

# Mathematical Modeling, Simulation, and Optimization in the Pharmaceutical Industry

Interdisciplinary Center for Scientific Computing (IWR) · Mathematikon · Heidelberg University · June 14 & 15, 2018

## THURSDAY – JUNE 14, 2018

- 12:00** **Arrival, registration, lunch**
- 13:00** **Address of welcome**  
Hans Georg Bock  
IWR, Heidelberg University
- 13:15** **Mathematical challenges en route from lab to clinics – fostering the drug R&D process by predictive modelling and simulation**  
Andreas Schuppert  
RWTH Aachen
- 13:45** **Towards data driven semi-personalized medicine: Response prediction from high-dimensional small diagnostic data with convex maximization**  
Peter Gritzmann  
galor GmbH
- 14:15** **Advanced methods for dynamical processes: state of the art and new challenges**  
Andreas Sommer  
IWR, Heidelberg University
- 14:45** **Coffee break**  
Group photo
- 15:15** **Challenges for mathematical simulation and optimization in the pharmaceutical industry – a pharmacometrics perspective**  
Sven Stodtmann  
AbbVie Deutschland GmbH & Co. KG
- 15:45** **Automatic optimization of predictive bioactivity models**  
Paul Czodrowski  
Merck KGaA
- 16:15** **Mathematical methods in the development of diagnostic point-of-care tests**  
Anna Osberghaus  
Roche Diagnostics
- 16:45** **t.b.a.**  
Tim Conrad  
Computational Proteomics, FU Berlin
- 17:15** **Coffee Break**
- 17:30** **Plenary Discussion**
- 19:00** **Dinner at Brauhaus Vetter**  
Steingasse 9, 69117 Heidelberg

## FRIDAY – JUNE 15, 2018

- 08:30** **Morning coffee**
- 09:00** **Mechanistic network models in systems pharmacology: optimisation and simulation**  
Julio Saez-Rodriguez  
Computational Biomedicine, Heidelberg University
- 09:30** **Towards a computation-based bioprocess development: taking the hurdle of parameter estimation by model based DoE**  
Peter Neubauer  
Bioprocess Engineering, TU Berlin
- 10:00** **Smart and risk-based purification process development for biopharmaceuticals**  
Tobias Hahn  
GoSilico GmbH
- 10:30** **Coffee Break**
- 11:00** **Modeling and optimization of complex systems with sparse data**  
Lukas Hebing  
Bayer AG
- 11:30** **Causes and challenges of uncertain models in optimization**  
Jennifer Puschke  
TLK Energy GmbH
- 12:00** **Closing discussion**  
Farewell