



# THE UNIVERSITY OF CHICAGO

Departments of Computer Science, Mathematics, and Statistics  
**SCIENTIFIC AND STATISTICAL COMPUTING SEMINAR**

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## **CARL-FREDRIK WESTIN**

Laboratory of Mathematics in Imaging  
Harvard Medical School

### **Computational Methods for Assessing Brain Structure and Connectivity from Diffusion MRI**

**THURSDAY, November 29, 2012, at 3:00 PM**  
112 Stevanovich Center, 5727 S. University Avenue

### **ABSTRACT**

The diffusion MRI (dMRI) technique has raised hopes in the neuroscience community for a better understanding of the white matter anatomy of the human brain. The hope is that the extension of available technology will aid in the diagnosis and subsequent treatment of disorders of the central nervous system and is likely to have a major impact on assessment of white matter pathologies (e.g., schizophrenia, multiple sclerosis), detection of stroke and trauma including traumatic brain swelling, diffuse axonal injury, and spinal trauma, as well as a large variety of brain tumors. In this talk I will review two recent developments in dMRI: 1) compressed sensing, and 2) double pulsed field gradient (double-PFG) dMRI, and discuss opportunities from these new technologies.

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#### **Organizers:**

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