MECHANICAL & MATERIAL COLLOQUIUM

NanoBio: Nanomaterials for Biomedical Applications

by Needa Brown (University of Central Florida)

We know that nanoscale materials take on unique, size-dependent characteristics that differ from their bulk counterparts, however, given the complexity of parameters within the nanoscale (e.g. size, shape), very little is known about how modulating these factors can alter their biological interactions. A common challenge with translation of nanoparticles is the discrepancy between the predicted response and the experimental outcome. Rationale design of next-generation nanodrug systems relies on understanding the dynamic forces and molecular components that alter the physiochemical identity of our nanoparticle. Dr. Brown's research is centered around understanding and leveraging inherent material-biological interactions to design next-generation nanomaterial systems, specifically looking at shifts in tumor immunogenicity, combination efficacies, and new drug toxicology. In this presentation, Dr. Brown will present her ongoing work on designing bio/nanomaterials to circumvent drug delivery barriers and how material-biological interactions can be leveraged for better nanomaterial design.

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Dr. Brown joined the Department of Materials Science and Engineering as an Assistant Professor under the Infectious Disease Initiative. She completed her PhD in Biomedical Engineering from the University of Oklahoma and continued as a Post-doctoral Fellow in the Division of Medical Physics at Brigham and Women's Hospital/Harvard Medical School/Dana-Farber Cancer Institute, where she was promoted to Instructor. In September 2021, she moved to Northeastern University as an Assistant Teaching Professor, where she was the Founder and Director of a M.S. in Nanomedicine, served as Assistant Director of CaNCURE, and launched her CDMRP and NIH funded NanoBio research program.

Place:
EC 1114

Time:
2:00-3:15 PM
Nov. 19, 2024

For questions, comments and suggestions, contact Colloquium Organizers Dr. Benjamin Boesl (bboesl@fiu.edu) or Dr. Jiuhua Chen (chenj@fiu.edu)