

**University of Rochester  
Department of Electrical and Computer Engineering**

**Optical and Acoustic Magnetomotive Imaging: Contrast-Enhanced  
Biomedical Imaging on Multiple Length Scales**

**Prof. Amy Oldenburg**

**Wednesday, January 25, 2017  
12:00PM – 1:00PM  
Computer Studies Building (CSB) 209**

Abstract: Imaging technologies that rely upon coherent fields (e.g., ultrasound and optical coherence tomography, OCT) can be challenging to develop appropriate contrast agents for. However, the phase sensitivity of these techniques provides excellent sensitivity to nanoscale particle motion. Magnetomotive imaging takes advantage of this sensitivity by applying a time-varying magnetic gradient force to magnetic nanoparticle-based contrast agents during image acquisition. In this talk I will introduce the principles of magnetomotive imaging and its applications, including magnetomotive OCT and ultrasound systems that provide targeted imaging of breast cancer and thrombosis, respectively.

Bio: Amy Oldenburg received a B.S. in Applied Physics from the California Institute of Technology, and Ph.D. in Physics from the University of Illinois at Urbana-Champaign (UIUC). She performed postdoctoral research in biomedical optics at the Beckman Institute at UIUC, then moved to the University of North Carolina at Chapel Hill in 2008 to found the Coherence Imaging Laboratory, where she is currently an Associate Professor of Physics & Astronomy, developing novel optical and acoustic imaging technologies for biophysics and biomedicine.

Pizza and soda provided.