

Tues, 16 May 2017 | 2pm | DBS Conference Room 1

Hosted by Prof Thorsten Wohland

# Mechanical forces behind tissue morphogenesis



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Throughout development, tissues undergo complex morphological changes. There is growing evidence showing that mechanical force is not only the major factor to drive the epithelia morphogenesis, but also one of the factors to control organization, growth, and function of tissue and organs. We are interested in two particular aspects of tissue dynamics, how cell mechanics that evolve over time and in space emerge as large-scale tissue dynamics (as an intrinsic force), and how cell mechanics arises from tissue dynamics and feedback to cellular and molecular function (as an extrinsic force). To study the mechanical interactions between cells within a tissue, we detect and extract the mechanical signatures (e.g., cell adhesion, cytoskeleton, and mechanical forces) from a tissue with an interdisciplinary approach that combines imaging, quantitative analysis, gene manipulation, and biophysical manipulation tools (e.g., laser ablation). In this presentation, I am going to summarize our recent findings regarding the mechanical force behind tissue morphogenesis, including the force generated through the active mechanical role of programmed cell death, apoptosis.