University of Stuttgart

Stuttgart Research Center Systems Biology (SRCSB)

Systems Biology Seminar Talk

„Modelling MAPK-driven cell states in colon cancer “

Prof. Dr. Nils Blüthgen

Computational Modelling in Medecine
Charite - Universitätsmedizin Berlin

Wednesday
May 04, 2022
10 a.m. – 11 a.m.

Lecture Hall 0.106
Allmandring 31
Stuttgart

Abstract:

The intestinal epithelium is a hierarchically organised tissue, where cell states are orchestrated by localised signals, evoking Wnt, MAPK and SMAD signalling. In colon cancer, these pathways are altered in most tumours by mutations. To investigate how the mutations that modulate these pathways impinge on the tissue organisation, and to understand if tumours retain organising principles of the intestinal epithelium, we use single cell methods (scRNA-seq, CyTOF) on organoid models after diverse perturbations, and model the signalling states and cell trajectories. Using patient-tissues we confirm cellular trajectories that we find in organoid cultures.

CV:

- from 2020 Spokesperson of the DFG Research Training Group CompCancer
- from 2015 Deputy spokesperson of the Integrative Research Institute for the Life Sciences, HU Berlin
- from 2014 Professor of Computational Modelling in Medicine, Charite and Humboldt University Berlin
- 2011-2013 Junior professor for Medical Systems Biology, Charite
- 2008-2010 Junior Group Leader at Institute of Pathology, Charite and Institute for Theoretical Biology, Humboldt University Berlin
- 2009-2010 Honorary Lecturer at the School of Translational Medicine, The University of Manchester
- 2007-2008 Research Fellow at the Manchester Interdisciplinary Biocentre, Systems Biology group of the School of Chemical Engineering and Analytical Sciences, University of Manchester
- 2005-2007 PostDoc at Institute of Molecular Neuroscience and Bernstein Centre for Computational Neuroscience, FU Berlin
- 2002-2005 PhD, Theoretical Biology, HU Berlin
- 2001-2002 Diploma Thesis at Institute for Theoretical Biology, HU Berlin
- 1996-2002 Undergradute studies of physics at Technical University Berlin and University Heidelberg

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