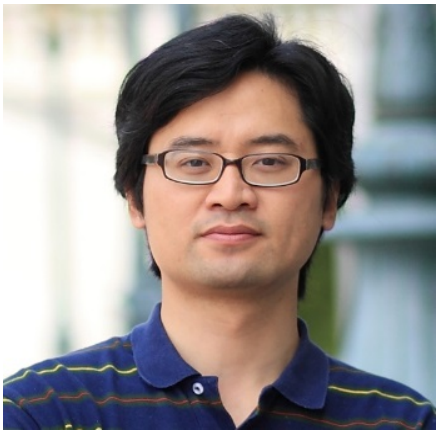
NUS National University of Singapore | Department of Biological Sciences, Faculty of Science

BIOLOGY COLLOQUIUM

Friday, 8 Nov 2019 | 4pm | DBS Conference Room 1

Hosted by Dr Chae Eunyoung

Phase separation-mediated actin assembly through IDR



By **Miao Yansong**

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Liquid-liquid phase separation (LLPS) is a universal biological strategy to form membraneless organelle on-demand in space and time. A rapidly accumulating body of evidence showed that intrinsically disordered region (IDR) is a major constituent in forming macromolecular condensation and LLPS. During cell signaling, IDR tunes the protein conformation and interactions, which could change the physicochemical properties of biomolecules and undergo LLPS by forming nano-/micro-droplets. Multiple actin-binding proteins and endocytic proteins contain a substantial percentage of IDRs. Actin cytoskeleton remodels rapidly in response to intracellular or extracellular cues, which then coordinates the processes in cell development or defense mechanism. The mechanisms by which the actin assembly is fine-tuned dynamically using IDRs remains elusive. I will discuss our on-going research about IDR- and LLPS-mediated actin filament assembly during immune-signaling and stress-adaptation.

Dr. Miao received his B.S. from Zhejiang University, China. Dr. Miao received Mphil and PhD degree from The Chinese University of Hong Kong, where Dr. Miao studied protein sorting and membrane trafficking in Liwen Jiang Lab. In 2010, Dr. Miao joined David Drubin lab at the University of California, Berkley, with support from the Human Frontier Science Program (HFSP)-Postdoc Fellowship. Dr. Miao studied the actin cytoskeleton regulation in budding yeast at UC Berkeley. In 2015, Dr. Miao was appointed as Nanyang Assistant Professor at NTU Singapore. Dr. Miao Lab interests in the fundamental mechanisms about phase-separation mediated dynamic actin assembly during fungal growth and plant immunity using IDR.

References: (*Corresponding author)

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