

Front of Brochure

**9th BIENNIAL
2013 MINNESOTA WORKSHOPS**
on
HIGH AND ULTRA-HIGH FIELD IMAGING
OCTOBER 11 – 13, 2013

HANDS ON TRAINING COURSES:
MULTICHANNEL TRANSMIT B_1 at HIGH
FIELD TRAINING COURSE
OCTOBER 9 - 10, 2013
SPECTROSCOPY TRAINING COURSE
OCTOBER 9 - 10, 2013
fMRI and CONNECTIVITY TRAINING
COURSE
OCTOBER 9 -10, 2013



Center for Magnetic Resonance Research
University of Minnesota
2021 6th Street SE
Minneapolis, MN 55455

Sponsored by:
Center for Magnetic Resonance Research
Department of Radiology
University of Minnesota

Page 2 – Faculty list

FACULTY

Adalsteinsson, Elfar

MIT

Assaf, Yaniv

Tel Aviv University

Bowtell, Richard

Sir Peter Mansfield MR Centre

Brinker, Gerhard

Siemens AG Healthcare

Ellermann, Jutta

CMRR, University of Minnesota

Formisano, Elia

Maastricht Brain Imaging Center

Frydman, Lucio

Weizmann Institute of Science

Gallant, Jack

UC Berkeley

Garwood, Michael

CMRR, University of Minnesota

Glasser, Matthew

Washington University, St. Louis

Gold, Gary

Stanford University

Griswold, Mark

Case Western University

Harel, Noam

CMRR, University of Minnesota

Hetherington, Hoby

Yale University

Katscher, Ulrich

Philips Res Laboratories-Hamburg

Knopp, Michael

Ohio State University

Kraff, Oliver

Erwin L. Hahn Institute for MRI

Lenglet, Christophe

CMRR, University of Minnesota

Luijten, Peter

Univ Med Center, Utrecht

Marjanska, Malgorzata

CMRR, University of Minnesota

McMahon, Michael

Johns Hopkins University

Metzger, Gregory

CMRR, University of Minnesota

Muckli, Lars

University of Glasgow

Nagel, Armin

German Cancer Res Ctr Heidelberg

Oz, Gulin

CMRR, University of Minnesota

Pruessmann, Klaas

ETH, Zurich

Raaijmakers, Alexander

Univ Med Center, Utrecht

Rodgers, Christopher

University of Oxford

Roe, Anna

Vanderbilt University

Rooney, William

Oregon Health & Science University

Scheenen, Tom

Radboud Univ Medical Centre

Schluppeck, Denis

University of Nottingham

Schmitter, Sebastian

CMRR, University of Minnesota

Setsompop, Kawin

Harvard University

Ugurbil, Kamil

CMRR, University of Minnesota

Vaughan, J Thomas

CMRR, University of Minnesota

Vu, An (Joseph)

CMRR, Univ of Minnesota

Wieben, Oliver

University of Wisconsin

Wiggins, Graham

New York University

Wu, Xiaoping

CMRR, University of Minnesota

Zaitsev, Maxim

University Hospital, Freiburg

Zhu, Xiao-Hong

CMRR, University of Minnesota

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PROGRAM SCHEDULE

WORKSHOP ON:

HIGH AND ULTRA-HIGH FIELD IMAGING

FRIDAY, OCTOBER 11th, 2013

Registration begins at 7:30 AM

Welcome Kamil Ugurbil

ENGINEERING:

Mastering the Hot Spots

Elfar Adalsteinsson

Xiaoping Wu

Gerhard Brinker

Tommy Vaughan

Alexander Raaijmakers

Graham Wiggins

TOWARDS CLINICAL APPLICATION:

Below the Neck

Oliver Kraff

Gregory Metzger

Christopher Rodgers

Gary Gold

Jutta Ellermann

POSTER SESSION

Poster "Snapshot Presentations"

Poster Viewing and Judging

DINNER AT TCF STADIUM CLUB

After Dinner Speaker: JACK GALLANT

SATURDAY, OCTOBER 12th 2013

HIGH RESOLUTION fMRI

Elia Formisano
Anna Roe
Denis Schluppeck
Lars Muckli

CONNECTOMICS:

MICROSTRUCTURE TO NETWORKS

Yaniv Assaf
Christophe Lenglet
Kawin Setsompop
An “Joseph” Vu
Matthew Glasser

BEYOND WATER MRS AND MRI

Gulin Oz
Hoby Hetherington
Tom Scheenen
Malgorzata Marjanska
Xiao-Hong Zhu
Armin Nagel

RECEPTION AT THE CMRR

SUNDAY, OCTOBER 13th, 2013

TOWARDS CLINICAL APPLICATION

Above the Neck

Michael Knopp
Noam Harel
Oliver Wieben

Peter Luijten
Sebastian Schmitter

Quantitative Contrast for UHF

William Rooney
Michael McMahon
Ulrich Katscher
Richard Bowtell

ENCODING

Lucio Frydman
Maxim Zaitsev
Mark Griswold
Klaas Pruessmann

CLOSING REMARKS

Kamil Ugurbil

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REGISTRATION INFORMATION

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

The registration fee for the workshop is \$300, includes lunch and workshop materials. The registration fee for a Training Course is \$700. The registration fee includes materials and lunches. Registration fee for the Workshop and a Training Course is \$800.

NAME _____
Address _____

City _____
State, Zip Code _____
Telephone-Home (____) _____
Work (____) _____
E-Mail _____

Registration Fees:

- High and Ultra-High Field Imaging Workshop**
\$300.00 _____ October 11-13, 2013
- Multichannel Transmit B₁ at High Field Training Course**
\$700.00 _____ October 9-10, 2013
- Spectroscopy Training Course**
\$700.00 _____ October 9-10, 2013
- fMRI and Connectivity Training Course**
\$700.00 _____ October 9-10, 2013
- Multichannel Transmit B₁ at High Field Training Course and Workshop**
\$800.00 _____ October 9-13, 2013
- Spectroscopy Training Course and Workshop**
\$800.00 _____ October 9-13, 2013
- fMRI & Connectivity Training Course and Workshop**
\$800.00 _____ October 9-13, 2013

Dinner at TCF Stadium, Speaker: Dr. Jack Gallant
\$40.00 _____ October 11, 2013

Web Site Registration and Credit Card Payment at
<https://www.give.umn.edu/forms/cmrr/workshop.cfm> or go to the link on
<http://www.cmrr.umn.edu>

If paying by check, make checks payable to: University of Minnesota Foundation
Complete form and mail to:
Deborah Morgan
Center for Magnetic Resonance Research

2021 6th St. S.E.
Minneapolis, MN 55455

Cancellation and Refund Policy

The University of Minnesota, Department of Radiology, reserves the right to cancel the conference if necessary. Refunds (less a \$50.00 administrative fee) will be made upon written request before 9/1/2013.

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CONFERENCE GOALS

The goal is to provide a forum to introduce 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

The training courses are designed to provide attendees with hands-on experience. The courses are mainly targeted for individuals who are new to the field. Attendees participate in lab sessions designed to illustrate each topic covered in lectures. For trainees that will also attend the workshop, lectures are scheduled to provide an overview of the topics covered by workshop speakers.

Multichannel Transmit B_1 at High Field Training Course

Coordinator: Dr. Pierre-Francois Van de Moortele

October 9 - 10, 2013

The following topics will be covered in lectures and as well as during *in-vivo* experiments:

1. Fast multi channel B_1 mapping
2. Static B_1 shim in small anatomical targets
3. Static B_1 shim in large anatomical targets
4. 2D-pattern shaped excitation with parallel excitation based on "transmit SENSE" RF pulse design
5. Slice selective excitation homogenization based on "spoke excitation k-space trajectories"

In-vivo experiments will be conducted on a whole body human scanner operating at 7 tesla, equipped with 16 independent transmit channels.

Spectroscopy Training Course
Coordinator: Malgorzata Marjanska
October 9 - 10, 2013

The following topics will be covered in lectures, hands-on sessions, and demonstrations:

1. Pulse sequences: localization and editing
2. Shimming
3. Data acquisition using Agilent and Siemens scanners
4. Processing
5. Data analysis focusing on using LCModel

Experiments will be conducted using 9.4 tesla Varian animal scanner and whole body 3 tesla Siemens human scanner.

fMRI and Connectivity Training Course
Coordinators: Cheryl Olman and Essa Yacoub
Hands-on Training, October 9 - 10, 2013

Data Acquisition and Analysis

1. fMRI data collection
2. fMRI data processing
3. Layer specific analyses
4. Surface based analyses
5. High resolution fMRI data analysis
6. Anatomical and functional connectivity analyses
7. Analysis in commercially available packages

Experiments will be conducted on 3 and/or 7 tesla Siemens systems.

POSTER PRESENTATIONS

Posters will be accepted for presentation, and the authors of posters will be additionally provided with an opportunity to give a short oral presentation. If you would like to present a poster at the workshop, please submit a one-page abstract via e-mail to deb@cmrr.umn.edu or mail to Deb Morgan, CMRR, 2021 6th ST SE, Minneapolis, MN 55455. The abstract must be received by September 6, 2013.

LOCATION

The conference will be held at the Center for Magnetic Resonance Research, University of Minnesota, 2021 6th Street SE Minneapolis, MN 55455. The Hands-on Training Workshops,

Oct. 9-10, 2013 and the Reception on Saturday, Oct. 12th, will be held at the CMRR. Conference dinner on Friday, October 11th, will be held at TCF Bank Stadium Club.

HOTEL ACCOMMODATIONS

Hotel Reservations should be made directly with the Commons Hotel 612-379-8888; 800-822-6757; or online at: <https://gc.synxis.com/rez.aspx?Hotel=53931&Chain=11910&template=GCF&shell=GCF2&arrive=10/8/2013&depart=10/13/2013&adult=1&child=0&group=100813UMMR>

Hotel Address is: 615 Washington Avenue SE, Minneapolis, MN 55414. There is a Special Hotel Rate for Conference for both single and double rooms. The rate is \$124 plus tax and fees per night

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Same as old brochure with the return address and Nonprofit info (Address Page)