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
Adalsteinsson, Elfar
MIT
Assaf, Yaniv
Tel Aviv University
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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
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University of Oxford
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Vanderbilt University
Rooney, William
Oregon Health & Science University
Scheenen, Tom
Radboud Univ Medical Centre
Schluppeck, Denis
University of Nottingham
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Harvard University
Ugurbil, Kamil
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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
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
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
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
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 6 th 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)