German Conference on Bioinformatics

Satellite Workshop

Organ-oriented Systems Biology

19th September 2012, Jena/Germany

Technologie- und Innovationspark TIP Jena, 3rd Floor,
Beutenberg Campus, Wildenbruchstr. 15, D-07745 Jena

Organized by Dominik Driesch (BioControl Jena GmbH) and Ralf Mrowka (Jena University Hospital)
with Support from the Virtual Liver Network (VLN) and the Jena Centre for Bioinformatics (JCB)

Programme

08.30 - 09.00 *Registration*

09.00 - 09.25 **Opening Talk:**
Are we still in need of artificial organs?
J. Vienken (Fresenius Medical Care, Bad Homburg, Germany)

09.25 - 09.50 **Bioreactor system suitable for *in vitro* studies on hepatic metabolism and cell reorganization**
M. Richter (Charité, Berlin, Germany)

09.50 - 10.15 **Comparison of various approaches to calculating the optimal hematocrit in vertebrates**
H. Stark (Friedrich-Schiller-University Jena, Germany)

10.15 - 10.40 **Development of multi-scale physiological models for pharmaceutical research and development**
L. Kuepfer (Bayer Technology Services GmbH, Leverkusen, Germany)

10.40 - 11.10 *Coffee Break*

11.10 - 11.35 **A concentration-based, identifiable and patient-specific liver-model: a link between detailed multi-level modelling and clinical practice**
M. Forsgren (Linköping University, Sweden)

11.35 - 12.00 **Using Metabolic Modelling and Optimization Methods in Organ-oriented Systems Biology: Prediction of Liver Zonation under Different Metabolic Conditions**
M. Bartl (Technical University of Ilmenau, Germany)

12.00 - 12.25 **Sinusoidal perfusion in the normal and diseased liver**
Olaf Dirsch (Jena University Hospital, Germany)

12.25 - 12.50 **An integrative multi-scale approach to liver modeling in 3D**
S. Hoehme (University of Leipzig, Germany)

12.50 - 13.50 *Lunch Break*

13:50-14:15 **Mathematical models of growth control in colon cancer**
N. Bluethgen (Charité, Berlin, Germany)

14.15-14.40 **Organ-focused analysis of the human protein-protein interaction network**
M. Andrade (Max Delbrück Center for Molecular Medicine, Berlin, Germany)

14:40-15:05 **Mathematical Models of Aquaporin-2 Trafficking in Rat and Canine Kidney Cells**
M. Froehlich (European Bioinformatics Institute, Hinxton, Cambridge, UK)

15.05-15.30 **A systems understanding of type 2 diabetes and insulin resistance linking insulin signalling with whole-body metabolism using organ-based modules**
G. Cedersund (Linköping University, Sweden)

15:30-15:55 **Inference of Transcription Factor Networks using the Extended TILAR Approach**
S. Vlaic (Leibniz Institute for Natural Product Research and Infection Biology – Hans-Knöll-Institute, Jena, Germany)

15.55-16.05 **Concluding remarks**

BioControl
DATA ANALYSIS & PROCESS OPTIMIZATION

Universitätsklinikum Jena

virtual liver network

JCB
Jena Centre for Bioinformatics