

DECONSTRUCT AND REPROGRAM RNA LIFE CYCLE

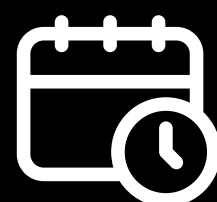
About the speaker

Xiao Wang is a core institute member of the Broad Institute of MIT and Harvard and an assistant professor in the Department of Chemistry at MIT. She started her lab in 2019 to develop and apply new chemical, biophysical, and genomic tools to better understand tissue function and dysfunction at the molecular level. Xiao conducted postdoctoral research at Stanford University with Prof. Karl Deisseroth. She received her B.S. in Chemistry and Molecular Engineering from Peking University in 2010 and Ph.D. in Chemistry from the University of Chicago in 2015 mentored by Prof. Chuan He.



Dr. Xiao Wang

Core Institute Member; Assistant Professor
Broad Institute of MIT and Harvard; MIT
Department of Chemistry



Tuesday 18 June 2024
10am (SGT , GMT+8)



Via Zoom



About the seminar

The intricate network of cell functions relies on gene expression and regulation programs. To deepen our understanding of RNA-centered gene regulation, we need a panoramic view of the whole mRNA life cycle directly within intact cells and tissues, encompassing synthesis, processing, transport, and translation, and degradation, which is currently obscured by limited analytical tools. In my presentation, I will first introduce our tool development of novel spatiotemporal measurements at unprecedented resolution and scale using in situ sequencing to probe and perturb the intricate dynamics of the RNA life cycle. Beyond mapping the RNA life cycle in health and disease, I will also discuss how we have translated our knowledge of post-transcriptional gene regulation principles into next-generation RNA vectors and drugs by expanding and engineering the alphabet, structure, and topology of synthetic RNAs with unnatural chemical modifications.