

08:30 - 09:05 Registration & coffee

09:05 - 09:15 Welcome by Kevin Verstrepen

Session 1

Chair: Vitor Bernardes Pinheiro & Joleen Masschelein

## SESSION I: APPLICATIONS IN AGRICULTURE/IN MITIGATION OF CLIMATE CHANGE

- 09:15 - 09:45** Back to the Roots  
**Jos Raaijmakers**, Netherlands Institute of Ecology (NIOO-KNAW) & Leiden University, NL
- 09:45 - 10:15** Microbial production of AGROBODY™ biocontrols for agricultural applications  
**Alrik Los**, Biotalys NV, BE
- 10:15 - 10:45** Plant growth with a help from the microbe friends  
**Sofie Goormachtig**, VIB-UGent Center for Plant Systems Biology, BE
- 10:45 - 11:15** Coffee break
- 11:15 - 11:30** *Selected Talk*: Dimalis: a new pipeline to facilitate learning of important microbial trends from time-lapse images  
**Abstract 76**  
**Helena Todorov**, Department of Fundamental Microbiology, University of Lausanne, CH
- 11:30 - 12:00** Fermented pheromones – a sustainable solution for plant protection from insect pests  
**Irina Borodina**, DTU BIOSUSTAIN, Novo Nordisk Foundation Center for Biosustainability, DK

**12:00 - 12:05** *Flash Talk*: A focus on design for microbial cell factory development  
**Abstract 57**  
**Sara Moreno-Paz**, Wageningen University and Research, NL

**12:05 - 12:10** *Flash Talk*: Developing tools for monitoring cellular properties during yeast fermentation  
**Abstract 64**  
**Raquel Perruca Focillas**, Lund University, SE

**12:10 - 12:15** *Flash Talk*: CO<sub>2</sub>-dependent anaerobic co-fermentation of glucose and sorbitol to increase ethanol yields  
**Abstract 77**  
**Aafke C.A. van Aalst**, Delft University of Technology, NL

**12:15 - 12:20** *Flash Talk*: Delft University of Technology, NL  
**Abstract 45**  
**Michael Krogh Jensen**, Technical University of Denmark, DK

**12:20 - 12:25** *Flash Talk*: Accuracy and data efficiency in deep learning models of protein expression  
**Abstract 59**  
**Evangelos-Marios Nikolados**, School of Biological Sciences, University of Edinburgh, GB

**12:25 - 12:30** *Sponsored Talk*: Finding the right tools for your synthetic biology workflow  
**Maria Savino**, Ph.D, Field Marketing Manager, Beckman Coulter, EU

**12:30 - 13:30** Lunch

**13:30 - 14:30** Poster Session - Odd numbers

Session 2

Chair: Nico Callewaert & Sybille Vonesch

## SESSION 2: NEW TECH FOR MICROBIAL SYNTHETIC BIOLOGY/ OR APPLICATIONS

- 14:30 - 15:00** Engineering yeast to brew medicines via an integrated systems approach  
**Christina Smolke**, *Stanford University / Bioengineering / Antheia, US*
- 15:00 - 15:30** Synthetic biology tools for reengineering biological systems  
**Claudia Vickers**, *Eden Brew, Queensland University of Technology and Griffith University, AU*
- 15:30 - 16:00** CRISPR tools for high-throughput genome perturbation in microbes  
**Sibylle Vonesch**, *VIB-KU Leuven Center for Microbiology, BE*
- 16:00 - 16:30** Coffee break
- 16:30 - 16:45** *Selected Talk: Emerging applications of microbial single cell genomics*  
*Abstract 75*  
**Ramunas Stepanauskas**, *Bigelow Laboratory for Ocean Sciences, US*
- 16:45 - 17:15** Biology by Design: Organism Engineering at Ginkgo  
**Patrick Boyle**, *Ginkgo Bioworks, Inc., US*
- 17:15 - 17:45** Metabolite biosensors in yeast metabolic engineering  
**Verena Siewers**, *Chalmers University of Technology, Department of Biology and Biological Engineering, Division of Systems and Synthetic Biology, SE*
- 17:45 - 18:45** Reception
- 18:45 - 20:00** Guided tour to the conference restaurant
- 20:00 - 22:30** Conference dinner @ Faculty Club

**08:15 - 09:00** Registration & coffee

Session 3

Chair: Jeroen Raes & Kevin Verstrepen

## SESSION 3: APPLICATIONS IN HUMAN HEALTH

- 09:00 - 09:30** Causes and consequences of microbiome variation  
**Andy Goodman**, *Microbial Pathogenesis, Yale School of Medicine, US*
- 09:30 - 10:00** Microbial function modulation through precision evolution and xenobiotics  
**Kiran Patil**, *MRC Toxicology Unit, University of Cambridge, UK*
- 10:00 - 10:30** What *Saccharomyces cerevisiae* teaches us about circular DNA in eukaryotes  
**Birgitte Regenber**, *Department of Biology, Section for Ecology and Evolution, University of Copenhagen, DK*
- 10:30 - 11:00** Coffee break
- 11:00 - 11:15** *Selected Talk: Use of the OPENPichia yeast protein expression toolbox for rapid prototyping of affinity-enhanced heavy chain-only antibody variants against SARS-CoV-2*  
*Abstract 48*  
**Loes van Schie**, *VIB-UGent Center for Medical Biotechnology, VIB, BE; Department of Biochemistry and Microbiology, Ghent University, BE*
- 11:15 - 11:45** Titel TBC  
**Vikram Virdi**, *Animab, BE*
- 11:45 - 12:15** Bacteriophages as a source for new antibacterial design strategies and biotechnological applications  
**Rob Lavigne**, *Laboratory of Gene Technology, KU Leuven, BE*

## Session 4

Chair: Han Remaut

**12:15 - 12:20**  
Abstract 2

*Flash Talk:* Genetic and environmental circadian disruption induce metabolic alteration through changes in the gut microbiome  
**Baraa Altaha**, AChair of Nutrition and Immunology, Technical University of Munich, DE; ZIEL - Institute for Food & Health, Technical University of Munich, DE

**12:20 - 12:25**  
Abstract 74

*Flash Talk:* Supplementation with *Lactocaseibacillus rhamnosus* GG chewables as a clinical strategy against allergic rhinitis  
**Irina Spacova**, Research Group Environmental Ecology and Applied Microbiology, Department of Bioscience Engineering, University of Antwerp, BE

**12:25 - 12:30**  
Abstract 16

*Flash Talk:* Pathway engineering using recombination-based expression optimization in yeast  
**Charlotte Cautereels**, KU Leuven - VIB Center for Microbiology, BE

**12:30 - 12:35**  
Abstract 63

*Flash Talk:* Metabolic engineering approaches for improved production of plecomacrolides in actinomycetes  
**Filipa Pereira**, University of Michigan, US

**12:35 - 12:40**  
Abstract 87

*Flash Talk:* A novel Cas3 base-editor for efficient directed evolution of complex metabolic pathways in *S. cerevisiae*  
**Anna Zimmermann**, VIB | Lab for Systems Biology, Center for Microbiology, BE; KU Leuven | Laboratory for Genetics and Genomics, BE

**12:40 - 12:45**  
Abstract 33

*Flash Talk:* Nature-inspired microbial processes for urban biomining: harnessing the oxalate-carbonate pathway for lithium recovery  
**Patrick Hilpisch**, Laboratory of Microbiology, University of Neuchâtel, CH

**12:45 - 12:50**

*Sponsored Talk:* SPCs - innovative technology to analyse millions of microbes at single-cell resolution  
**Vaidotas Kiseliovas**, Droplet Genomics, LT

**12:50 - 13:50**

Lunch

**13:50 - 14:45**

Poster Session - Even numbers

## SESSION 4: MICROORGANISM AS A SOURCE OF NOVEL BIOMATERIALS

**14:45 - 15:15**

New technologies for microbial synthetic biology  
**Huifeng Jiang**, Tianjin Institute of Industrial Biotechnology, CN

**15:15 - 15:45**

How microbes discovered electricity way before Alessandro Volta  
**Filip Meysman**, Universiteit Antwerpen, BE

**15:45 - 16:00**  
Abstract 53

*Selected Talk:* Engineering *Escherichia coli* to produce oleochemicals  
**Paul Matthay**, VIB-KU Leuven Center for Microbiology, BE; KU Leuven Centre of Microbial and Plant Genetics, BE

**16:00 - 16:30**

Coffee break

## Session 5

Chair: Han Remaut

## SESSION 5: APPLICATIONS IN CIRCULAR ECONOMY

**16:30 - 17:00**

Microbial solutions to the climate crisis  
**Arpita Bose**, Washington University in St. Louis, US

**17:00 - 17:15**  
Abstract 65

*Selected Talk:* Metabolic Engineering Strategies for Sustainably Producing Oleochemicals in Microbes  
**Brian Pfleger**, University of Wisconsin-Madison, US

**17:15 - 17:45**

Living Microbial Photohybrids to Produce Solar Fuels and Chemicals from Carbon Dioxide  
**Shafeer Kalathil**, Northumbria University, UK

**17:45 - 17:55**

Closing remarks by Jeroen Raes