



PL1: Leveraging the Natural Cellular and Biomolecular Interactions in Blood for the Design of Targeted, Anti-Inflammatory Particle Therapeutics

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Session Chair: Prof. Wen J. Li, City University of Hong Kong



TUESDAY
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TIME
09:00–09:45



VENUE
Wong Cheung Lo Hui Yuet Hall, 5/F Lau Ming Wai Academic Building

ABSTRACT

Vascular-targeted particle therapeutics offer the possibility of increased drug effectiveness while minimizing side effects often associated with systemic drug administration. Factors that influence the likelihood of targeted particle therapeutics reaching the vascular wall are the ability to identify 1) a disease-specific target, 2) the appropriate drug carrier type and geometry for efficient interaction with the vascular wall, and 3) a drug-carrier combination that allows for the desired release of the targeted therapeutics. Dr. Eniola Adefeso's work focuses on probing the role of particle geometry, material chemistry, and blood rheology/dynamics on the ability of vascular-targeted drug carriers to interact with the blood vessel wall - an important consideration that will control the effectiveness of drug targeting regardless of the targeted disease or delivered therapeutically. This presentation will highlight the carrier-blood cell interactions that affect drug carrier binding to the vascular wall and alter critical neutrophil functions in disease. In this talk, Dr. Eniola-Adefeso will present the material design parameters for optimal drug carriers' design for active and passive use in treating acute lung injury and other inflammatory diseases.

BIOGRAPHY

Lola Eniola-Adefeso is the 10th dean of the University of Illinois Chicago College of Engineering. A distinguished chemical and biomedical engineer, she brings over 25 years of experience advancing interdisciplinary research and inclusive excellence. She has published 70+ peer-reviewed papers, secured significant federal funding, and holds three patents, one of which is licensed to a biotech firm.

Dean Eniola-Adefeso serves as president of the American Institute for Medical and Biological Engineering and holds leadership roles with the American Institute of Chemical Engineers and the National Academies. She is a passionate advocate for diversity in engineering, having led the NextProf program and co-founded BME Women Faculty UNITE. She also helped organize the 2024 Forging Futures Together summit, connecting HBCU and Big 10+ engineering deans.

Before joining UIC, she was a professor at the University of Michigan, where she held the Vennema Endowed Professorship and was named a University Diversity and Social Transformation Professor. She earned her PhD from the University of Pennsylvania and is a Meyerhoff Scholar alumna of UMBC.