



Department of
Mechanical Engineering
The University of Hong Kong



SEMINAR

Deciphering Human Disease through Tandem Repeats and Epigenetic Liquid Biopsy

Date: 13 November, 2025 (Thursday)
Time: 10:00 a.m.
Venue: Room 7-34 & 7-35, Haking Wong Building
HKU

Speaker: Professor Wei Li
School of Medicine
University of California, Irvine
USA

Abstract:

Tandem Repeat (TR) variations have long been overlooked in GWAS and medical diagnostics, despite their potential impact on human diseases. Our team recently developed the TR-Atlas (Cell, 2024), featuring ~1 million TRs across 340,000 individuals, and TR-xQTL (Nature Genetics, 2025), linking TR variations directly to gene regulation. Leveraging these resources, we are now uncovering novel TR genetic drivers across ~8,000 human rare and common diseases. Additionally, our advances in cfDNA methylation have led to patents and a liquid biopsy technique nearing FDA approval for the early detection of liver cancer. Together, this talk will highlight how these methodologies advance disease biology and precision medicine.

Biography:

Dr. Wei Li is the Grace B. Bell Endowed Chair and Professor of Bioinformatics at the University of California, Irvine, School of Medicine. His research bridges computational biology, epigenetics, RNA regulation, liquid biopsy, and human genetics, focusing on transforming genomics big data into actionable medical insights. Research from his lab has revealed novel mechanisms, biomarkers, and therapeutic targets across cancers, neurological, and metabolic diseases. Dr. Li has published over 200 peer-reviewed papers, cited ~80,000 times (H-index 104), and has mentored 14 trainees who have gone on to independent faculty positions at leading institutions including Harvard Medical School and Fred Hutch Cancer Center.

ALL INTERESTED ARE WELCOME

For further information, please contact Prof. X.B. Yin at 3910 2659.