Colloquium

Institute Colloquium: Biomechanics of tissue morphogenesis: from local to global scal

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Host:

Tissues exhibit a remarkable dual property of robustness and plasticity.
This relies on unique mechanical properties of the cell cortex and on adhesive interactions between cells. Our group seeks to understand the fundamental molecular mechanisms responsible for this property. This is essential to understand morphogenesis of developing embryos and organs, and is severely affected in a number of diseases, in particular cancer progression.
To that end we develop a range of approaches, from the genetic and pharmacological perturbations of molecular components, the quantitative imaging of proteins using a variety of photonic methods, probing of the physical properties of cells within intact tissues, and predictive computational modelling of morphogenesis at different scales (molecular to tissue scales).
I will present our current research characterizing how adhesion and cortical tension regulate the dynamic remodelling of cell contacts in the primary epithelium of Drosophila embryos. I will first focus on the regulation of tensile activity driving cell shape changes. I will also address how E-cadherin-actin interactions control force transmission at cell interfaces.
Tissue growth imposes challenges to tissue cohesion. In a second part I will report on our studies of the interplay between tissue growth and tissue mechanics during morphogenesis

Monday, March 19, 2012 04:30pm - 05:30pm
Raiffeisen Lecture Hall, Central Building

This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station.
Please find a schedule of the ISTA Shuttle on our webpage:
https://ista.ac.at/en/campus/how-to-get-here/ The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.