



# CAS Conference Synthetic Biology

27 - 29 July 2015

Biocenter of the LMU Munich  
Martinsried

## Monday, 27 July 2015

13:00 *Registration*

14:00 *Welcome Address*

*Session: Mirror Biology and Orthogonal Biosystems Chair: Erwin Frey / Ulrich Gerland*

14:20 **Jörg Hoheisel**

Establishment of a Fully Synthetic, Mirror-Image Biological

15:05 **Liedewij Laan**

Evolutionary Recovery after Crippling Cell Polarization Follows Reproducible Trajectories

15:50 **Simon Lanzmich**

A Synthetic Codon Replicator with tRNA

16:15 *Coffee*

16:45 **Zan Luthey-Schulten**

Stochastic Simulations of Cellular Processes: From Single Cells to Colonies

17:10 **Beatrix Süß**

Engineered Riboswitches: Convenient Building Blocks for the Construction of Synthetic Genetic Circuits

17:55 **Uri Alon**

Evolutionary Tradeoffs and the Geometry of Biological Shape Space

18:40 *Welcome Night / Poster Session*

## Tuesday, 28 July 2015

*Session: Enabling Technologies for Synthetic Biology I Chair: Andreas Ladurner / Dieter Braun*

9:00 **Roman Jerala**

Structural Synthetic Biology: Designed Bionanostructures Based on Non-Natural Folding Motifs

9:45 **Timothy Lu**

Massively Parallel Combinatorial Genetics in Bacteria and Human Cells

10:30 **Anne Meyer**

Bacteria-Mediated Fabrication of Artificial Nacre

10:55 *Group Photo*

11:05 *Coffee*

11:35 **Bruce Turnbull**

Engineering Lectins for Synthetic Glycobiology

- 12:20 **Tobias Großkopf**  
Mutational Reshaping of Metabolism is Necessary for Microbial Inter-Species Cooperation
- 12:45 **Mislav Oreb**  
Engineering Subcellular Compartmentalization in *Saccharomyces Cerevisiae*
- 13:10 *Lunch*
- Session: Enabling Technologies for Synthetic Biology II Chair: Martin Parniske / Thorsten Mascher*
- 14:15 **Luis Rubio**  
Engineering Nitrogenase in Eukaryotes
- 15:00 **Andrew Horwitz**  
Multiplex Metabolic Engineering of Yeasts with CRISPR
- 15:45 **Isabelle Meynial-Salles**  
Rational Design, Evolution and Characterization of an Optimized Cell Factory for the Continuous Production of 1, 3-Propanediol
- 16:10 *Coffee*
- 16:40 **iGEM Team UC Davis**  
Fast, Inexpensive and Reproducible Quality Control of Olive Oil through Enzyme-Mediated Aldehyde Profiling
- 17:05 **iGEM Team Heidelberg**  
The Ring of Fire
- 17:30 *Poster Session*
- 19:30 *Dinner*

### Wednesday, 29 July 2015

*Session: Synthetic Cells / Genome Engineering Chair: Zan Luthey-Schulten*

- 9:00 **Joel Bader**  
Synthetic Yeast Genome Rearrangement and Minimization System
- 9:45 **Floyd Romesberg**  
A Semi-Synthetic Organism with an Expanded Genetic Alphabet
- 10:30 **Clyde Hutchison III**  
Minimizing a Bacterial Genome by Global Design and Synthesis
- 11:15 *Coffee*

*Session: Metabolic Engineering Chair: Joachim Rädler*

- 11:45 **Jochen Förster**  
Microbial Polyphenol Production
- 12:30 **Anne Sawyer**  
Microalgae as Solar-Cell Factories
- 13:15 *Lunch*

*Session: Translational Aspects of Synthetic Biology Chair: Kirsten Jung*

- 14:15 **Paul Freemont**  
Unlocking the Potential of Synthetic Biology – the Development of Standardized Processes and Platform Technology to Establish a Systematic Design Framework
- 14:40 **Annette Kremser**  
International Funding Opportunities in Synthetic Biology: Development and Future Perspectives
- 15:05 **Simone Furini**  
Reducing Phenotypic Variability in Synthetic Biology Applications Via Post-Transcriptional Control of Noise in Gene Expression
- 15:30 *Coffee*
- 16:00 **Jens Klein**  
Synthetic Biology as Source for New Chemical Matter in Drug Discovery
- 16:45 *Conclusion*
- 17:00 *End*

