STUDY GROUP SESSION

Title: Hyperpolarized Media MR
Day: Monday, 24 April
Time: 16:15 - 18:15
Room #: Rm 317AB

Study Group Chair, Matthew Merritt, Ph.D.; Vice Chair, Bastiaan Driehuys, Ph.D.; Secretary, Christoffer Laustsen, Ph.D.; Committee: Past Chair, Daniel B. Vigneron, Ph.D.; Trainee Representative, Angus Z. Lau, Ph.D.

2017-2018 Incoming Committee: Secretary, Arnaud Comment, Ph.D.; Trainee Representative, Irene Marco-Rius, Ph.D.

16:15 Introduction - Welcome & Business Meeting
Matthew Merritt, Ph.D.
University of Florida, USA

16:25 Getting More With Less by Minimizing 13C Polarization Losses
Arnaud Comment, Ph.D.
General Electric Healthcare, UK

16:40 The 129Xe MRI Clinical Trials Consortium: A Route for Multi-site Trials
Jason C. Woods, Ph.D.
Cincinnati Children’s Hospital Medical Center, USA

16:55 Understanding Kinetics Using Hyperpolarized Substrates
Peder E. Z. Larson, Ph.D.
University of California at San Francisco, USA

17:10 Traditional & Electronic Poster Session

18:10 Announcement of Poster Award Winners
Hyperpolarized Media SG Committee

18:15 Adjournment

Electronic Poster Presentations - Gas

Assessment of Cinar Destruction in Idiopathic Pulmonary Fibrosis with Hyperpolarised 3He Gas Diffusion-Weighted MRI: Reproducibility of ADC Metrics & Correlation with Physiological Parameters of Disease Severity.
Nicholas Weatherley, MBChB, MRCP
University of Sheffield, UK

Regional Analysis of Gas-Uptake Parameters in the Lung Using Hyperpolarized 129 Xe Chemical Shift Saturation Recovery Spectroscopy & Dissolved-Phase Imaging: A Reproducibility Study
Agilo L. Kern, M.Sc.
Hannover Medical School, Germany

A Pipeline for Quantifying 129 Xe Gas Exchange MRI Across Pulmonary Disorders
Ziyi Wang, B.Eng.
Duke University, USA

Using Hyperpolarized 129 Xe in Human Participants to Perform Functional Magnetic Resonance Imaging (fMRI)
Francis T. Hane, Ph.D.
Lakehead University, Canada

Hyperpolarized Xenon By d-DNP Using the Clinical GE SpinLab Polarizer System
Christian Ø. Mariager, M.Sc.
Aarhus University, Denmark

Asthma Ventilation Abnormalities Measured Using Fourier-Decomposition Free-Breathing Pulmonary 1 H MRI
Dante P. I. Capaldi, B.Sc.(Hons)
Robarts Research Institute, Canada

Evaluation of 129 Xe-RBC Signal Dynamics & Chemical Shift in the Cardiopulmonary Circuit Using Hyperpolarized 129 Xe NMR
Graham Norquay, Ph.D.
University of Sheffield, UK

Electronic Poster Presentations - 13C

Dynamic Nuclear Polarization Across the Barrier: A Focused Ultrasound Approach
Tom Peeters, M.Sc.
Radboud University Medical Center, The Netherlands

Dynamic Shimming for Multi-Slice Hyperpolarized Metabolic Imaging of the Rat Heart at 9.4T
Patrick Wespi, M.Sc.
ETH Zurich, Switzerland

A Referenceless Workflow for Hyperpolarized 13 C EPI
Jiazheng Wang, M.Sc.
Cancer Research UK Cambridge Institute, UK

High Spatiotemporal Resolution bSSFP Imaging of Hyperpolarized 13 C Lactate & Pyruvate Using Spectral Suppression of Alanine & Pyruvate-Hydrate at 3T
Eugene Milhsteyn, B.Sc.
University of California at San Francisco, USA

13 C-MR Hyperpolarization of Lactate using ParaHydrogen & Metabolic Transformation In Vitro
Eleonora Cavallari, Ph.D.
University of Torino, Italy

Improved Off-Resonance Robustness for Spectral-Spatial Excitation & Echo-Planar Imaging of Hyperpolarized 1-13 C Pyruvate & Metabolites
Justin Y.C. Lau, M.Sc.
Sunnybrook Research Institute, Canada

Hyperpolarized 1-13 C Pyruvate MRI Identifies Metabolic Differences Pertaining
Rasmus S. Tougaard, M.D.
to the Fasted & Fed State in Porcine Cardiac Metabolism

Combined Hyperpolarized Pyruvate & Lactate as a Proxy for Hyperpolarized Urea to Measure Tissue Perfusion

**Traditional Poster Presentations**

Cyclodextrin-Based Pseudo-Rotaxanes as Conjugatable Molecular Imaging Biosensors for Hyperpolarized 129 Xe MRI

Human Lung Morphometry using Hyperpolarized 129 Xe Multi-b Diffusion MRI with Compressed Sensing

Quantifying Changes in Time-Resolved Hyperpolarized 129 Xe Spectroscopy among Healthy & IPF Subjects

Dissolved Phase Hyperpolarized Xenon-129 Pulmonary Imaging in the Presence of Gaseous Xenon Signal

Nanodiamond Imaging with Hyperpolarized 13 C MRI

Spatio-Temporally Constrained Reconstruction for Hyperpolarized Carbon-13 MRI Using Kinetic Models

In-Vivo Imaging of Glutamine Metabolism to the Oncometabolite 2-Hydroxyglutatinate in IDH1/2 Mutant Tumors

Simulation of Hyperpolarized Perfusion MRI with a Segmented Snapshot Acquisition

Resolving Spin-Spin Couplings in Hyperpolarized In Vivo Metabolic 13 C Spectroscopy at Low Magnetic Field Following Murine Tail-Vein Injection

Study of the Tetracycline-Controlled Transcriptional Activation of c-Myc in Burkitt Lymphoma B-cell Line P493-6 Using Hyperpolarized [1-13 C]pyruvate

Identifying Immune-Related Metabolic Properties of Pancreatic Cancer via Hyperpolarized Pyruvate Spectroscopic Imaging & NMR Metabolomics

Measuring Lactate Dehydrogenase Activity with Proton Detected 13 C Hyperpolarization

Hyperpolarization of 2-Keto[1-13 C]isocaproate for In Vivo Studies with Photo-Induced Radicals

Characterization & Flip Angle Calibration of 13 C Surface Coils for Hyperpolarization Studies

Hyperpolarization of [3-13 C]5-Aminolevulinic Acid

Practical Considerations of Quantitative kPL Estimation in Hyperpolarized 13 C Imaging in Response to Pulse Sequence Design & Parameters

Hyperpolarized [6-13 C, 6-15 N3]-Arginine as a Novel Probe to Interrogate Arginase Activity

Acute Renal Metabolic Effect of Metformin Treatment Assessed with Hyperpolarized Magnetic Resonance Imaging

SQUID-Based Ultralow Field Nuclear Magnetic Resonance Spectroscopy Using the Para-H2 Based Hyperpolarization Technique SABRE

Assessment of Lactate Dehydrogenase Activity in Renal Cell Carcinomas using Hyperpolarized 13 C Pyruvate MR

Measuring Perfusion in a Renal Ischemic/Reperfusion Rat Model Using Hyperpolarized α-Trideuteromethyl [15 N] Glutamine.

Maternal-Fetal Exchange & Metabolism Followed in Real-Time by Dynamic Hyperpolarized 13 C Imaging on Pregnant Rats

Metabolism of Hyperpolarized Pyruvate Detects Knockout of Pyruvate Dehydrogenase Kinase

Evaluation of the In Vivo on-Target Effect of a Newly Developed LDH Inhibitor using Hyperpolarized 13 C Magnetic Resonance Spectroscopic Imaging