STUDY GROUP SESSION

Title: **High Field Systems & Applications *and* MR Safety Joint Session**
Day: Monday, May 9
Time: 16:30 - 18:30
Room #: Hall 405 E

High Field Study Group Committee: *Chair, Mark E. Ladd, Ph.D.; Vice Chair, Peter R. Luijten, Ph.D.; Secretary, Thoralf Niendorf, Ph.D.; Past-Chair, Lawrence L. Wald, Ph.D. 2016-2017 Incoming Committee: Secretary, Anke Henning, Ph.D.; Trainee Representative, Katharina Paul, Ph. D.; SMRT Representative, Wendy Strugnell, B.App.Sc.(MIT)*

MR Safety Study Group Committee: *Chair, Devashish Shrivastava, Ph.D.; Vice Chair, Lawrence L. Wald, Ph.D.; Secretary, Cornelius A. T. van den Berg, Ph.D.; Past-Chair, Emanuel Kanal, M.D., F.A.R.C.R. 2016-2017 Incoming Committee: Secretary, Ross D. Venook, Ph.D.; Trainee Representative, Oliver Kraff, Ph.D.; SMRT Representative, Titti Owman, (R)(CT)(MR), FSMRT*

Overview: There is an increasing trend toward using temperature or thermal dose rather than SAR to limit RF pulse power, as they more directly correlate with tissue damage. This is particularly true at higher static magnetic fields, where local concentrations of electric fields are more likely. The focus of this joint session of the MR Safety and High Field Study Groups will be utilization and validation of temperature-based RF exposure evaluations.

16:30	Business Meeting: High Field Study Group	Mark E. Ladd, Ph.D. German Cancer Research Center (DKFZ), Germany
16:40	Business Meeting: MR Safety Study Group	Lawrence L. Wald, Ph.D. A.A. Martinos Center MGH, USA
	Towards Control of Temperature	
16:50	Incorporation of a Local Temperature Penalty in Pulse Design	Cem M. Deniz, Ph.D. New York University, USA
17:05	Validation of Temperature Calculations	J. Thomas Vaughan, Jr., Ph.D. University of Minnesota, USA
17:20	Temperature Considerations Around Implants	Eva Oberacker, Dipl.-Phys. Max Delbrück Center for Molecular Med., Germany

Rapid-Fire Poster Presentations on B_1+ Safety

17:35	*Low SAR RF-pulse Design by Joint Optimization of RF & Gradient Shape with Physical Constraints*	Christoph S. Aigner, M.Sc. Technical University Graz, Austria
	Multiband DREAM: Multi-Slice B_1 + Mapping in a Single Shot	Peter Börnert, Ph.D. Philips Research Labs Hamburg, Germany
	RF Safety Assessment of a 7 Tesla Breast Coil: SAR Versus Tissue Temperature Limits	Thomas M. Fiedler, M.Sc. German Cancer Research Center (DKFZ), Germany
	Generalized Phase Based Electrical Conductivity Imaging	Necip Gurler, M.Sc. Bilkent University, Turkey
	Comparing RF Heating Simulations & Experimental Results in pTx Coils: An Evaluation of Three Simulation Methods	Hongbae Jeong, M.Sc. FMRIB Centre, University of Oxford, United Kingdom
	Modelling the RF safety of Tattoo Pigment Ink for Subjects Undergoing 7 Tesla MRI	Hongbae Jeong, M.Sc. FMRIB Centre, University of Oxford, United Kingdom
	Applying "Electric Properties Tomography" to Low Frequency Conductivity Using Magnetic Particle Imaging	Ulrich Katscher, Ph.D. Philips GmbH Innov. Tech., Germany

	Influence of Electrical Properties of Lead Insulation on Radio Frequency Induced Heating During MRI	Mikhail Kozlov, Ph.D. MR:Comp GmbH, Germany
	Artifacts Affecting Derivative of B_1 Maps for EPT Reconstructions	Stefano Mandija, M.Sc. University Medical Center Utrecht, The Netherlands
	Database Construction for Local SAR Prediction: Preliminary Assessment of the Intra & Inter Subject SAR Variability in Pelvic Region	Ettore Flavio Meliado, M.Sc. University Medical Center Utrecht, The Netherlands
	Assessment of RF Induced Heating of Intracranial Micro-Depth Electrodes During MRI	Anastasia Papadaki, M.Sc. University College London Hospital, United Kingdom
	Improving Peak Local SAR Prediction in Parallel Transmit Using In-situ S-matrix Measurements	Matthew C. Restivo, M.Sc. University Medical Center Utrecht, The Netherlands
	Coil Compression for Improved Phase Image Signal-to-Noise Ratio in Electrical Property Tomography	Kathleen M. Ropella, M.Sc. University of Michigan, USA
	Global Maxwell Tomography: A Novel Technique for Electrical Properties Mapping without Symmetry Assumptions or Edge Artifacts	José E. C. Serrallés Massachusetts Institute of Technology, USA
	E-field Comparison of 1.5T Transmit Head & Extremity Coils to 1.5T Body Coils – Implications for Implantable Cardiac Pacemaker & Defibrillator RF Heating & Unintended Stimulation	Shiloh Sison, M.Sc. St. Jude Medical Center, USA
	Subject-Specific SAR Prediction in Adults & Children at 7.0T	Gianluigi Tiberi, Ph.D. IRCCS Stella Maris Scientific Institute, Italy
	Ultra-Fast MRI Based Transfer Function Determination for the Assessment of Implant Safety.	Janot P. Tokaya, M.Sc. University Medical Center Utrecht, The Netherlands
	Large Volume Distributed Temperature Measurements using MRI-Compatible Raman Spectroscopy	Andrew G. Webb, Ph.D. Leiden University Medical Center, The Netherlands
	SAR/B_1 + Calibration Workflow for Safe, High Duty-Cycle Parallel Transmission Imaging at Ultra-High Field	Filiz Yetisir, M.Sc. Massachusetts Institute of Technology, USA
	Development of a Set of Generic Numerical Birdcages for Comprehensive Evaluations of Induced RF Fields for Implant Safety	Earl Zastrow, Ph.D. IT'IS Foundation, Switzerland
18:15	Poster prizes	High Field & MR Safety Committees
18:30	Adjournment	