BIOENGINEERING SEMINAR

“Imaging Spatio-Temporal Signaling Programs Regulating Cell Fate and Cell Morphogenesis“

Tuesday, November 28, 2017, 12h15
EPFL – room AI 1 153

Prof. Olivier Pertz
Institute of Cell Biology, University of Bern (CH)

host: Prof. Bart Deplancke

Abstract

We study spatio-temporal dynamics of signaling regulating cell morphogenesis and cell fate decision at the single cell level. A combination of live cell imaging, microfabrication, computer vision, and mathematical modelling allows us to dissect novel properties of signaling networks, not accessible using classic biochemical/cell biological techniques. I will discuss how robust directional cell migration emerges using a self-organized cytoskeletal module that precisely positions signaling activities in single cells. I will also discuss how one can dissect signaling network architectures that produce dynamic signaling states regulating cell fate decisions such as proliferation or differentiation. This offers new insight to reprogram cell fate decisions at will.

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