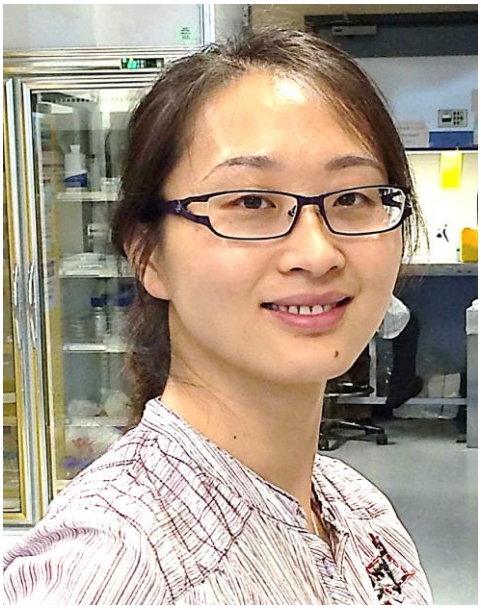
NUS National University of Singapore | Department of Biological Sciences, Faculty of Science

SEMINAR

Wed, 10 July 2019 | 10am | DBS Conference Room 1

Hosted by A/P Liou Yih Cherng

Function and regulation of ER-PM contacts



By **Zhang Dan**

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The cortical endoplasmic reticulum (ER), an elaborate network of tubules and cisternae, establishes contact sites with the plasma membrane (PM) through tethering machinery involving a set of conserved integral ER proteins. Using fission yeast, we have revealed physical roles of ER-PM contacts in modulating contractile ring assembly and polarized exocytosis. Our results also imply that suitable amount and strength of ER-PM contacts are necessary for proper cortical events and hence cell fitness. We further identified key factors in controlling such plasticity of ER-PM contacts, including abundance of tethers, ER remodeling capacity and unexpectedly PM furrows. We confirmed that caveolae-like PM invaginations are responsive to PM tension and establish close contacts with the cortical ER through electrostatic interactions with the major ER-PM tether. We thus propose a cellular strategy of coordinating activities between associated membranes by deploying sensory structures at membrane contact sites.

Artwork by Ann Nee, DBS, NUS