BIOENGINEERING SEMINAR

Dr. Anne Taylor

Assistant Professor of Biomedical Engineering

UNC Neuroscience Center and Carolina Institute for Developmental Disabilities

March 20, 2017

3:00-4:00p.m.

Research Hall, 163

Biography:

Dr. Taylor received her PhD in Biomedical Engineering from UC Irvine and completed postdoctoral training in Neurobiology at Caltech. She is currently a faculty member in the Joint Department of Biomedical Engineering at UNC-Chapel Hill and NC State, and a primary faculty member in the UNC Neuroscience Center. Among other honors, she received a prestigious Sloan Research fellowship in Neuroscience to continue the pursuit of innovative research in the field of neuroscience.

"Novel *In Vitro* Microsystems for Cellular Neuroscience"

ABSTRACT:

Cultured neurons are widely used for drug screens, toxicity testing and basic research. Neurons exhibit unique polarized morphology, extending long axons to form synapses onto target cells. Advances are needed to scale up neuron-based screens and to develop models that more accurately reflect the *in vivo* neuronal environment. My lab uses micro-scale technologies to develop innovative cellular model systems to measure and manipulate neurons and their distal subcellular compartments. The development of neuronal model systems is an emerging focus area in part due to the increased availability of human induced pluripotent stem cells used to generate cultured neurons from patients, providing unprecedented access to human neurons for drug and toxicity screens. This talk will focus on recent work using micro-scale devices to investigate axon guidance, synapse development, injury and synaptic remodeling in scalable formats.