# RPP8 Programme

## Wednesday, 22\textsuperscript{th} of April 2015

### Special PreConference Session

<table>
<thead>
<tr>
<th>Time</th>
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<tr>
<td>9:00</td>
<td>Registration opens</td>
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<td>11:00-11:10</td>
<td>Welcome address and introduction of BioToP</td>
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| 11:10-11:50 | Opening plenary lecture:  
Sophia Hober (KTH Stockholm, Sweden)  
Recombinant production and specific separation of proteins |
| 11:50-12:05 | Inmaculada Hernández López (BOKU, Austria)  
Epigenetic regulation in Chinese Hamster Ovary Cell lines |
| 12:05-12:20 | Corinna Rebnegger (BOKU, Austria)  
Dissection of growth rate and cell cycle dependent gene regulation in *Pichia pastoris* |
| 12:20-12:35 | Wolfgang Sommeregger (BOKU, Austria)  
Euchromatin-containing expression vectors for heterologous protein production in CHO cells |
| 12:35-12:50 | Hoang-Minh Nguyen (BOKU, Austria)  
Protein expression and display in the food-grade host *Lactobacillus plantarum* |
| 12:50-13:05 | Sylvia Dietrich (BOKU, Austria)  
Engineering bispecific antibodies using the SEED platform: Solving the light chain pairing problem |
| 13:15-14:15 | Lunch buffet                                                             |
| 13:30     | Registration                                                             |
Welcome and opening session

14:30  **Opening and welcome**  
Pau Ferrer (UAB), Diethard Mattanovich (BOKU, Austria)

14:50-15:50  **Opening keynote lecture:**  
Gero Steinberg (University of Exeter, U.K)  
Secretion and membrane trafficking in filamentous fungi  
*Chair: Diethard Mattanovich*

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**Stream 1: Host physiology under recombinant protein production conditions**  
*Chairs: Brigitte Gasser, Alan Dickson*

15:50-16:20  Bernd Bukau (University Heidelberg-ZMBH, Germany)  
Chaperone-assisted folding and quality control of proteins

16:20-16:40  Verena Puxbaum (BOKU-ACIB, Austria)  
Follow the protein: the secretory pathway of recombinant proteins in *Pichia pastoris* tracked via live cell microscopy.

16:40-17:00  Elena Cámara (UAB, Spain)  
Comparative transcriptomics analysis of the physiological response of *Pichia pastoris* to the expression of three different recombinant proteins.

17:00-17:30  **Coffee break**

17:30-18:00  Lars Elgaard (University of Copenhagen, DK)  
Disulfide-bond formation and redox regulation in the mammalian endoplasmatic reticulum.

18:00-18:20  Tim W. Overton (University of Birmingham, U.K.)  
Single-cell analysis of recombinant protein-GFP fusions; from agar plates to high cell density cultures

18:20-18:40  Jan Maarten van Dijl (U. Groningen, The Netherlands)  
Degradation of extracytoplasmic proteins and catalysts for protein folding in *Bacillus subtilis*

18:40-19:10  Tjeerd van Rij (DSM, The Netherlands)  
Deleting sporulation genes in *B. subtilis* to prevent the reversion of classical mutations

19:30-22:30  **POSTER Session, Exhibition and welcome buffet**
Thursday, 23rd of April 2015

8:30  Registration

Stream 2: Cell engineering for recombinant protein production

Chairs: Jan Maarten van Dijl, Peter Neubauer

9:00-9:30  Rima Menassa (Agriculture and Agri-Food Canada)
          Protein body biogenesis and utility in recombinant protein production in
          *Nicotiana benthamiana*

9:30-9:50  Hirra Hussain (The University of Manchester, UK)
          Difficult to express proteins: Investigating the molecular mechanisms
          responsible for selective poor recombinant protein production

9:50-10:10 Joseph Shiloach (NIH, USA)
           MicroRNA screen for improved functional expression of neurotensin

10:10-10:30 Dieter Palmberger (BOKU, Austria)
            Baculovirus based engineering approaches for minimizing fucosylation in insect
            cells

10:30-11:00 Coffee break

11:00-11:30 Zoya Ignatova (University of Potsdam, Germany)
            Tuning protein production at the level of translation

11:30-11:50 Colin Robinson (University of Kent, UK)
            High-level export of biopharmaceuticals by the Tat protein export pathway in
            *E. coli*

11:50-12:10 Ashish Sharma (Jawahardal Nehru University, India)
            Systems biology approach to reduce cellular stress response in *Escherichia coli*
            leading to design of host platforms for enhanced protein production

12:10-12:30 Julian Ihssen (EMPA, Switzerland)
            Enhanced production of glycoproteins in *Escherichia coli* by structure-guided
            engineering of oligosaccharyltransferase PglB

12:30-15:00 Lunch and POSTER Session
Stream 2 continued: Cell engineering for recombinant protein production

Chairs: Joseph Shiloach, Christine Lang

15:00-15:30 Kelvin H. Lee (University of Delaware, USA)
The Chinese hamster reference genome and applications to CHO HCP studies.

15:30-15:50 Markku Saloheimo (VTT, Finland)
Removing boundaries for therapeutic protein production in the filamentous fungus *Trichoderma reesei*: reduction of the host protease load

15:50-16:10 Peter Punt (TNO, The Netherlands)
*Aspergillus niger* regulatory mutant strains for improved protein production: strain selection and mutant gene identification

16:10-16:40 Coffee break

16:40-17:00 Thomas Baumgarten (Stockholm University, Sweden)
Isolation and characterisation of Mt56, a *E. coli* BL21(DE3) derived strain with improved membrane protein overexpression characteristics

17:00-17:20 João Vidigal (IBET and ITQB, Portugal)
Novel insect cell platforms for membrane protein expression

17:20-18:10 Keynote plenary lecture:
Ron Weiss (MIT, USA)
Mammalian synthetic biology: foundations and health-related applications
Chair: Pau Ferrer

18:30-19:30 Open Meeting of the EFB Section on Microbial Physiology

19:30 Free evening
Friday, 24th of April 2015

Stream 3: Recombinant protein production processes at industrial scale

Chairs: Joachim Klein, Ursula Rinas

9:00-9:30 Gerald Striedner (BOKU, Austria)
Rational design for further advancement of E. coli expression systems

9:30-9:50 Guido Seidel (Wacker, Germany)
ESETEC 2.0 - a new, secretory E. coli strain for the production of complex recombinant proteins.

9:50-10:10 Christian Reitz (TU Berlin, Germany)
Simulating large scale conditions in scale-down bioreactor: Impacts on cell physiology and product quality of recombinant Escherichia coli.

10:10-11:40 Coffee break

10:40-11:10 Torsten Schmidt (Lonza, Switzerland)
Microbial GMP manufacturing at large-scale - Challenges and considerations

11:10-11:30 Roland Weis (VTU Technology, Austria)
High-level protein production with Pichia pastoris: case studies of development path from strain generation over bioreactor cultivation to downstreaming

Stream 4: Biofabrication of complex proteins

Chairs: Markku Saloheimo, Ana Teixeira

11:35-12:05 Miller Tran (Triton Algae Innovation, USA)
Production of complex proteins in eukaryotic green algae: Growth of a new green sector

12:15-15:00 Lunch and POSTER Session

15:00-15:20 William Bentley (University of Maryland, USA)
Biofabrication of multienzyme complexes for enhanced function

15:20-15:40 Neus Ferrer (CIBER-BBN, Spain)
Comparative central nervous system targeting performance of protein nanoparticles and single-chain polypeptides

15:40-16:00 Maria Luisa Tutino (Università di Napoli “Federico II”, Italy)
Pseudoalteromonas haloplanktis TAC125: a naturally optimised production platform for difficult-to-express Ab fragments

16:00-16:30 Coffee break
16:30-16:50  Pablo Emiliano Tomatis (University of Zurich, Switzerland)
Understanding heterologous expression of functional eukaryotic integral
membrane proteins in microorganisms

16:50-17:10  Antonio Villaverde (UAB, Spain)
Quality control in the recombinant production of nanostructured protein
materials

17:10-17:40  Akihiko Kondo (Kobe University, Japan)
Development of efficient enzyme display on the cell surface of the yeast
Saccharomyces cerevisiae

17:40-18:05  Closing of the scientific programme. Concluding remarks

19:00  Trip to Comassema

20:00  Conference dinner with poster awards