

University of Houston - Biomedical Engineering Seminar

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Via Zoom: <https://uofh.zoom.us/j/92470065206>

Translating Biomaterials for CNS Drug Delivery



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Abstract

Drug delivery to the brain and spinal cord remain challenging problems due to the presence of evolutionarily conserved barriers that restrict entry of circulating molecules into the central nervous system (CNS). Peripheral toxicity often limits drug dosing and efficacy, even for CNS targeted nanoparticles. Drug delivery scientists seeking to do translational work in the CNS are faced with urgent questions. What does it take to design nanoparticles for CNS drug delivery that can reach patients within the next decade? What drug delivery problems can we tackle that will directly impact clinical care today? Here, Dr. Sirianni will discuss the development of a nanomedicine platform for treatment of CNS disease, focusing on a roadmap for specific translation of polymeric nanoparticles in the field of pediatric neuro-oncology.

Biosketch

Dr. Rachael Sirianni received her PhD in Biomedical Engineering from Yale University in 2008 and completed a postdoctoral fellowship in Diagnostic Radiology at the Yale School of Medicine in 2011. Following her first faculty appointment at the Barrow Neurological Institute in Phoenix, Dr. Sirianni moved her laboratory to the University of Texas Health Science Center in 2018. Her research is focused on developing new drug delivery clinical trials for better treatment of pediatric brain tumors. Dr. Sirianni balances preclinical and translational work in close collaboration with clinical and industry partners. Her group's primary academic interests include formulation science, nanoparticle imaging/fate, tissue engineering, and therapeutic development in the central nervous system.