

FASSBERG

SEMINAR SERIES



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Design principles of tissue organization

Many multicellular organisms are composed of cells and tissues with identical genomes but different properties and functions. They all develop from one cell to form multicellular structures of astounding complexity. During development, in a series of spatio-temporal coordinated steps, cells differentiate into different cell types and establish tissue-scale architectures and functions. Throughout life, continuous tissue renewal and regeneration is required for tissue homeostasis, which also requires fine-tuned spatio-temporal coordination of cells. How cellular interactions generate the specific contexts and spatio-temporal coordination underlying development, and regeneration is a key question in biology and we specifically investigate what are the molecular and physical mechanisms that allow a cell, in a tissue, to sense its complex environment, to take individual coordinated decisions. And what are the design principles governing coordinated cellular behaviour during tissue organization? I will discuss two main projects:

- (1) The molecular mechanisms of intestinal organoid self-organization and the role of cell-to-cell variability in populations of differentiating cells.
- (2) Different in vitro self-organizing systems, such as gastruloids to reveal general design principles of self-organization.

Host: Melina Schuh



Wednesday / 09.12.2020 / 11:00

zoom access data will be mailed before the seminar!

