



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.

Training Courses

Oct. 3-4

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

Imaging Methods for the Connectome Projects

Coordinator: Essa Yacoub

HCP data acquisition and analysis:

- Human Connectome Project (HCP)-Lifespan data collection 3 T PRISMA
- Other Connectome projects
- Diffusion and fMRI acquisition and post-processing methods
- ASL acquisition and post-processing methods
- Accelerated image reconstruction methods
- HCP data management and pipelines

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

Coordinators: Pierre-François Van de Moortele and Gregor Adriany

Engineering topics:

- Ultra-high field MR system overview
- Components of RF sub-system for typical ultra-high field MR scanners
- Different RF transmit coil array designs: dipoles, loops, striplines
- Example of dipole antenna testing on the bench: performance, safety

Parallel excitation (pTX) methods:

- 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.

MR Spectroscopy

Coordinator: Malgorzata Marjanska

The following topics will be covered:

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

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

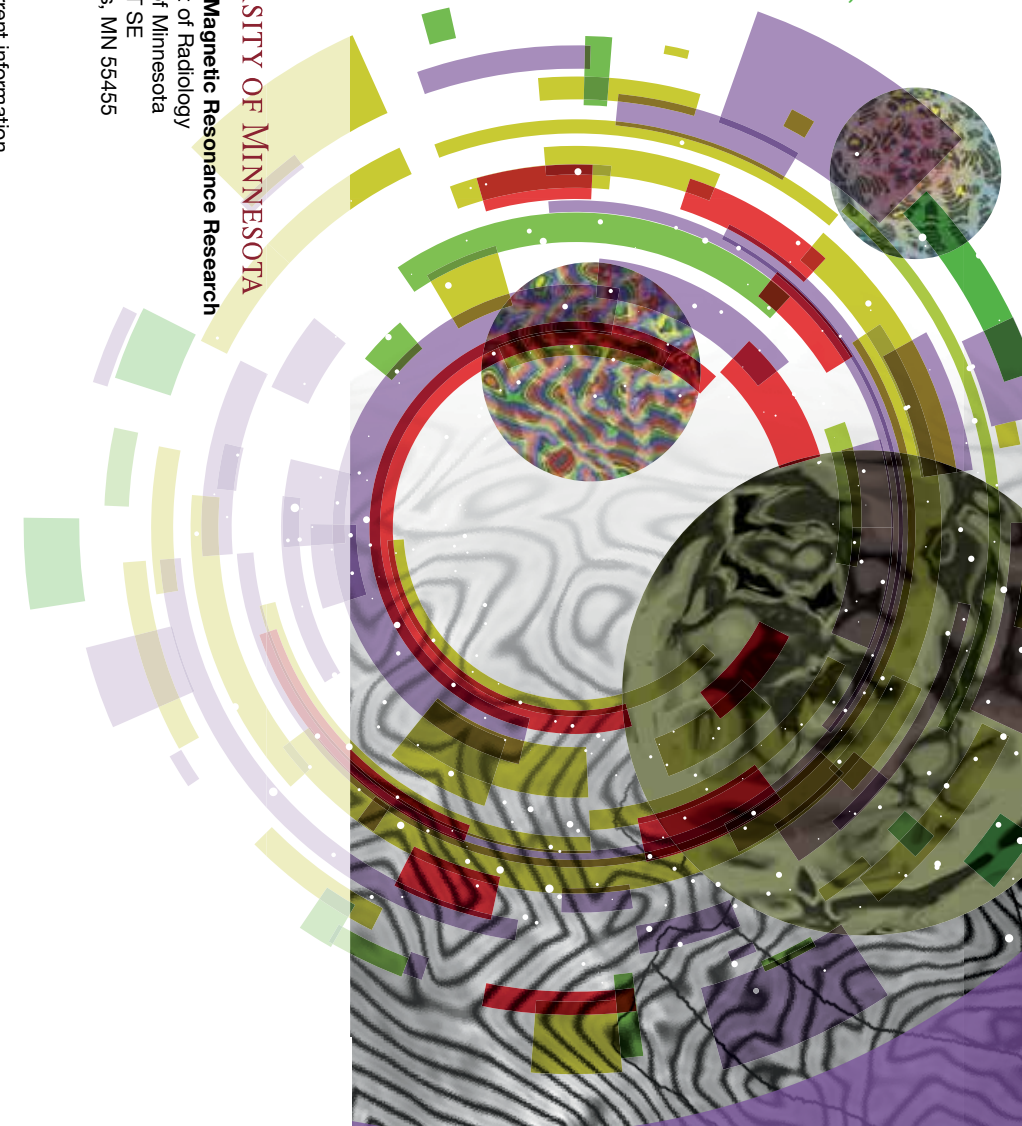


UNIVERSITY OF MINNESOTA
Center for Magnetic Resonance Research
Department of Radiology
University of Minnesota
2021 6th ST SE
Minneapolis, MN 55455

Registration, lodging, and current information available on the workshop website:
www.cmrr.umn.edu/workshop2017
Send questions to: cmrrworkshop@umn.edu

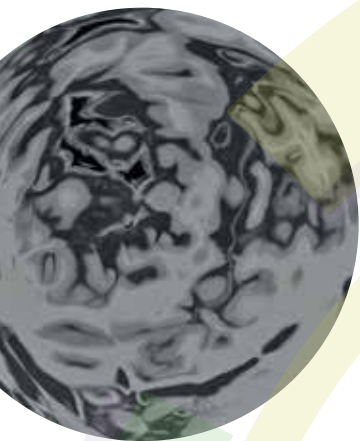
2017 Minnesota Workshop on High and Ultra-high Field Imaging and Training Courses

OCTOBER 3-7, 2017



Center for Magnetic Resonance Research
University of Minnesota

WWW.CMRR.UMN.EDU/WORKSHOP2017



Program

THURSDAY, OCTOBER 5

SESSION 1: *Cells to Networks*

Elizabeth Hillman, Columbia University
Alan Jasanoff, MIT
Prakash Kara, University of Minnesota
Anna Wang Roe, Zhejiang University
Mikhail Shapiro, Caltech

SESSION 2: *MR Above 7 T*

Yigitcan Eryaman, University of Minnesota
Benedikt Poser, Maastricht University
Klaus Scheffler, Max Planck Institute,
Tuebingen

SESSION 3: *Novel Contrasts*

Assaf Gilad, Johns Hopkins University
Matthew Merritt, University of Florida
Julien Valette, CEA
Peter van Gelderen, NIH NINDS

Dinner at TCF Bank Stadium

Joseph Ackerman, Washington University

FRIDAY, OCTOBER 6

SESSION 4: *Neuroimaging*

Peter Bandettini, NIH NIMH
Kendrick Kay, University of Minnesota
Jonathan Polimeni, MGH/Harvard
Alessandro Sbrizzi, University Medical
Center Utrecht
Amir Shmuel, McGill University

SESSION 5: *Connectomics*

Todd Constable, Yale University
Christophe Lenglet, University of Minnesota
David Van Essen, Washington University

SESSION 6: *New Directions in Instrumentation*

Edward Auerbach, University of Minnesota
Matt Bernstein, Mayo Clinic
David Brunner, ETH Zurich
Robin de Graaf, Yale University
Jason Stockmann, MGH/Harvard

Poster session

Reception and tours at the CMRR

SATURDAY, OCTOBER 7

SESSION 7: *Body Imaging at Ultra High Field*

Mehmet Akcakaya, University of Minnesota
Martijn Cloos, NYU
Mark Ladd, DKFZ Heidelberg
Sharmila Majumdar, UCSF
Gregory Metzger, University of Minnesota

SESSION 8: *RF Management*

Priti Balchandani, Mt Sinai School of
Medicine
Riccardo Lattanzi, NYU
Mihir Pendse, Stanford University
Andrew Webb, Leiden University
Medical Center
Xiaoping Wu, University of Minnesota

Call for Abstracts

Prospective participants are invited to submit abstracts for oral and poster presentations. The deadline for submission is August 1, 2017. Abstracts are limited to one page in length, including all images, tables, graphs and references. Font size should be no smaller than 8 pt. Please use following format: 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 10-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, 2017 for full consideration.



Registration

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

Workshop: \$380
(includes materials and lunches)

Training Course: \$950
(includes materials and lunches)

Workshop and Training Course: \$1075

Dinner at the TCF Stadium: \$55

**Web Site Registration and Credit Card
Payment at:**
<http://www.cmrr.umn.edu/workshop2017>

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, 2017.

Location

The workshop, hands-on training courses, and reception on Thursday, October 6 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 Thursday, October 5 will be held at the TCF Bank Stadium Club.

Hotel Accommodations

A block of rooms has been 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

Booking should be made through the Workshop website (www.cmrr.umn.edu/workshop2017). There is a special hotel rate of \$153 single/double, \$173 triple, \$193 quad plus tax and fees per night (please ask for "11th Biennial Minnesota Workshop and Training") before September 5, 2017.