

Programme

SUNDAY 18.6.

- 12.00 Registration starts
18.00 Get-together
19.30 **Welcome**
Merja Penttilä, VTT Technical Research Centre of Finland, Finland
Keynote lectures
19.45 **Theoretical and practical systems biology**
Pertteli Varpela, MediceL Ltd and University of Helsinki, Finland
20.25 **New 'dimensions' in genome annotation**
Bernhard Palsson, Department of Bioengineering, UCSD, USA

MONDAY 19.6.

Comparative Genomics and Genome-wide analyses

Chairs: Stefan Hohmann, Sweden and Kalervo Hiltunen, Finland

- 9.00 **Yeasts illustrate the mechanisms of eukaryotic genome evolution**
Bernard Dujon, Institut Pasteur, Paris, France
9.40 **Integrative genomics of fungi**
James Galagan, The Broad Institute of MIT and Harvard, USA
10.20 **Genome-wide identification and analysis of biological systems in yeast**
Stephen Oliver, The University of Manchester, UK
11.00 Coffee
11.25 **Further exploration of the budding yeast transcriptome**
Takashi Ito, University of Tokyo, Japan
12.05 **Understanding the quantitative physiology of a eukaryotic cell fate decision system**
Roger Brent, The Molecular Sciences Institute, Berkeley, USA
12.45 Lunch

Omics data and Cell Function

Chairs: Peter Philippsen, Switzerland and Markus Herrgård, USA

- 14.10 **Evolutionary origin of novel short transcripts in *S. cerevisiae***
Eugenio Mancera, European Molecular Biology Laboratory, Germany
14.30 **Conditional perturbations for GDP-mannose related genes in *S. cerevisiae***
Risto Renkonen, Biomedicum, University of Helsinki, Finland
14.50 **Interactive Proteomics of Membrane Protein Assemblies**
Igor Stagljar, University of Toronto, Canada
15.10 **Vertical genomics: fast dynamic response of central metabolism and glycolytic genes to glucose availability in *S. cerevisiae***
André Canelas, Delft University of Technology, The Netherlands
15.30 **Determination of the transcriptional networks controlling pseudohyphal growth in *Saccharomyces cerevisiae* and their comparison to related yeast species**
Anthony Borneman, The Australian Wine Research Institute, Australia

- 15.50 **The time-dependent response of *S. cerevisiae* to oxidative stress**
Vladimir Shulaev, Virginia Bioinformatics Institute, USA
- 16.10 Coffee
- 16.30 **Poster session I**
- 18.30 Dinner
- 20.00 **Workshop: New -omics approaches and bioinformatics**
Chairs: Igor Stalgljar, Canada and David Ussery, Denmark
- 21.30 Sauna

TUESDAY 20.6.

Modelling: Theory and Practise

Chairs: Matej Oresic, Finland and Masanori Arita, Japan

- 9.00 **Dynamic modeling of cAMP signal transduction in *Saccharomyces cerevisiae***
Matthias Reuss, Institute of Biochemical Engineering, Germany
- 9.40 **Construction and analysis of kinetic models of *Saccharomyces cerevisiae*; applications to glycolysis, cell cycle and mixed populations studies**
Jacky Snoep, University of Stellenbosch, South Africa
- 10.20 **Metabolic control analysis of yeast central carbon metabolism under uncertainty**
Vassily Hatzimanikatis, Northwestern University, Evanston, USA
- 11.00 Coffee
- 11.25 **Dynamic modeling of yeast cell stress response**
Edda Klipp, Max Planck Institute for Molecular Genetics, Berlin, Germany
- 12.05 **Exit from mitosis in budding yeast: models and experiments**
Bela Novák, Hungarian Academy of Sciences, Hungary
- 12.45 Lunch

Modelling and Cell Function

Chairs: Uwe Sauer, Switzerland and Friedrich Srienc, USA

- 14.10 **Physiological response of *Saccharomyces cerevisiae* to change in oxygen provision**
Hannu Maaheimo, VTT Technical Research Centre of Finland, Finland
- 14.30 **Monitoring fast dynamic combined response metabolome and transcriptome of *S. cerevisiae* to a glucose pulse**
Made Kresnowati, Delft University of Technology, The Netherlands
- 14.50 **Automated flow cytometry for studying population dynamics**
Friedrich Srienc, BioTechnology Institute, University of Minnesota, USA
- 15.10 **Deciphering condition dependent metabolic regulation in *Saccharomyces cerevisiae* by ¹³C flux analysis**
Lars Blank, University of Dortmund, Germany
- 15.30 **Functional implications of changes in gene expression**
Jildau Bouwman, Vrije Universiteit, The Netherlands
- 15.50 **Comparative computational modelling reveals a novel logic of tor signalling in yeast**
Joerg Stelling, Institute of Molecular Systems Biology, ETH Zurich, Switzerland

- 16.10 Coffee
- 16.30 **Poster session II**
- 18.30 Dinner
- 20.00 **Workshop: Quantitative data acquisition and modelling**
Chairs: Pedro Mendes, USA and Douglas Kell, UK
- 21.30 Sauna

WEDNESDAY 21.6.

Systems Biology Applications

Chairs: Lilia Alberghina, Italy and Hans Westerhoff, The Netherlands/UK

- 8.30 **Adaptation of *Saccharomyces cerevisiae* to a changing environment: a vertical genomics approach**
Han de Winde, Delft University of Technology, Delft, The Netherlands
- 9.05 **Application of system biology on brewer's yeast**
Naoyuki Kobayashi, Sapporo Breweries Ltd, Japan
- 9.45 **Chemical combinations as multi-target therapeutics and biological probes**
Joseph Lehar, CombinatoRx Inc. and Boston University, USA
- 10.20 Coffee
- 10.40 **Reporter features: A tool for mapping of global control in metabolism through model driven analysis of ome data**
Jens Nielsen, Technical University of Denmark, Denmark
- 11.20 **Panel: Industrial expectations of systems biology**
Chairs: Hans van Dijken, The Netherlands and Pirkko Suominen, USA
- 12.20 Lunch

Physiology and Metabolic Engineering

Chairs: Sylvie Dequin, France and Laura Ruohonen, Finland

- 13.20 **Metabolic engineering of yeasts for production of bulk fermentation products from xylose: ethanol and lactic acid**
Pirkko Suominen, NatureWorks LLC, Minnetonka, USA
- 13.40 **L-ascorbic acid production from D-glucose in metabolic engineered *Saccharomyces cerevisiae* and its effect on strain robustness**
Paola Branduardi, University of Milano-Bicocca, Italy
- 14.00 **Metabolic engineering of *S. cerevisiae* for overproduction of succinic acid**
Jose Manuel Otero, Technical University of Denmark, Denmark
- 14.20 **Comparative ¹³C flux analysis of two *Saccharomyces cerevisiae* strains reveals substantial differences in the flux through the PP pathway**
Carole Camarasa, UMR-Sciences pour l'Enologie, INRA, France
- 14.40 **Zero growth product formation in *Saccharomyces cerevisiae***
Leonie van Dijk, Delft University of Technology, The Netherlands

Keynote lecture

15.00 **Biological robustness**

Hiroaki Kitano, Sony Computer Science Laboratories Inc, Japan

15.40 **Concluding remarks**

Merja Penttilä, VTT Technical Research Centre of Finland, Finland

16.00 Coffee

17.30 Boat trip and sightseeing on the fortress island Suomenlinna

20.00 Dinner at Walhalla Restaurant on Suomenlinna