UNIVERSITY of HOUSTON | ENGINEERING

Department of Biomedical Engineering

Seminar

Enhancing Gene Delivery to the Lung

Tuesday, August 30, 2016
AH 108: 2:30-4:00PM

Speaker: Dr. Assem G. Ziady

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Abstract: Nucleic acid delivery by nanoparticles to the lung faces a number of challenges including the extracellular milieu and cellular barriers. To succeed in vivo these barriers must be overcome while maintaining desirable characteristics of nanoparticles such as safety and efficacy. We will discuss the basic research and clinical experience with these vectors in the lung as well as approaches to increasing success in vivo. We will discuss a number of these issues and approaches for overcoming them to enhance delivery.

Bio: Dr. Ziady received his undergraduate education at Boston College in biochemistry in 1993. He completed his graduate studies on cell physiology and received his Ph.D. degree in 1999 from Case Western Reserve University. Following his postdoctoral training at the Department of Pediatrics at Case Western Reserve University, he began a year-long externship at the Cleveland Clinic Proteomic Facility in early 2002. In 2003, Dr. Ziady joined the faculty at the Case Western Reserve University Department of Pediatrics as assistant professor. In 2011, Dr. Ziady joined the faculty at the Emory University Department of Pediatrics as an associate professor and served as the Associate Director

of Cystic Fibrosis Basic & Translational Research at Emory University. In 2014, Dr. Ziady was recruited by the CF program at Cincinnati Children's Hospital, where he joined the faculty as associate professor of pediatrics in November. Dr. Ziady's research has been supported by the State of Ohio, the Cystic Fibrosis Foundation, and the National Institutes of Health. His laboratory focuses on the differential regulation of Nrf2 signaling pathways in the inflammatory lung disease observed cystic fibrosis. Dr. Ziady's lab also has unique expertise in developing and characterizing DNA nanoparticles for nonviral gene delivery to the lung, liver, and brain, and proteomic analyses for biomarker discovery and the examination of systems biology of various tissues. He is a member of the CF Foundation's Biomarker Consortium and serves on a number of national and international committees. He is an inventor on 5 patents (2 USA, 2 EU, and 1 international) pertaining to DNA nanoparticles, and 1 provisional patent pertaining to modulation of inflammatory signaling. In the past 15 years, he has authored 33 manuscripts and book chapters, has an h-index of 21, and has been invited to present 42 talks on his work at national and international conferences and institutions.