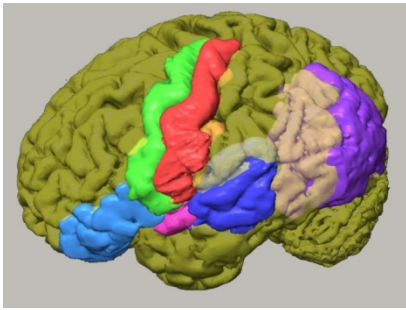


Advanced Neuroimaging: Fundamentals and Methods



Topics: Functional MRI (fMRI), Diffusion and DTI, Perfusion, DCE, and Spectroscopy

May 24th, 2014 8:30-6PM

Baldwin Auditorium

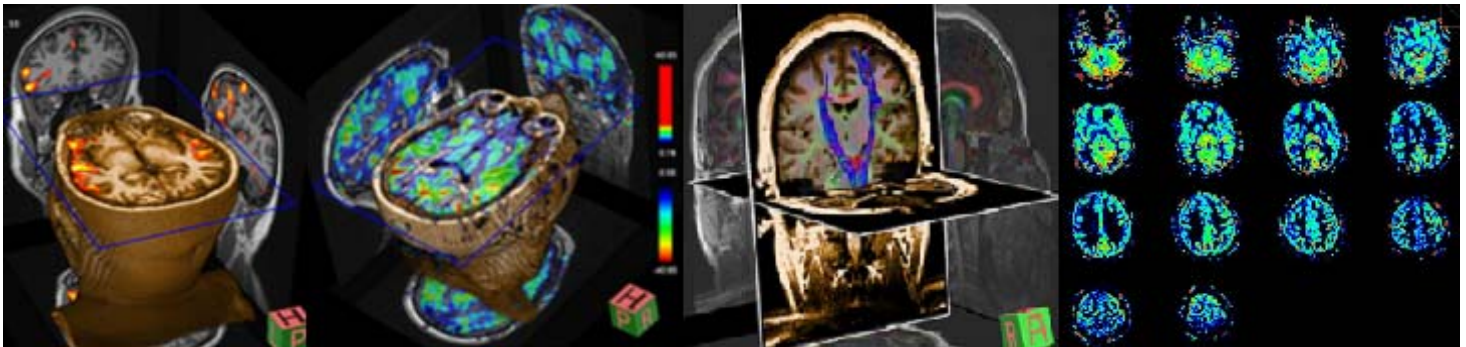
Northwestern University, Chicago IL

Course Director: Todd Parrish, PhD

To register and for more information: www.neuroimaging.northwestern.edu/seminar

Program Description:

This interesting all-day lecture series provides the fundamentals needed to understand advanced neuroimaging methods. Topics include **imaging physics**, **functional MRI** (acquisition, stimulus presentation, experiment design, data analysis, and interpretation), **perfusion imaging** (ASL, DSC, and DCE), **diffusion imaging** (analysis and tractography), and **MR spectroscopy**. Emphasis will be placed on the clinical application for all of the methods discussed.



Who should attend?

Any Physician, Neuroscientist, or MR Technologist looking to gain a strong foundation in advanced neuroimaging methods using MRI will benefit from this series.

The lectures focus on the physics, physiology, and neuroscience behind the methods to provide a clearer understanding of these powerful techniques. There will not be any training on specific post-processing software or scanner hardware used for advanced neuroimaging. Instead a general understanding will be the goal.

Seminar Fee: \$100 for Students; \$200 for PhD, MD, Tech. Discounted parking available.

Course Director:

Todd Parrish, PhD; Professor, Department of Radiology, Northwestern University

Faculty:

Darren Gitelman, MD; Associate Professor, Department of Neurology, Northwestern University

Jennie Chen, PhD; Assistant Professor, Department of Radiology, Northwestern University

Xue Wang, PhD; Assistant Professor, Department of Radiology, Northwestern University

Tom Gallagher, MD; Assistant Professor, Department of Radiology, Northwestern University

Schedule:

07:30 – 08:30

08:30 – 09:30

09:30 – 10:30

Break

10:45 – 11:45

Lunch on your own

12:30 – 01:30

01:30 – 02:30

Break

02:45 – 03:45

03:45 – 04:30

04:30 - 05:30

Registration and Coffee

Imaging physics and functional physiology – Todd Parrish

Neuro & Functional Anatomy & Connectivity – Darren Gitelman

fMRI Paradigm and Experimental Design – Darren Gitelman

Issues related to clinical fMRI – Todd Parrish

Perfusion Imaging – Jennie Chen

Diffusion Imaging – Xue Wang

Physics of MR spectroscopy – Todd Parrish

Putting it all into a Clinical Perspective – Tom Gallagher

Program Objectives

- To obtain an understanding of the underlying anatomy, physiology, and cognitive networks being assessed with the advanced neuroimaging methods.
- To gain general knowledge of experimental design, implementation of fMRI experiments, and analysis methods used in neuroscience research studies.
- Learn to conduct functional MRI, perfusion, diffusion and spectroscopy studies with knowledge of imaging physics, physiologic limitations, data analysis issues, and proper interpretation in the context of pathology
- To obtain an understanding of the underlying anatomy, physiology, and cognitive networks being assessed with the advanced neuroimaging methods.

