

*Thursday, Jun 23, 2022*

**11:30 Registration opens (with small lunch)**

**12:45–13:00 Welcome**

*Session 1: Statistical modeling and machine learning*

**13:00–13:40 Keynote lecture: Harald Binder**  
*Deep Generative Models for Single-Cell Sequencing Data*

**13:40–14:00** Anne-Christin Hauschild  
*Evaluating Federated Random Forest Coping with Limited Clinical and Biomedical Data*

**14:00–14:20** Lisa-Marie Bente  
*Deep Learning for the Prediction of Macrophage Polarization Status*

**14:20–14:40** Franziska Görtler  
*Gene Signature Calculation for Pathway Activity Prediction with Loss-Function Learning Methods*

**14:40–15:00** Marian Schön  
*DMC - an R package for Deconvolution Model Comparison*

**15:00–15:10 Election:** (a) speaker of the GMDS/IBS working group “Mathematical Models in Medicine and Biology” and (b) speaker of the GMDS/IBS working group “Statistical Methods in Bioinformatics”.

**15:10–16:20 Coffee break & poster session I**

*Session 2: Disease modeling and open topics*

**16:20–16:40** Nicole Radde  
*Quasi-Entropy Closure: A Fast and Reliable Approach to Close the Moment Equations of the Chemical Master Equation*

**16:40–17:00** Janne Pott  
*Genetically regulated gene expression and proteins revealed discordant effects*

**17:00–17:20** Liza Vinhoven  
*Systems medicine modelling in Cystic Fibrosis to predict possible drug targets and active compound combinations*

**17:20–17:40** Paul Rudolph  
*DynaCoSys: Dynamic model of the complement system to understand pathogen immune evasion*

**17:40–18:00** Theresa Kraft  
*Patient-specific identification of genome-wide methylation differences between intra- and extracranial melanoma metastases using Hidden Markov Models*

**18:30 Conference dinner at the Bullerjahn**

*Friday 24, 2022*

*Session 3: COVID-19*

**8:30–9:10 Keynote lecture: Viola Priesemann**

*Inferring and Mitigating the Spread of COVID-19*

**9:10–9:30** Sandra Timme

*A state based model and feasibility study to design an optimal COVID-19 surveillance protocol for child care facilities*

**9:30–9:50** Manuel Lentzen

*Risk Modelling of Severe COVID-19 Disease Progression Using Transformer-Based Models*

**9:50–10:10** Daniel Wolfram

*Collaborative nowcasting of COVID-19 hospitalization incidences*

**10:10–11:30 Coffee break & poster session II**

*Session 4: Decision support systems*

**11:30–12:10 Keynote lecture: Stefan Bonn**

*Bringing deep neural networks to the clinic: Precision, robustness, and interpretability*

**12:10–12:30** Thomas Linden

*Survival Multi-Modal Neural Ordinary Differential Equations for Mortality Prediction of Patients with Severe Lung Disease*

**12:30–12:50** Gunther Glehr

*Neural networks to predict clinical events from cytometry data*

**13:10–13:30** Roman Schefzik

*Using a prospective algorithm for systemic inflammatory response syndrome criteria to predict and diagnose sepsis in intensive care medicine*

**13:30–13:50** Helena Zacharias

*A Predictive Model for Progression of CKD to Kidney Failure Based on Routine Laboratory Tests*

**13:50–14:00 Closing remarks & poster award**