IbSB 2018 Program

Thursday 6 September

12.00 Registration opens

12.00 Lunch

13.00 Opening

Session I: Quantitative bioimage analysis

13.10-13.55 **Michael Unser**, EPFL Lausanne, Switzerland

Steerable detectors for bioimage analysis

13.55-14.25 **Pekka Ruusuvuori & Leena Latonen**, University of Tampere & Tampere University of Technology, Finland

3D reconstruction and quantitative analysis of histology for prostate cancer

14.25-14.45 **Ruman Gerst**, Friedrich Schiller University Jena, Germany

Towards an open high-performance platform for fully-automated analysis of whole organ light-sheet fluorescence microscopy data

14.45-15.10 Coffee break

Session II: Image-based models of cell connectivity and dynamics

15.10-15.55 **Pavel Tomancak**, Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany

Tissue morphogenesis in insects: a comparative and multidisciplinary approach

15.55-16.15 **Torsten Paul**, University of Würzburg, Germany

A framework for spatially embedded network growth

16.15-16.35 **Michael Kücken**, Technical University Dresden, Germany

Multi-scale modeling of planar cell polarity dynamics in planarians

16.35-17.00 Coffee break

Session III: Machine learning assisted bioimage analysis

17.00-17.30 **Carl-Magnus Svensson & Oksana Svydkiv**, Leibniz Institute for Natural Product Research and Infection Biology, Jena, Germany

Coding of experimental conditions in microfluidic droplet assays using colored beads and machine learning supported image analysis

17.30-17.50 **Benjamin Schmid**, Optical Imaging Centre Erlangen, Germany

Learning based interactive cell-counting of fluorescent labeled mouse tooth pulp nociceptors

17.50-18.10 **Maria Theiss**, University of Würzburg, Germany

Automated classification of synaptic vesicles in electron tomograms of C. elegans using machine learning

18.10 Poster session and dinner

Friday 7 September

Session IV: Growth and interactions of cell populations

09.00-09.45 **Dagmar Iber**, ETH Zurich, Switzerland

From Networks to Function - Image-Based Models of Organogenesis

09.45-10.05 **Valerio Lupperger**, Helmholtz Zentrum München, Germany

Increased re-division rate induces weak spatial correlations of NSC divisions in the zebrafish brain

10.05-10.25 **Raimo Hartmann**, Max Planck Institute for Terrestrial Microbiology, Marburg, Germany

Physical determinants of Vibrio cholerae biofilm architectures at the single cell level

10.25-10.50 Coffee break

Session V: Medical image-based systems biology

10.50-11.35 **Jari Hyttinen**, Tampere University of Technology, Tampere, Finland

Image based assessment of human stem cell derived cardiomyocytes – from in-vitro to in-silico

11.35-12.05 **Pranita Pradhan & Melina Yarbakht**, Friedrich Schiller University Jena, Germany

Non-linear multimodal imaging of early septic liver injury

12.05-13.00 Lunch break

Session VI: Image-based spatial models of cell-cell interactions

13.00-13.45 **Matthias Weiss**, University of Bayreuth, Germany

Illuminating physical cues for the early embryogenesis of a simple model organism

13.45-14.05 **Anastasios Siokis**, Helmholtz Centre for Infection Research, Braunschweig, Germany

An agent-based model for the F-actin driven spatial organization of the immunological synapse

14.05-14.25 **Hannah Jeckel**, Max Planck Institute for Terrestrial Microbiology, Marburg, Germany

Learning the space-time phase diagram of bacterial swarm expansion

14.25-14.45 **Claudia Sichting**, Friedrich Schiller University Jena, Germany

Simulation of virtual phagocytosis assays with alveolar macrophages and Aspergillus fumigatus conidia reveals immune reaction rates

14.45 Closing