

SEMINAR

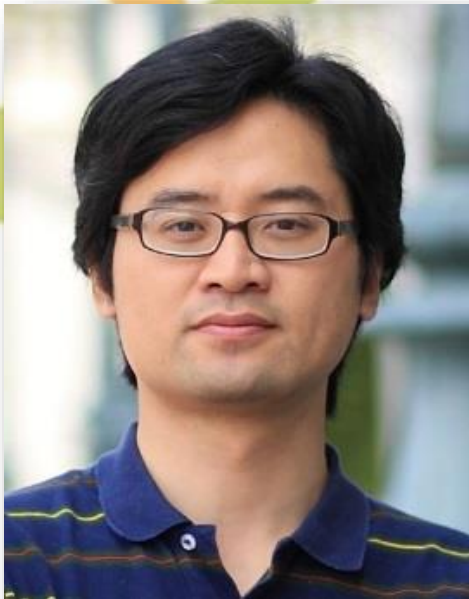
ALL ARE WELCOME

17 May 2019 (Friday), 4pm
The Auditorium (Level 1)

Hosted by: Dr Gregory JEDD

Molecular Condensation-mediated Actin Assembly and Signaling in Plants

Dr MIAO Yansong
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Dr Miao completed his B.S. from Zhejiang University China and PhD degree (2009) from The Chinese University of Hong Kong where he studied the protein and membrane trafficking in plant. In 2010, he joined David Drubin lab at University of California, Berkley with HFSP-Postdoc Fellowship and studied the actin regulation in yeast. Dr Miao Joined NTU as Nanyang Assistant Professor in 2015.

Underneath the plasma membrane, actin cytoskeleton plays essential roles in mediating the response to external cues for signal transductions various physiological and pathological states rapidly. A particularly interesting phenomenon is that both endocytic proteins and actin-binding-proteins are highly enriched of the intrinsically disordered region (IDR), which is constituent of macromolecular condensation and phase separation. The inter- and intra-molecular interactions of intrinsically disordered proteins (IDPs) highly regulate the physical properties and biochemical activities of the protein complex. The underlying mechanisms by which the actin cytoskeleton responds to different signal cue to reorganize actin networks through IDRs remains elusive. In addition, how actin cytoskeleton regulates surface proteins in receiving external signals or molecules are largely unclear in cell development, stress adaptation, or cell defense mechanism. I will discuss a few on-going research in studying plant development and defense mechanisms through molecular condensation-regulated actin assembly and plant signaling.

In this seminar, I will review major findings in these initial studies and discuss how the progress in these areas led us to new questions.

Recent Publications:

1. He Sun, Zhu Qiao, Khi Pin Chua, Alma Tursic, Xu Liu, Yong-Gui Gao, Yuguang Mu, Xingliang Hou, **Yansong Miao*** (2018) Profilin negatively regulates formin-mediated actin assembly to modulate PAMP-triggered plant immunity. *Current Biology* 28, 1882-1895 e7 (2018)
2. **Yansong Miao***, Tipakornsawapak Teepiyunu, Liangzhen Zheng, Yuguang Mu, Eric Lewellyn (2018). Phospho-regulation of intrinsically disordered proteins for actin assembly and endocytosis. *The FEBS Journal*
3. **Yansong Miao***, Xuemei Han, Liangzhen Zheng, Ying Xie, Yuguang Mu, John R. Yates, III, and David G. Drubin* (2016) Fimbrin phosphorylation by metaphase Cdk1 regulates actin cable dynamics in budding yeast, *Nature Communications* 7: 11265.