The Hippo Pathway in Organ Growth Control

Summary
Organ growth is fundamental to animal development, yet remarkably little is known about the mechanisms that regulate organ size. We are using Drosophila to study the Hippo signaling pathway, a recently discovered tumor suppressor pathway that plays a key role in the regulation of organ size. The core of the Hippo pathway comprises a kinase cascade that is regulated by multiple upstream inputs including the transmembrane receptor Fat and Crumbs, cell polarity determinants such as Scribble and aPKC, the cell adhesion receptor E-cadherin, and the actin cytoskeleton. Although many upstream regulators have been identified, how these contribute to organ growth control and how they cross-talk with each other is still poorly understood. I will present recent data on our analysis of how cell adhesion and cell polarity interact to regulate the Hippo pathway.