THE GIS
SPEAKER SERIES

Genome Institute of Singapore
A*STAR GIS

The ecDNA Epigenome: from Permissive Chromatin to Actionable Vulnerability

Dr. Wang Guiping
Postdoctoral fellow
Stanford University School of Medicine

Host: Wan Yue

Monday 1 December 2025
11.00am – 12.00pm

GIS L2 – Seminar Room
60 Biopolis Street, Genome, Singapore 138672

About The Speaker

Dr. Guiping Wang earned her PhD in Chemistry from Harvard University and is currently a Postdoctoral Fellow at the Stanford University School of Medicine. She develops and applies cutting-edge imaging and sequencing methods to understand the fundamental principles linking molecular-level organization to cellular functions and pathological states.

About The Seminar

Extrachromosomal DNA (ecDNA) is a key driver of oncogene amplification and therapeutic resistance in many aggressive cancers. Despite the clinical importance, its actionable vulnerabilities have remained elusive. In this talk, I will share our recent discovery of a key vulnerability in ecDNA-driven tumors: a heightened replication stress caused by pervasive transcription on ecDNA. We leveraged this finding to develop a novel synthetic lethal strategy to overcome drug resistance. By combining CHK1 inhibition with a targeted therapy, we achieved sustained tumor regression in a mouse tumor model, advancing a new therapeutic strategy for treating ecDNA-driven cancers.