

Monday, June 27th

09:00 10:20 Registration

10:20 10:30 Welcome messages *Alain Blanchard, Jean-Loup Faulon and Gilles Truan*

10:30 11:20 Opening Session

10:30 11:20 *CRISPR tools to engineer and fight Bacteria, **Guest Speaker: David Bikard, Institut Pasteur Paris***

11:20 12:00 Genome Engineering Session

Chair: Alain Blanchard

11:20 12:00 *A CRISPR-based gene drive system to suppress populations of malarial mosquitoes, **Guest Speaker: Tony Nolan, Imperial College London***

12:00 14:00 Buffet and poster session #1

14:00 15:00 Genome Engineering Session

Chair: Alain Blanchard

14:00 14:30 *Impact of donor-recipient phylogenetic distance on bacterial genome transplantation, Fabien Labroussaa, Biologie du fruit et pathologies, Bordeaux*

14:30 15:00 *3D organization of synthetic and scrambled chromosomes, Heloise Muller, Institut Pasteur, Paris*

15:00 15:40 Proteins and Biocatalysts Engineering Session

Chair: Magali Remaud Siméon

15:00 15:40 *Diversification of Natural and Non-Natural Products Using Engineered Biosynthetic Pathways and Enzymes, **Guest Speaker: Jason Micklefield, University of Manchester***

15:40 16:20 Coffee break

16:20 17:20 Proteins and Biocatalysts Engineering Session

Chair: Magali Remaud-Siméon

16:20 16:50 *Self-selection using artificial networks: an adaptive tool for directed evolution of enzymes, Adèle Dramé-Maigné, ESPCI, Paris*

16:50 17:20 *Engineering of artificial enzymes toward the construction of a new metabolic pathway for 2,4-di-hydroxybutyric acid production, Yannick Malbert, Toulouse White Biotechnology (TWB), LISBP, Toulouse*

17:20 18:00 Metabolic Engineering Session

Chair: Gilles Truan

17:20 18:00 *Synthetic biosystems for the production of high-value compounds, **Guest Speaker: Sotirios Kampranis, University of Copenhagen***

18:00 19:00 Ethics and Societal Issues Session

Chair: Gilles Truan

18:00 18:40 *Synthetic biology as a topic for the social sciences and humanities, **Guest Speaker: Jane Calvert, University of Edinburgh***

18:40 19:00 *Discussion*

20:00 22:30 Cocktail & Dinner @ Le café français

Tuesday, June 28th

08:50 09:50 Metabolic Engineering Session Chair: Gilles Truan

08:50 09:20 *A green marine pico-eukaryote to unveil VLC-PUFA pathways, Florence Corellou, Laboratoire de Biogenèse Membranaire, Bordeaux*

09:20 09:50 *Metabolic engineering of *Cupriavidus necator* for heterotrophic and autotrophic alka(e)ne production, Lucie Crépin, LISBP, Toulouse*

09:50 10:30 Coffee break

10:30 12:10 Biological Networks and Gene Regulation Engineering Session Chair: Mathieu Jules

10:30 11:10 *Pseudomonas putida as a cell factory: the software and the hardware, **Guest Speaker: Victor de Lorenzo, National Center for Biotechnology Madrid***

11:10 11:40 *Systems metabolic engineering to rebalance nitrogen fixation and nitrogen assimilation in diazotrophs, Jorg Schumacher, Imperial College London*

11:40 12:10 *Molecular basis of membrane protein production and internal membranes proliferation in *Escherichia coli*, Bruno Miroux, Laboratoire de biologie physico-chimique des protéines membranaires, Paris*

12:10 14:00 Buffet and Poster session #2

14:00 15:40 Molecular Programming and Orthogonal Biology Session Chair: Jean-Loup Faulon

14:00 14:40 *Synthesis of a reaction-diffusion French flag pattern with a molecular program, **Guest Speaker: Andre Estevez-Torres, Université Pierre et Marie Curie Paris***

14:40 15:10 *Post-modifications of recombinant elastin-like polypeptides, Elisabeth Garanger, Laboratoire de Chimie des Polymères Organiques, Bordeaux*

15:10 15:40 *Expression of a bidomain redox protein containing non-canonical amino acids for selective fluorescence modification and FRET investigations, Robert Quast, LISBP, Toulouse*

15:40 16:20 Coffee break

16:20 18:00 Industrial Developments Session Chair: Magali Remaud-Siméon

16:20 17:00 *The Antha Programming Language: Making Biology Simple, Reproducible and Scalable, **Guest Speaker: Michael Sadowski, Synthace Ltd. London***

17:00 17:30 *C3P3: first generation of a versatile artificial cytoplasmic expression system that recapitulates mRNA capping and polyadenylation, Philippe Jais, Eukarys SAS*

18:00 19:00 Ethics and Societal Issues Session Chair: Vincent Grégoire Delory

20:00 23:30 Banquet @ Sicambre boat

Wednesday, June 29th

09:00 10:00 Integrative and Predictive Biology Session Chair: Grégory Batt

09:00 09:40 *Prediction uncertainty in the case of unidentifiability and single-cell data – new concepts and methods, **Guest Speaker: Gunnar Cedersund, Department of Biomedical Engineering Linköping***

09:40 10:00 *Integrative and predictive biology outside the plant: linking computational tools to fleshy fruit systems, Cécile Cabasson, Biologie du Fruit et Pathologie, Bordeaux*

10:00 10:40 Coffee break

10:40 11:20 Integrative and Predictive Biology Session Chair: Grégory Batt

10:40 11:00 *Inference of qualitative rules governing bacterial metabolic configurations under optimal resource allocation, Laurent Tournier, MalAGE, Jouy-en-Josas*

11:00 11:20 *Balancing a genetic toggle switch by real-time control or periodic stimulations, Gregory Batt, INRIA, Paris*

11:20 12:00 CAD for Synthetic Biology Session Chair: Pablo Carbonell

11:20 12:00 *Multi-Scale Models for Synthetic Circuit Design, **Guest Speaker: Joerg Stelling, ETH Zürich***

12:00 13:30 Buffet and poster session #3

13:30 14:30 CAD for Synthetic Biology Session Chair: Pablo Carbonell

13:30 14:00 *Automating Engineering Design in Synbio Foundries, Pablo Carbonell, University of Manchester*

14:00 14:30 *Model-based robust design of synthetic designer cells with minimum load for the host cell, Claude Lormeau, Swiss Institute of Bioinformatics, ETH Zürich*

14:30 16:10 Tools and Technologies for Synthetic Biology Session Chair: Jean-Loup Faulon

14:30 15:10 *Engineering Escherichia coli for specific tumor cell targeting and protein injection, **Guest Speaker: Luis Angel Fernández, Centro Nacional de Biotecnología, Madrid***

15:10 15:40 *Metabolic conversions in artificial microcompartments using microfluidics, Thomas Beneyton, CRPP, Bordeaux*

15:40 16:10 *Droplet-Based Microfluidics for Sequential Bottom-Up Assembly of Functional Cell-Like Compartments, Iliia Platzman, Max Planck Institute for Medical, University of Heidelberg*

16:10 16:20 Prizes distribution Alain Blanchard, Jean-Loup Faulon and Gilles Truan

16:20 16:30 Closing speeches Alain Blanchard, Jean-Loup Faulon and Gilles Truan

16:30 17:00 Coffee break