NANYANG TECHNOLOGICAL UNIVERSITY

School of Biological Sciences

Seminar Announcement

Good contractions: regulation of actomyosin contractility in the *C. elegans* spermatheca and zygote

Date: 29 August 2016 Monday

Time: 2:30pm to 3:30pm

Venue: SBS-01n-23 Classroom 3

Host: A/Prof Koh Cheng Gee



Speaker: Asst Professor. Ronen Zaidel-Bar
Department of Biomedical Engineering and Mechanobiology Institute, NUS

Abstract

Actomyosin contractility is the driving force for many cell and tissue level processes, among them polarization, cytokinesis, and tube constriction. As such, actomyosin contractility must be tightly regulated in space and time. The involvement Rho GTPases upstream of actin regulators and myosin kinases is well known from in vitro work. However, the regulation of contractility in vivo is still poorly understood. We are using the nematode *C. elegans* to study the regulation of actomyosin in live animals. In my talk I will discuss two stories: 1. How stretching of the spermtheca by an incoming oocyte feedbacks to the regulation of its contraction by modulating the activity of a RhoGAP and a RhoGEF. 2. How connectivity of the actomyosin cortex, afforded by the actin bundling protein plastin, dramatically affects its ability to generate large scale contractility, as needed for polarization and cytokinesis of the zygote.