NJIT
New Jersey Institute of Technology

BME

Department of Biomedical Engineering
Graduate Seminar

Dr. Todd Mowery, Ph.D.

Assistant professor, Brain Health Institute and Robert Wood Johnson Medical School
Rutgers University

Subject: Using In Vitro and In Vivo approaches to drive drug discovery and treatment

Abstract:

At the industrial level, drug discovery involves complex high throughput systems that screen a vast number of compounds in a short period of time. At the laboratory level, we are typically limited to investigating one or two compounds at a time. The pay-off is that the systematic laboratory focused investigation of a drug can produce meaningful interpretations concerning the drug's mechanism of action and lead to a concrete rationale for neuroprotection. It can also spur further investigation for novel discovery and new intellectual property. Here I will present a scientific approach for investigating the efficacy of two FDA approved medications towards a treatment for developmental hearing loss. I will also demonstrate one way in which these results have allowed me to develop a novel gene therapy treatment approach using adeno-associated virus methods originally developed for use in optogenetics/chemogenetics.

Bio:

Todd Mowery is currently an Assistant Professor in the Brain Health Institute and Robert Wood Johnson Medical School at Rutgers University. He studies the influence of early developmental sensory experience on central neuraxis development, as well as, the effect of sensory over exposure and deprivation on adult plasticity. He uses a combination of in vitro and in vivo neurophysiological approaches and neuropharmacology to explore functional brain circuits in awake behaving animals. Recently, the Mowery Lab has integrated optogenetics and chemogenetics tools into these approaches allowing for the innovative use of adeno-associated virus technologies to ask questions about functional neuroanatomy in neurologically disordered populations.

Date and time: Friday, November 13th, 2020 11:30 PM
WebEx Link: https://njit.webex.com/njit/k2/j.php?MTID=tac5d237486ee4bf2b7f081c894ddd5e8