



Agenda Challenge Workshop

„Mathematics for Health Care“

Wednesday, 7.12.2011

9:15 Arrival & Registration, Coffee

10:00 Welcome (Hans Georg Bock, Andreas Schuppert, Klaus van Ackern)

Funding of Systems Biology in Germany

10:15 Bernhard Gillessen – *Funding of Systems Biology in Germany*

Mathematical Challenges arising from Clinical Applications (Andreas Schuppert)

10:30 Manfred Thiel – *Predictive data mining for new prognostic models in intensive care*

11:00 Steffen Koschmieder - *Systems Biology Approaches in Hematology and Oncology: basic questions and clinical scenarios*

11:30 Jörg Lippert - *Applying integrative, mechanistic modeling in pharmaceutical R&D*

12:00 Dirk Drasdo - *How far can we go with single-cell-based models: achievements and limitations*

12:30 Arne Traulsen - *A mathematical model for the hierarchy of hematopoiesis and the stochastic dynamics of chronic myeloid leukemia*

13:00 Lunch

Mathematical Challenges arising from Bridging Lab and Clinics (Jörg Lippert)

14:00 Daniel Durstewitz - *Challenges in the Multivariate Analysis of Neuronal Time Series*

14:30 Jan Küntzer - *From Molecules to Patients - Information Processing through the Erythropoietin Receptor as Paradigm*

15:00 Coffee Break

15:30 Richardus Vonk – *Mathematical Challenges Arising from Pre-Clinical Statistics for Translational Medicine*

16:00 Andreas Schuppert - *Network reengineering – a mathematical key to translational medicine*

16:30 Discussion / Wrap Up of the day

19:00 Dinner @ Restaurant Kulturbrauerei, Leyergasse 6, 69117 Heidelberg

Thursday, 8.12.2011

9:00 Opening Remarks (Hans Georg Bock, Andreas Schuppert)

Mathematical Challenges arising from Disease Modelling and Drug Research (Jan Küntzer)

9:15 Ursula Klingmüller - *From Molecules to Patients - Information Processing through the Erythropoietin Receptor as Paradigm*

9:45 Anna Marciniak-Czochra - *Modeling the reconstitution time after blood stem cell transplantation: Using results of clinical trials to plan treatment of individual patients*

10:15 Coffee Break

10:45 Franz-Josef Müller (CAU Kiel)

11:15 Hauke Busch - *A Network Theoretic Approach to Cell Dynamics and Disease Heterogeneity*

11:45 Discussion

12:15 Lunch

Mathematical Concepts (Hans Georg Bock)

13:30 Sven Bergmann - *Integration of large-scale molecular genotypes into genome-wide association studies*

14:00 Zoran Nikoloski - *Integrative network-based characterization of organisms' response to environmental perturbations: The art of combining omics data with network-structured knowledge*

14:30 Coffee Break

15:00 Sven Hirsch - *Data-Driven Predictions of Flow Conditions in Aortic Aneurisms*

15:30 Christoph Schütte - *Math for Diagnostics*

16:00 Thomas Höfer (DKFZ)

16:30 Discussion.

17:00 Wrap up / How to proceed

17:30 Farewell / Coffee / Refreshments