

The Department of
Mechanical Engineering
 PRESENTS

Teresa A. Murray, PhD

Assistant Professor of Biomedical Engineering
 Edmondson/Crump Endowed Professorship in Engineering
 Director, Integrated Neuroimaging Lab
 Center for Biomedical Engineering and Rehabilitation Sciences
 Louisiana Tech University, Ruston, LA

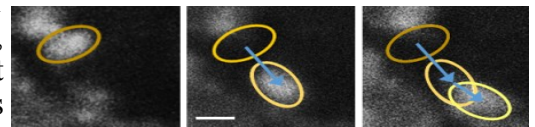


Friday, December 5, 2014
WCH Room 232
11:10-12:00PM

Development of tools for neuroscience research

Abstract:

Mice are frequently used in preclinical trials and for basic science, especially when studying the brain. Yet, studies that involve imaging the mouse brain must generally be conducted using slice preparations because it is an otherwise deep and dark place. Dr. Murray will talk about how her lab is overcoming this problem by using different materials and 3D printing to create a permanently implanted micro-lens system. They have coupled this with multiphoton microscopy to visualize newborn neurons migrating in the mouse brain. This talk will cover elements of materials, biology, optical design, and physics. Come to the talk and engage in a lively multidisciplinary discussion.



In vivo, time-lapse images of fluorescently labeled newborn cell migrating in a mouse brain. Scale bar 10 μ m (Murray and Kemp, unpublished)

About the Speaker:

Dr. Murray is the Director of the Integrated Neuroscience and Imaging Laboratory at Louisiana Tech University in Ruston, Louisiana. Her lab develops tools for neuroscience research and is also conducting studies on the type of stem cells that occur naturally in the brain. Dr. Murray received a BS in Bioengineering in 2002 and a PhD in Bioengineering from Arizona State University as an NSF Graduate Research Fellow. She then went on to a postdoctoral position at Yale University in the lab of Michael Levene. There she learned how to implant microlenses in mice for acute imaging, and she developed a way to overcome a serious optical aberration that degraded resolution in 3D images. She now leads a team of graduate researchers who have developed a permanently implantable lens system.

In addition to her work in the lab, Dr. Murray is the President of Alpha Eta Mu Beta, the National Biomedical Engineering Honor Society and serves on the Ethics Committee for the Biomedical Engineering Society (BMES). She has instituted several programs at the national level, including student educational sessions during the BMES Annual Meeting on ethics related to emerging technologies and on current public policy issues.

