicine, Jinan, Shandong, China; [3]Neuroscience Research Australia,UNSW, Sydney, Australia; [4]Philips Healthcare MR R&D, Suzhou, Jiangsu, China; [5]Philips Healthcare, Shanghai, China; [6]QIlu Hospital, Shandong University, Jinan, Shandong, China

Computer 26 4684. Non Uniform Sampling for Sparse 2D Correlated MRS: A Quantitative Point of View

Dimitri Martel[1], Dany Merhej[2], Remy Prost[1], Denis Friboulet[1], Helene Ratiney[1]
[1]CREATIS; CNRS UMR 5220; INSERM U1044; Université Lyon 1; INSA Lyon, Villeurbanne, France; [2]ISAE CNAM, Beirut, Lebanon

Computer 27 4685. Line Broadening Interference for High-Resolution MRS Under Inhomogeneous Magnetic Fields

Zhiliang Wei[1], Zhong Chen[1]
[1]Department of Electronic Science, Xiamen University, Xiamen, Fujian, China

Computer 28 4686. Heteronuclear Single Quantum Coherence (HSQC) MRS in Humans at 7 T

Robin A. de Graaf[1], Henk M. De Feyter[1], Douglas L. Rothman[1]
[1]MRRC, Yale University, New Haven, CT, United States

Computer 29 **4687. J-Difference Editing of GABA with Extended Echo-Times**
Jamie Near[1, 2], Chathura Kumaragamage[3]
[1]Department of Psychiatry, McGill University, Montreal, Quebec, Canada; [2]Centre d'Imagerie Cérébrale, Douglas Institute, Montreal, Quebec, Canada; [3]Department of Biomedical Engineering, McGill University, Montreal, Quebec, Canada

Computer 30 **4688. Sparse Reconstruction of Localized Correlated Spectroscopy: From Sub-Sampled Priors to Fast Acquisition**
Mohammad Abdi-Shektaei[1], Abbas Nasiraei Moghaddam[1, 2], Rajakumar Nagarajan[3], M. Albert Thomas[3]
[1]BME, Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran; [2]School of Cognitive Sciences, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran; [3]Radiological Sciences, UCLA School of Medicine, Los Angeles, CA, United States

Computer 31 **4689. Average Weighted Acquisition for Faster Acquisition of *In Vivo* Localized Two Dimensional Correlation Spectroscopy of the Brain**
Gaurav Verma[1], Michael Albert Thomas[2], Harish Poptani[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Radiology, University of California at Los Angeles, Los Angeles, CA, United States

Computer 32 **4690. An Optimized PRESS Sequence for the Detection of Glycine at 9.4 T**
Brennen J. Dobberthien[1], Anthony G. Tessier[1, 2], B. Gino Fallone[1, 2], Atiyah Yahya[1, 2]
[1]Department of Oncology, University of Alberta, Edmonton, Alberta, Canada; [2]Department of Medical Physics, Cross Cancer Institute, Edmonton, Alberta, Canada

Computer 33 **4691. Accurate Compressive Sensing of 1H MR Spectroscopic Imaging in Brain Tumors**
Mohammad Abdi-Shektaei[1], Felix Raschke[2], Franklyn A. Howe[3], Abbas Nasiraei Moghaddam[1, 4]
[1]BME, Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran; [2]Radiological Sciences, Division of Clinical Neuroscience, University of Nottingham, Nottingham, United Kingdom; [3]Cardiovascular and Cell Sciences Research Institute, St George's, University of London, London, United Kingdom; [4]School of Cognitive Sciences, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran

Computer 34 **4692. Macromolecule Suppressed GABA Editing with Single Spin-Echo and Out-Of-Voxel Artifact Suppression**
Meng Gu[1], Ralph Hurd[2], Ralph Noeske[3], Ariel Rokem[4], Laima Baltusis[5], Daniel Spielman[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]GE Healthcare, Menlo Park, CA, United States; [3]MR Application & Workflow Development, GE Healthcare, Berlin, Germany; [4]Psychology, Stanford University, Stanford, CA, United States; [5]Center for Cognitive and Neurobiological Imaging, Stanford University, Stanford, CA, United States

Computer 35 **4693. *In Vivo* Detection of Lactate at 7T Using Long TE SLASER and MEGA-SLASER**
Chen Chen[1], Peter Morris[1], Susan Francis[1], Penny Gowland[1]
[1]Sir Peter Mansfield Imaging Centre (SPMIC), University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

Computer 36 **4694. Optimization of MEGA-PRESS for the Simultaneous Detection of Glutamate and Glutamine, and GABA**
Karim Snoussi[1, 2], Subechhya Pradhan[1, 2], Ashley D. Harris[1, 2], Richard A.E. Edden[1, 2], Peter B. Barker[1, 2]
[1]Russel H. Morgan Department of Radiology and Radiological Science, Johns Hopkins University School of Medidine, Baltimore, MD, United States; [2]Kennedy Krieger Institute, Johns Hopkins University, Baltimore, MD, United States

Computer 37 **4695. Improving Robustness for Voxel Based Transmit Gain Calibration Using Bloch-Siegert Shift Method for MR Spectroscopy at 7T**
Alessandra Toncelli[1], Ralph Noeske[2], Mauro Costagli[3], Michela Tosetti[3, 4]
[1]INFN and Department of Physics, University of Pisa, Pisa, Italy; [2]GE Healthcare, Berlin, Germany; [3]Fondazione Imago7, Italy; [4]Stella Maris Scientific Institute, Italy

Computer 38 **4696. Metabolite Cycled Single Voxel ^{1}H Spectroscopy at 9.4T**
Ioannis Angelos Giapitzakis[1], Sahar Nassirpour[1], Nikolai Avdievich[1], Roland Kreis[2], Anke Henning[1, 3]
[1]Max Planck Institute for Biological Cybernetics, Tuebingen, Baden-Wuerttemberg, Germany; [2]Departments of Radiology and Clinical Research, University of Bern, Bern, Switzerland; [3]Institute for Biomedical Engineering, UZH and ETH Zurich, Zurich, Switzerland

Computer 39 **4697. Multi-Echo Echo-Planar J-Resolved Spectroscopy of Human Brain Using Semi-LASER Pulses**
Manoj Kumar Sarma[1], Rajakumar Nagarajana[1], Paul Michael Macey[2], M. Albert Thomas[1]
[1]Radiological Sciences, UCLA School of Medicine, Los angeles, CA, United States; [2]School of Nursing, UCLA School of Medicine, Los angeles, CA, United States

Computer 40 **4698. High-Resolution Spatially Encoded Intermolecular Double-Quantum Coherence NMR Spectroscopy for Biological Systems**
Kaiyu Wang[1], Hao Chen[1], Zhiyong Zhang[1], Yuqing Huang[1], Zhong Chen[1]
[1]Electronic Science, Xiamen University, Xiamen, Fujian, China

Computer 41 **4699. Volumetric Navigated MEGA-SPECIAL for Real-Time Motion Corrected GABA MRS**
Muhammad Gulamabbas Saleh[1], A. Alhamud[1], Lindie Du Plessis[1], André J.W. van der Kouwe[2], Jamie Near[3], Ernesta M. Meintjes[1]
[1]Department of Human Biology, MRC/UCT Medical Imaging Research Unit, University of Cape Town, Cape Town, Western Cape, South Africa; [2]Massachusetts General Hospital, Charlestown, MA, United States; [3]Douglas Mental Health University Institute and Department of Psychiatry, McGill University, Montreal, Canada

Computer 42 **4700. The Effects of Gadolinium on the Hyperpolarization of [1-^{13}C]pyruvate at 3.35 T and 5 T**
Michael S. Dodd[1], Jack J. Miller[1, 2], Damian J. Tyler[1]
[1]Department of Physiology, Anatomy and Genetics, University of Oxford, Oxford, United Kingdom; [2]Department of Physics, University of Oxford, Oxford, United Kingdom

Computer 43 **4701. ^{13}C Signal Enhancement in Human Brain at 7T by NOE and Stochastic Proton Decoupling**
Shizhe S. Li[1], Li An[1], Maria Ferraris Araneta[1], Christopher Johnson[1], Jun Shen[1]
[1]NIMH, National Institutes of Health, Bethesda, MD, United States

Computer 44 **4702. MR Spectroscopy of Very Small Volumes (<0.4 µl) of 13C-Labelled Metabolites Using Microcoil Detection: Application to Online Measurements of Cerebral Microdialysate**
Silvia Rizzitelli[1], Alan Wong[2], Guillaume Radecki[3], Luisa Ciobanu[3], Gerard Raffard[1], Stephane Sanchez[1], Veronique Bouchaud[1], Leslie Mazuel[1], Anne-Karine Bouzier-Sore[1], Yannick Crémillieux[1]
[1]CRSMB, University of Bordeaux, Bordeaux, France, France; [2]NIMBE/LSDRM, CEA-Saclay, Gif-sur-Yvette, France, France; [3]CEA I2BM NeuroSpin, Gif-sur-Yvette, France, France

Computer 45 **4703. Reproducibility of Dynamic Phosphorus MRS of Plantar Flexion: Influence of Ergometer Design, Magnetic Field Strength, and RF-Coil Design**
Petr Šedivý[1], Monika Christina Kipfelsberger[2], Miloslav Drobný[1], Martin Krššák[2, 3], Jan Rydlo[1], Marek Chmelík[2], Marjeta Tušek Jelenc[2], Milan Hájek[1], Siegfried Trattnig[2], Monika Dezortová[1], Ladislav Valkovic[2, 4]
[1]MR-Unit, Department of Diagnostic and Interventional Radiology, Institute for Clinical and Experimental Medicine, Prague, Czech Republic; [2]High Field MR Centre, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria; [3]Division of Endocrinology and Metabolism, Department of Internal Medicine III, Medical University of Vienna, Vienna, Austria; [4]Department of Imaging Methods, Institute of Measurement Science, Slovak Academy of Sciences, Bratislava, Slovakia

Computer 46 **4704. Feasibility and Repeatability of the Localized ^{31}P MRS Four-Angle Saturation Transfer (FAST) of the Human Gastrocnemius Muscle Using Surface Coil at 7T**
Marjeta Tušek Jelenc[1], Marek Chmelík[1], Wolfgang Bogner[1], Martin Krššák[1, 2], Siegfried Trattnig[1], Ladislav Valkovic[1, 3]
[1]High Field MR Centre, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Vienna, Austria; [2]Division of Endocrinology and Metabolism, Department of Internal Medicine III, Medical University of Vienna, Vienna, Austria; [3]Department of Imaging Methods, Institute of Measurement Science, Slovak Academy of Sciences, Bratislava, Slovakia

Computer 47 **4705. Proton Magnetic Resonance Spectroscopy Techniques to Measure the Lipid Olefinic Resonance *In Vivo***
Atiyah Yahya[1, 2]
[1]Department of Oncology, University of Alberta, Edmonton, Alberta, Canada; [2]Department of Medical Physics, Cross Cancer Institute, Edmonton, Alberta, Canada

Computer 48 4706. Potential Effects of Superficial Fat on Metabolite Concentrations Determined by Water Referencing Studied with Various Acquisition Settings
Sreenath Pruthviraj Kyathanahally[1], Nicole D Fichtner[1], Victor J Adalid[1], Roland Kreis[1]
[1]Depts. Radiology and Clinical Research, University Bern, Bern, Switzerland

Electronic Poster
MRS Data Processing Quantitation of MRSI Aquirition Method

Exhibition Hall Thursday 14:30-15:30

Computer 49 4707. A Pilot Validation of Accelerated Multi-Echo Based Echo-Planar Correlated Spectroscopic Imaging in Human Calf Muscles
Manoj Kumar Sarma[1], Zohaib Iqbal[1], Brian Burns[1], Rajakumar Nagarajana[1], Cathy C. Lee[2], M. Albert Thomas[1]
[1]Radiological Sciences, UCLA School of Medicine, Los angeles, CA, United States; [2]Geriatrics, VA Greater Los Angeles Healthcare System, Los angeles, CA, United States

Computer 50 4708. Spectral-Spatial-Spiral MRSI: Fast Prostate MR Spectroscopic Imaging with Low SAR on 7T
Bart Philips[1], Miriam W. van de Stadt-Lagemaat[1], Mark J. van Uden[1], Eline K. Vos[1], Borjan Gagoski[2], Adam B. Kerr[3], Marnix C. Maas[1], Tom W.J. Scheenen[1]
[1]Radiology and Nuclear Medicine, Radboud University Medical Centre, Nijmegen, Gelderland, Netherlands; [2]Fetal-Neonatal Neuroimaging & Developmental Science Center, Boston Children's Hospital, Harvard Medical School, Boston, MA, United States; [3]Magnetic Resonance Systems Research Lab, Electrical Engineering, Stanford University, Stanford, CA, United States

Computer 51 4709. Compressed Sensing of Non-Uniformly Undersampled 3D EPSI of Healty Brain
Rajakumar Nagarajan[1], Zohaib Iqbal[1], Manoj K. Sarma[1], M.Albert Thomas[1]
[1]Radiological Sciences, UCLA School of Medicine, Los Angeles, CA, United States

Computer 52 4710. Fast and Simple Water Signal Acquisition Sequence for Quantification of ^{1}H Metabolites in the Brain
Michal Bittsansky[1], Petra Hnilicova[1], Dusan Dobrota[1]
[1]Jessenius Faculty of Medicine, Comenius University, Martin, Slovakia, Slovakia

Computer 53 4711. Accelerated Multi-Slice ^{1}H FID-MRSI in the Human Brain at 9.4 T
Sahar Nassirpour[1], Thomas Kirchner[2], Ioannis Angelos Giapitzakis[1], Anke Henning, [12]
[1]Max Planck Institute for Biological Cybernetics, Tübingen, Germany; [2]Institute for Biomedical Engineering, UZH and ETH Zürich, Zürich, Switzerland

Computer 54 4712. GRAPPA Accelerated CSI and Its Impacts for Metabolites Quantifications
Tiejun Zhao[1], Julie W. Pan[2], Hoby P. Hetherington[2]
[1]Siemens Medical Solutions USA, Inc., Pittsburgh, PA, United States; [2]Department of Radiology, Pittsburgh, PA, United States

Computer 55 4713. To NOE or Not to NOE? - A Study About the Use of the Nuclear Overhauser Effect in ^{31}P MRSI of the Brain at 7T
Miriam W. van de Stadt-Lagemaat[1], Bart L. van de Bank[1], Marnix C. Maas[1], Tom WJ Scheenen[1, 2]
[1]Radiology and Nuclear Medicine, Radboud University Medical Center, Nijmegen, Netherlands; [2]Erwin L. Hahn Institute for Magnetic Resonance Imaging, Essen, Germany

Computer 56 4714. Fast 31P Chemical Shift Imaging Using Multi-Spiral Acquisition at 9.4T
Yuchi Liu[1], Yun Jiang[1], Charlie Yi Wang[1], Mark Alan Griswold[1, 2], Xin Yu[1, 2]
[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Radiology, Case Western Reserve University, Cleveland, OH, United States

Computer 57 4715. Implementation and Comparison of LASER- And Semi-LASER-Based MRSI Pulse Sequences at 9.4T
Sungjin Kim[1, 2], Hyeonjin Kim[1, 2]
[1]Radiology, Seoul National University Hospital, Seoul, Korea; [2]Biomedical Sciences, Seoul National University, Seoul, Korea

Computer 58 4716. A Surface Crusher Coil for Human Cardiac Phosphorus (^{31}P) MR Spectroscopic Imaging Study at 7 Tesla
Benoit Schaller[1], William Clarke[1], Stefan Neubauer[1], Matthew Robson[1], Christopher Rodgers[1]
[1]Cardiovascular Department, Oxford Centre for Clinical Magnetic Resonance Research, Oxford, Oxfordshire, United Kingdom

Computer 59 4717. Correction for Off-Resonance-Induced Displacement in Spectrally Undersampled Hyperpolarized 13C Echo-Planar Spectroscopic Imaging
Peng Cao[1], Hsin-Yu Chen[1], Jeremy Gordon[1], Peter Shin[1], Wenwen Jiang[1], Peder Larson[1]
[1]University of California, San Francisco, San Francisco, CA, United States

Computer 60 4718. Quantitative Study of RF Field Transmission and Detection Sensitivity Improvements for 3D 31P CSI with Ultrahigh Dielectric Constant Material at 7.0 T
Byeong-Yeul Lee[1], Sebastian Rupprecht[2], Xiao-Hong Zhu[1], Qing X. Yang[3], Wei Chen[1]
[1]Center for Magnetic Resonance Research, Department of Radiology, University of Minnesota, Minneapolis, MN, United States; [2]Center for Magnetic Resonance Research, Department of Radiology, he Pennsylvania State University College of Medicine, Hershey, Hershey, PA, United States; [3]Center for NMR Research, Department of Radiology, The Pennsylvania State University College of Medicine, Hershey, PA, United States

Computer 61 4719. *In Vivo* Application of 3D Deuterium (^{2}H) CSI for Quantitative Imaging of Cerebral Glucose Metabolism at Ultrahigh Field
Ming Lu[1], Xiao-Hong Zhu[1], Yi Zhang[1], Wei Chen[1]
[1]Center for Magnetic Resonance Research, University of Minnesota Medical School, Minneapolis, MN, United States

Computer 62 4720. Performance Optimized Lipid Artifact Removal (POLAR) with BASE-SLIM of Full FOV Human Brain 1H MRS
Peter Adany[1], In-Young Choi[1, 2], Phil Lee[1, 3]
[1]Hoglund Brain Imaging Center, University of Kansas Medical Center, Kansas City, KS, United States; [2]Neurology, University of Kansas Medical Center, Kansas City, KS, United States; [3]Molecular and Integrative Physiology, University of Kansas Medical Center, Kansas City, KS, United States

Computer 63 4721. Imaging of Tumor Glycolysis with 2D Heteronuclear Multiple Quantum Coherence: Accelerated Acquisitions Using Compressed Sensing
Hirohiko Imai[1], Kei Sano[1], Shota Momma[1], Toshiyuki Tanaka[1], Tetsuya Matsuda[1]
[1]Department of Systems Science, Graduate School of Informatics, Kyoto University, Sakyo-ku, Kyoto, Japan

Computer 64 4722. Human Brain 1H MRS of GM and WM: A Comparison of BASE-SLIM and CSI Regression
Peter Adany[1], Phil Lee[1, 2], In-Young Choi[1, 3]
[1]Hoglund Brain Imaging Center, University of Kansas Medical Center, Kansas City, KS, United States; [2]Molecular and Integrative Physiology, University of Kansas Medical Center, Kansas City, KS, United States; [3]Neurology, University of Kansas Medical Center, Kansas City, KS, United States

Computer 65 4723. A Pilot Study on Measurement of Metabolites in the Hippocampal Subfields: Based on Multivoxel 1HMRS and Segmentation from High Resolution Volumetric MRI
Wenqing Liao #[1], Wenbo Wu #[2], Yu Sun #[1], Renyuan Liu[3], Zhenyu Yin[2], Huiting Wang[3], Xin Zhang[3], Ming Li[3], Chuanshuai Tian[3], Kun Wang[3], Haiping Yu[3], Weibo Chen[4], Bin Zhu[3], Suiren Wan[1], Yun Xu*[2], Bing Zhang*[3]*
[1]The Laboratory for Medical Electronics, School of Biological Sciences and Medical Engineering, Southeast University, Nanjing, China; [2]Department of Neurology, The Affiliated Drum Tower Hospital of Nanjing Medical University, Nanjing, China; [3]Department of Radiology, The Affiliated Drum Tower Hospital of Nanjing University Medical School, Nanjing, China; [4]Philips Healthcare, Shanghai, China

Computer 66 4724. Lineshape Compensation Methods for Modeling of 2DJ Spectra
ISMRM MERIT AWARD magna cum laude
Victor Javier Adalid[1], Chris Boesch[1], Christine S. Bolliger[1], Roland Kreis[1]
[1]Depts. Radiology and Clinical Research, University Bern, Bern, Switzerland

Computer 67 **4725. Automated Pipeline for Processing and Analyzing MR Spectroscopic Imaging and Segmentation Data of Human Brain**

Victor E. Yushmanov[1], Yoojin Lee[1], Claudiu Schirda[1], Hoby P. Hetherington[1], Jullie W. Pan[1, 2]
[1]Department of Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [2]Department of Neurology, University of Pittsburgh, Pittsburgh, PA, United States

Computer 68 **4726. FID-A: an Open-Source, MATLAB-Based Toolbox for Magnetic Resonance Spectroscopy Simulation and Data Processing**

Jamie Near[1, 2], Gabriel A. Devenyi[3], Robin Simpson[4]
[1]Department of Psychiatry, McGill University, Montreal, Quebec, Canada; [2]Centre d'Imagerie Cérébrale, Douglas Institute, Montreal, Quebec, Canada; [3]Centre d'Imagerie Cérébrale, Douglas Institute, Montréal, Quebec, Canada; [4]Department of Medical Physics, Freiburg University, Freiburg, Germany

Computer 69 **4727. Spectral Registration: a Simple New Method for Frequency and Phase Drift Correction of Magnetic Resonance Spectroscopy Data**

Jamie Near[1, 2], Richard Edden[3], John Evans[4], Raphael Paquin[5], Ashley Harris[3], Peter Jezzard[6]
[1]Department of Psychiatry, McGill University, Montreal, Quebec, Canada; [2]Centre d'Imagerie Cérébrale, Douglas Institute, Montreal, Quebec, Canada; [3]Kennedy Krieger Institute, Johns Hopkins University, Baltimore, MD, United States; [4]Cardiff University, Cardiff, Wales, United Kingdom; [5]Healthcare, Siemens Canada Limited, Montreal, Quebec, Canada; [6]FMRIB Centre, University of Oxford, Oxford, Oxfordshire, United Kingdom

Computer 70 **4728. Multi-Channel Reconstruction in Single Voxel Spectroscopy**

Carlos E. Garrido Salmon[1, 2], Emma Louise Hall[1], Carolina Fernandes[1], Chen Chen[1], Peter G. Morris[1]
[1]Sir Peter Mansfield Magnetic Resonance Centre, Nottingham, Nottinghamshire, United Kingdom; [2]Department of Physics, University of Sao Paulo, Ribeirao Preto, Sao Paulo, Brazil

Computer 71 **4729. Spectral Fitting Using Basis Set Distorted by Measured B0 Field Distribution**

Ningzhi Li[1], Li An[1], Shizhe S. Li[1], Jun Shen[1]
[1]National Institute of Mental Health, National Institutes of Health, Bethesda, MD, United States

Computer 72 **4730. Phasing and Curve Fitting of Highly Resolved 2D Constant Time PRESS Spectra for Quantitation of Glutamate, GABA and Glutamine**

Hidehiro Watanabe[1], Nobuhiro Takaya[1], Fumiyuki Mitsumori[1]
[1]Center for Environmental Measurement and Analysis, National Institute for Environmental Studies, Tsukuba, Ibaraki, Japan