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Date Friday, January 30, 2026

Time 12:00 to 1:00 PM

Location CBB 108

Title *Antibody Conjugates for Precision Targeted Therapy*

Abstract: Antibody–drug conjugates (ADCs) have emerged as powerful targeted cancer therapies, yet their clinical impact is often constrained by limited payload diversity and stringent chemical design requirements. In this talk, I will present a new generation of ADCs that overcomes these limitations by enabling the precise delivery of a broader spectrum of therapeutic agents, including less toxic yet highly selective drugs. This modular design achieves robust tumor targeting, enhanced anti-tumor efficacy, and reduced systemic toxicity in pre-clinical models.

I will further discuss how rational molecular engineering across multiple length scales, from small-molecule chemistry to nanoscale architectures, enables precise control over conjugate structure and function. Looking ahead, our lab is developing integrative design strategies that expand the therapeutic window of targeted drug conjugates and establish a versatile platform for next-generation precision medicines with improved safety and clinical potential.

Bio: Bin Liu is an Assistant Professor in the Center for Nuclear Receptors and Cell Signaling and the Department of Biology and Biochemistry at the University of Houston. He also holds a joint appointment with the Department of Chemistry and is an active faculty member in the Materials Science and Engineering program and the Center of Excellence in Polymer Chemistry. He earned his Ph.D. in Chemistry from the University of Massachusetts Amherst and completed postdoctoral research at MIT. Dr. Liu’s research integrates chemistry, bioconjugation, protein engineering, and cancer immunotherapy to advance precision therapeutics. His work centers on the rational molecular design of next-generation antibody-based conjugates across multiple length scales, including small molecules, polymers, and nanoparticles, to enable targeted and effective therapies.

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