

SMS Spring 2023 Seminar Series

Friday Mar 24 | 3pm | Biodesign Auditorium

Gene Regulation Through Spatial and Temporal Interactions Between RNA and RNA Binding Proteins

RNA and RNA binding proteins (RBPs) are key players in gene expression and regulation in all living systems, contributing to many essential cellular activities. However, the precise mechanisms underlying the RNA-RBP interactions and their functions in gene expression/regulation are often complicated by the complex cellular environment, including their intracellular localizations, the presence of competing binding partners, the crosstalk with other cellular pathways. I will share our recent results from two biological systems where spatial and temporal interactions between RNA and RBP collectively shape the gene expression and regulation outcome. The first system is the bacterial small regulatory RNA (sRNA), which regulates gene expression during stress response to provide survival benefit. The second system is the eukaryotic nuclear speckle, which represents one type of the membraneless bodies in the nucleus and is involved in transcriptional regulation and RNA processing.

Jingyi Fei, PhD

Assistant Professor, University of Chicago

Dr. Jingyi Fei is an Assistant Professor of Biochemistry and Molecular Biology at The University of Chicago. She obtained her Bachelor's degree in chemical physics from the University of Science and Technology of China, and received her Ph.D. in chemistry from Columbia University. She was then a postdoctoral fellow at the NSF funded Center for the Physics of Living Cells at the University of Illinois Urbana-Champaign. Dr. Fei's research lies at the interface of chemistry, physics and biology, with focus to understand the mechanisms by which RNAs and RNA binding proteins mediate gene expression and regulation in both bacterial and eukaryotic systems. In addition to the fundamental biological questions, her lab is also interested in the development of new labeling, imaging and data analysis methods. Dr. Fei is an awardee of the Searle Scholars and the NIH Director's New Innovator Award.

