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Lehigh Bioengineering Seminar Series presents:

Dr. Alyssa Panitch, PhD

**Professor & Chair, Biomedical Engineering,
Georgia Tech**

“Adapting natural drug delivery motifs for treating cancer and fibrotic diseases”



Friday, September 19, 2025

10:45 AM-11:45 AM

Whitaker Laboratory 203

<https://lehigh.zoom.us/j/99715872477>

Please contact the Bioengineering Department (inbioe@lehigh.edu) with any questions or comments.

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Abstract:

The body uses several forms of drug delivery to ensure timely, targeted delivery of biomolecules. For example, the extracellular matrix (ECM) contains sulfated glycosaminoglycans (GAGs) that transiently interact with several growth factors and cytokines allowing the ECM to serve as a drug depot for these molecules. Another form of drug delivery that was more recently discovered is the release of extracellular vesicles (EVs) from cells. The contents of the vesicles are encapsulated in a lipid bilayer or embedded in the bilayer. Our work has exploited both of these modes of drug delivery to deliver therapeutics to enhance local treatment of ductal carcinoma in situ (DCIS) and fibrotic diseases. This talk discusses work using sulfated polymeric nanoparticles to deliver positively charged anti-inflammatory peptides for the treatment of DCIS and the use of drug-loaded EVs to treat idiopathic pulmonary fibrosis.

Personal Bio:

Dr. Panitch received bachelor's degrees from Smith College in Biochemistry and from the University of Massachusetts-Amherst in Chemical Engineering. She completed her Ph.D. in Polymer Science and Engineering from the University of Massachusetts. After a postdoctoral fellowship at the Swiss Federal Institute of Technology (ETH) and University of Zurich. She started her first faculty position at Arizona State University in 1999 where she was awarded an NSF CAREER award. She is currently the chair of the Wallace H. Coulter Department of Biomedical Engineering at Emory University and Georgia Tech. She is a member and Fellow of the Biomedical Engineering Society, the American Institute for Medical and Biological Engineers (AIMBE) and the National Academy of Inventors. She also serves as an Editor for the Journal of Colloids and Surfaces B: Biointerfaces.

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