10th BIENNIAL

2015 Minnesota Workshop on High and Ultra-High Field Imaging

THE GOAL OF THIS WORKSHOP is to provide a forum to disseminate and discuss the technical issues and applications of MRI/MRS conducted with high magnetic fields (≥ 3 T). Presentations from experts in the major areas of high field MR research will cover fundamental principles, methodology, and biomedical applications in the brain as well as the other organ systems in the body. After attending this workshop, individuals can expect to be well informed of the advantages and limitations of high field MR and will have acquired much of the basic knowledge necessary to undertake high field MR investigations. Designed as both an educational program and a scientific forum for the presentation of the state-of-the-art research, the workshop is intended for a wide spectrum of basic and clinical scientists including cognitive scientists, physicists, radiologists, neurologists, neuropsychologists, psychiatrists and others interested in the technical development and biomedical applications of high field MRI.

Workshop Highlights

To commemorate our 10th biennial workshop, we will open with a special historical session, *Two Decades of High Field MR*, in which speakers from our first workshop in 1997 will give their perspective on the progress and future challenges of high field MR.

We will also celebrate reaching and exceeding 10 T for whole-body human imaging.

On the second day, we will showcase a session on the NIH BRAIN Initiative Program, featuring principal investigators from the recently funded BRAIN Initiative projects.

Call for Abstracts

Prospective participants are invited to submit abstracts for oral and poster presentations. The deadline for submission is August 1, 2015. Abstracts are limited to one page in length, including all images, tables, graphs and references. Font size should be no smaller than 8 pt. The format should follow the ISMRM annual meeting standard: formatted in one column, including images and tables as needed with the following sections: title, authors, affiliations, purpose, methods, results, discussion, conclusion, references.

The highest scoring abstracts will be given a 15-minute oral presentation. Other accepted abstracts will be presented as a brief, one-slide oral presentation ('summary pitch') and a traditional poster. Please submit abstracts by email to cmrrworkshop@umn.edu by August 1, 2015 for full consideration.

UNIVERSITY OF MINNESOTA
Department of Radiology
University of Minnesota
2021 6th ST SE
Minneapolis, MN 55455

Registration, lodging, and current information available on the workshop website:
www.cmrr.umn.edu/workshop2015

Send questions to: cmrrworkshop@umn.edu

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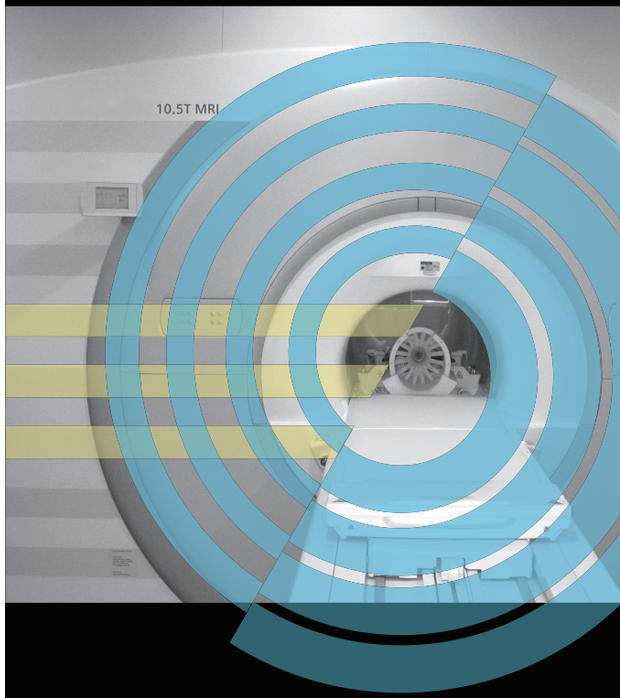
2015 Minnesota Workshop on High and Ultra-High Field Imaging

October 1 – 3, 2015



HANDS-ON TRAINING COURSES:

Imaging Methods for the Human Connectome Project

High-Field Parallel Transmission and Engineering (7 T & 10.5 T)

MR Spectroscopy

Center for Magnetic Resonance Research
Department of Radiology
University of Minnesota

WWW.CMRR.UMN.EDU/WORKSHOP2015

Program

THURSDAY, OCTOBER 1

Session 1: Two Decades of High Field MR

Kamil Ugurbil, University of Minnesota
Thomas Budinger, University of California at Berkeley
James Hyde, Medical College of Wisconsin
Rolf Gruetter, École Polytechnique Fédérale de Lausanne
Mark Haacke, Wayne State University

Session 2: Magnetic Resonance Spectroscopy

Ovidiu Andronesi, MGH/Harvard
Jun Shen, NIH NIMH
Melissa Terpstra, University of Minnesota

Session 3: New Contrasts and Methods

Pierre-François Van de Moortele, University of Minnesota
Michael Knight, Medical University of Vienna
Peter van Zijl, Kennedy Krieger Institute
Dan Ma, Case Western Reserve University

Poster session

Reception and tours at CMRR

FRIDAY, OCTOBER 2

Session 4: Engineering and Safety for High Field MR

Robert Slade, Victoria University
Anand Gopinath, University of Minnesota
Nicolas Boulant, NeuroSpin, CEA
Yigitcan Eryaman, University of Minnesota
Leonardo M. Angelone, FDA
Greig Scott, Stanford University

Session 5: NIH Brain Initiative Projects

Lawrence Wald, MGH/Harvard
Allen Song, Duke University
Wei Chen, University of Minnesota
J. Thomas Vaughan, University of Minnesota
David Feinberg, University of California at Berkeley
Julie Brefczynski-Lewis, West Virginia University
Dean Wong, Johns Hopkins University

Dinner at TCF Bank Stadium

Rainer Goebel, Maastricht University

SATURDAY, OCTOBER 3

Session 6: Body Imaging at Ultra High Field

Daniel Sodickson, New York University
Wolfgang Bogner, Medical University of Vienna
Sebastian Schmitter, University of Minnesota
Thoralf Niendorf, Max Delbrück Center for Molecular Medicine

Session 7: Advances in fMRI

Thomas Naselaris, Medical University of South Carolina
David Norris, Radboud University
Michelle Moerel, University of Minnesota
Afonso Silva, NIH NINDS
Geoffrey Ghose, University of Minnesota

Session 8: Imaging the Human Connectome

Koene Van Dijk, MGH/Harvard
Matthew F. Glasser, Washington University
Joseph V. Hajnal, King's College, London
Essa Yacoub, University of Minnesota
Stephen Smith, University of Oxford

Hands-On Training Courses

The training courses will consist of lectures, hands-on sessions, and demonstrations and are mainly targeted for individuals who are new to the field.

1 Imaging Methods for the Human Connectome Project

Coordinator: Essa Yacoub
2 days, Sept 29–30

HCP Data Acquisition and Analysis:

- HCP data collection at 7 T
- HCP-Lifespan data collection – 3 T PRISMA
- Diffusion and fMRI acquisition methods
- Accelerated image reconstruction methods
- HCP data pipeline
- Diffusion data processing
- fMRI data processing

Experiments will be conducted on whole body 3 and 7 T Siemens systems.

2 High-Field Parallel Transmission and Engineering (7 T and 10.5 T)

Coordinators: Pierre-François Van de Moortele and J. Thomas Vaughan
3 days, Sept 28–30

Engineering topics (day 1):

- High-field MR system overview
- Components of RF sub-system for high-field MR scanner
- Different RF coil array designs
- RF coil testing on the bench: performance, safety

Parallel excitation (pTX) methods (days 2-3):

- MR based RF coil array characterization on a phantom
- Fast multi-channel B_1 mapping
- Static B_1 shim in small and large targets
- Simultaneous multi-slice or multi-band pTX RF pulse design
- Multi-dimensional pTX RF pulse design (spokes, transmit SENSE)

In vivo experiments will be conducted on a whole body 7 T Siemens system, equipped with 16 independent transmit channels.

Phantom experiments will be conducted on a whole body 10.5 T Siemens system, equipped with 16 independent transmit channels.

3 MR Spectroscopy

Coordinator: Malgorzata Marjanska
2 days, Sept 29–30

The following topics will be covered:

- RF pulses and pulse sequences for single voxel localization and editing
- Shimming
- Assessment of spectral quality
- Data acquisition: animal and humans
- Post-processing
- Quantification focusing on LCModel

In vivo experiments will be conducted using 9.4 T Varian animal scanner and whole body 7 T Siemens system.

Registration

Attendance for this meeting will be limited; therefore, early registration is advised.

Workshop (includes materials and lunches): $375
Training Course (includes materials and lunches): $800
Workshop and Training Course: $975
Dinner at the TCF Stadium: $55

Web Site Registration and Credit Card Payment at:

http://www.cmrr.umn.edu/workshop2015

Cancellation and Refund Policy

The University of Minnesota, Department of Radiology, reserves the right to cancel the workshop if necessary. Refunds (less a $50.00 administrative fee) will be made upon written request before Sept 1, 2015.

Location

The workshop, hands-on training courses, and reception on Thursday, October 1 will be held at the Center for Magnetic Resonance Research (CMRR), University of Minnesota, 2021 6th Street SE Minneapolis, MN 55455. CMRR is located on the East Bank of the University of Minnesota campus. Conference dinner on Friday, October 2 will be held at the TCF Bank Stadium Club.

Hotel Accommodations

A block of rooms is reserved at The Commons Hotel on the University of Minnesota campus, a short walk from the CMRR:

The Commons Hotel
615 Washington Ave SE
Minneapolis, MN 55414
1.800.822.6757
www.commonshotel.com

Booking should be made by contacting the hotel directly, by phone or online. There is a special hotel rate of $139 plus tax and fees per night (please ask for "10th Biennial Minnesota Workshop and Training").