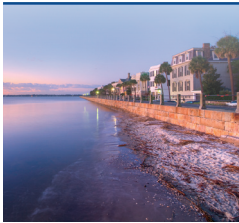


# Functional MRI: Emerging Techniques & New Interpretations



Charleston, SC, USA • 22–25 June 2014

**ORGANIZING COMMITTEE:** Co-Chair: Hanzhang Lu, Ph.D., UT Southwestern Medical Center, Dallas, TX, USA; Co-Chair: Robert Turner, Ph.D., Max-Planck Institute, Leipzig, Germany **COMMITTEE MEMBERS:** Peter A. Bandettini, Ph.D., National Institute of Mental Health, Bethesda, MD, USA; Richard B. Buxton, Ph.D., University of California, San Diego, CA, USA; Joseph A. Helpert, Ph.D., Medical University of South Carolina, Charleston, SC, USA; Mark J. Lowe, Ph.D., Cleveland Clinic Foundation, Cleveland, OH, USA; David G. Norris, Ph.D., Donders Institute, Nijmegen, The Netherlands; Todd Parrish, Ph.D., Northwestern University, Chicago, IL, USA; James J. Pekar, Ph.D., F. M. Kirby Research Center, Baltimore, MD, USA; Kamil Uludag, Ph.D., Maastricht Brain Imaging Center, Maastricht, The Netherlands

**TARGET AUDIENCE:** This workshop is designed for members of the *Current Issues in Brain Function* study group; Basic scientists and physicians interested in measuring brain function and brain physiology in their research; and clinicians (radiologists, neurologists, psychiatrists, neurosurgeons, anesthesiologists).

## OVERVIEW

This workshop will inform researchers and clinicians interested in brain imaging about the latest advances in the development and application of MR techniques to probe brain function.

New evidence and understanding on neurovascular coupling which forms the neurobiological basis of functional MRI will be examined. New imaging acquisition methods, in particular high-field imaging and fast imaging techniques will be reviewed. Emerging physiological MR methods, including oxygen extraction fraction and cerebral metabolic rate, which can provide a quantitative assessment of brain function will be presented. The accuracy of fMRI in encoding and decoding neural signal on a personalized level will be discussed. Unsolved problems and urgent needs from the perspectives of neuroscientists and clinicians will be discussed.

The workshop will feature invited scientific presentations, proffered papers, and poster sessions. A Young Investigator Award, for which students and post-doctoral fellows are eligible, will be awarded based on the quality of the presented work and presentation.

The interdisciplinary faculty and broad audience will ensure that technologies and methodologies are communicated and shared between radiologists, neurologists, psychiatrists, neurosurgeons, neuroscientists, physicists, engineers, physiologists, trainees and technologists.

## EDUCATIONAL OBJECTIVES

Upon completion of this workshop, participants should be able to:

- Manage challenges in studying brain function with fMRI;
- Explain electrophysiological underpinnings of fMRI signal;
- Quantitatively interpret fMRI signals;
- Use new techniques available to accelerate the fMRI data acquisition;
- Improve spatial and temporal resolution using cutting-edge fMRI technologies;
- Utilize emerging techniques to measure the brain's metabolic rate and describe the pros and cons of each method;
- Interpret fMRI data on an individual basis;
- Promote new fMRI technologies in the neuroscience community;
- Obtain new research ideas by understanding how the neuroscience community views fMRI as a tool and what their burning needs are in terms of fMRI technologies;
- Promote fMRI in clinical use, including both clinical research and clinical practice; and
- Identify gaps in order for fMRI to make a greater impact in clinical environment.

## FOR MORE INFORMATION INCLUDING HOUSING & REGISTRATION, PLEASE VISIT:

[www.ismrm.org/workshops/fMRI14/](http://www.ismrm.org/workshops/fMRI14/)

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