

# SLS & BME Research Seminar

## TITLE: THE UNFOLDING STORY OF MULTI-OMICS DISCOVERY FOR PRECISION TB DIAGNOSIS



**Date: 12 July 2023**

**Time: 11:00 AM – 12:00 Noon**

**Venue: SC L3**

**Professor Tony Hu**  
Biochemistry and Molecular  
Biology, Biomedical  
Engineering, and  
Microbiology at Tulane  
University

### Biography:

Professor Tony Hu is also the Weatherhead Presidential Chair in Biotechnology Innovation and founding Director of the Center for Intelligent Molecular Diagnostics at Tulane School of Medicine. He was elected to a fellow of American Institute of Medical and Biological Engineering (AIMBE) in March 2023. Dr. Hu's research focuses on engineered multi-omics, nanomedicine, mechanism-driven biomarker discovery and assay development.

### Abstract:

Precision diagnostic medicine occupies the frontline for the clinical campaign against disease. Historically, Tuberculosis is humanity's leading infectious nemesis, in terms of morbidity/mortality. Today, ~25% of the global population harbors latent Mycobacterium tuberculosis (Mtb) infections, with risks for re-activation and spread through close contact. Despite grave impacts, scant research evaluates mechanisms or biomarkers to advance insights into tuberculosis diagnosis, activation, and progression, severely limiting clinical patient management, and perpetuating dire outcomes. Addressing these challenges, my team employs a variety of cutting-edge platforms, including high-resolution mass spectrometry, nanomaterial probes, and CRISPR to elucidate ultrasensitive and quantitative readouts. Translating these advances, we envision simple point-of-care assays, deployed into resource-limited endemic regions, allowing rapid diagnosis and precision guidance for therapeutics, augmenting global pandemic eradication efforts.



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