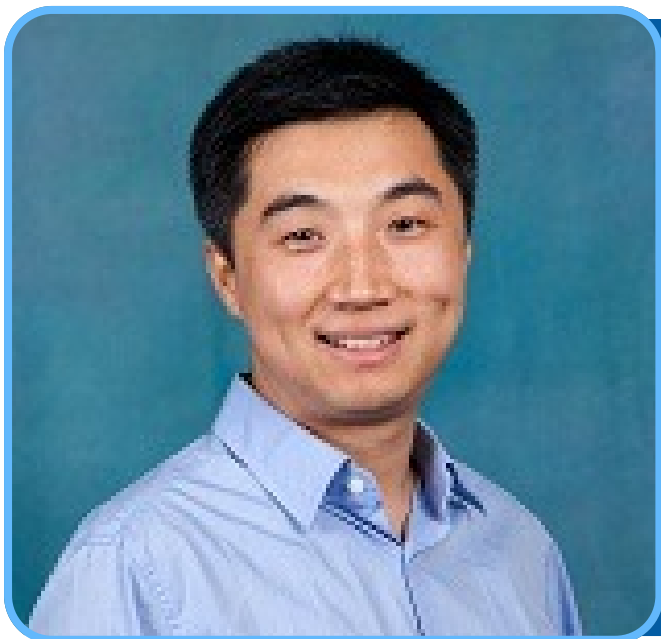




PL3: Targeted and Intracellular Delivery of Biologics

Xiaohu Gao
University of Washington

Session Chair: Prof. Kannie Wai Yan Chan, City University of Hong Kong



TUESDAY
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TIME
13:15–14:00



VENUE
LT-2, 4/F Yeung Kin Man Academic Building

ABSTRACT

Biologics including nucleic acids, peptides, and proteins are emerging as a powerful class of therapeutics capable of treating diseases once thought to be undruggable. Yet, their clinical translation remains limited by major delivery challenges, such as enzymatic degradation, poor cell membrane permeability, and off-target biodistribution. Recent advances in nanotechnology, biomaterials, and bioconjugation are beginning to address these obstacles, enabling precise tissue targeting and efficient intracellular delivery. In this talk, I will highlight new strategies for the targeted and cytosolic delivery of biologics, particularly RNAs and proteins. I will focus on emerging approaches that enable biologics to traverse cell membranes and achieve cytosolic access either by escaping or bypassing endocytosis without relying on traditional cationic carriers. These technologies open new opportunities for applications in molecular imaging, therapeutic delivery, drug discovery, and cell-based therapies.

BIOGRAPHY

Dr. Gao received his Ph.D. degree in chemistry from Indiana University-Bloomington (2004), and his postdoctoral training from the Department of Biomedical Engineering at Georgia Tech and the Winship Cancer Institute of Emory University. He is a full professor in the Department of Bioengineering. His research is focused on biomedical nanotechnology, molecular engineering, and molecular imaging. He is a recipient of the NSF CAREER Award, an elected fellow of the American Institute for Medical and Biological Engineering (AIMBE, class of 2013), and the Associate Editor of Bioconjugate Chemistry and a few others.