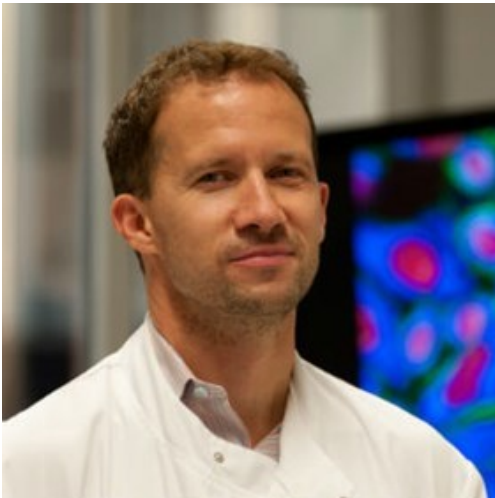


Seminar 2017

Using Image-omics to understand the relationship between cell shape and transcription in cancer cells



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London

In order to execute diverse cellular behaviors, including proliferation, migration, and differentiation, as well as perform tissue-specific tasks, cells must adopt different shapes. Cell shape is the emergent behavior of a system capable of integrating mechanical, geometric, and soluble cues. The system underpinning cell morphogenesis is largely comprised of biochemical networks that act to sense these cues, and convert them into chemical signals that regulate transcription factor activation. By controlling gene expression, transcription factors can alter shape, and generate feedback on the network. Thus through the actions of regulatory networks cell shape orchestrates transcription, and in turn transcription influences cell shape. Because cell morphogenesis is vital to development and homeostasis, and often dysregulated during the progression of many diseases including cancer, obtaining a quantitative understanding of the regulatory networks that couple cell shape to transcription is warranted, and will open up therapeutic avenues.

Full abstract: <http://laufercenter.stonybrook.edu/seminar>

Dynamical Cell Systems Team uses genomic approaches and computational modelling to understand how complex biochemical signalling networks are 'rewired' during the development of cancer.

Friday March 31, 2017

2:30 PM Laufer Center 101

Host: Eric Brouzes

Refreshments: Hub 110 after seminar