

***Preliminary Program***

*(6/14/17)*

# **Enzyme Engineering XXIV**

September 24-28, 2017  
Pierre Baudis Congress Center  
Toulouse, France

**Conference Co-Chairs**

**Pierre Monsan**  
Toulouse White Biotechnology, France

**Magali Remaud-Simeon**  
LISBP-INSA, University of Toulouse, France



**Engineering Conferences International**

32 Broadway, Suite 314

New York, NY 10004, USA

Phone: 1-212-514-6760

[www.engconfintl.org](http://www.engconfintl.org) – [info@engconfintl.org](mailto:info@engconfintl.org)

**Sunday, September 24, 2017**

15:00 – 18:00            Conference check-in

18:00 – 19:00            **Plenary lecture**  
**Biocatalysts for a biological chemistry: Bringing new chemistry to life**  
Frances Arnold, California Institute of Technology, USA

19:00 – 20:00            Welcome reception

**Monday, September 25, 2017**

**Session 1: Enzyme engineering and synthetic biology**

- 08:30 – 09:00 **Programmable DNA-guided artificial restriction enzymes: Discovery, engineering, and applications**  
Huimin Zhao, University of Illinois at Urbana-Champaign, USA
- 09:00 – 09:30 **Towards high-value chemicals production harnessing synthetic biology**  
Eriko Takano, University of Manchester, United Kingdom
- 09:30 – 10:00 **Discovery and engineering systems for multi-enzyme catalysis**  
Claudia Schmidt-Dannert, University of Minnesota, USA
- 10:00 – 10:30 3 short presentations, 10 minutes each
- 10:30 – 11:00 Coffee break in the poster area
- 11:00 – 11:20 **Designer enzymes for industrial applications**  
Daniela Grabs, Arzeda Corporation, USA
- 11:20 – 11:40 **TBD**  
Olivier Rolland, Total Energie Nouvelle, France
- 11:40 – 12:00 **Using the CODEEVOLVER® directed evolution platform to create improved enzymes for molecular diagnostics**  
Mitchell Vesna, Codexis, Inc., USA
- 12:00 – 12:20 **Bio-Isobutene production: When the key enzymes are nowhere to be found**  
Frédéric Pâques, Global Bioenergies, France
- 12:20 – 14:00 Lunch

**Session 2: Computational design/artificial catalyst**

- 14:00 – 14:30 **Computational design of reprogrammed and new protein functions**  
Tanja Kortemme, University of California, San Francisco, USA
- 14:30 – 15:00 **“Bio” catalysis for energy: Enzymes, artificial enzymes and bioinspired catalyst**  
Marc Fontecave, Collège De France, France
- 15:00 – 15:30 **Design and evolution of artificial enzymes**  
Don Hilvert, Swiss Federal Institute of Technology, Switzerland
- 15:30 – 16:00 Coffee break in the poster area
- 16:00 – 16:30 **Artificial (METALLO-) enzymes: Design and application**  
Gérard Roelfes, University of Groningen, Netherlands
- 16:30 – 17:00 **Computer-aided engineering of enzymes for in vitro and in vivo production of novel precursors**  
Isabelle André, LISBP-INSA, France

**Monday, September 25, 2017 (continued)**

17:00 – 17:15	Short break
17:15 – 18:15	5 short presentations, 10 minutes each
18:15 – 19:15	Poster session / Happy hours
20:00	Dinner

**Tuesday, September 26, 2017**

**Session 3: Structure/activity/Dynamic /Evolution**

- 08:30 – 09:00      **Evolution of protein dynamics over 3.5 billion years at the heart of enzyme catalysis and regulation**  
Dorothee Kern, Brandeis University, USA
- 09:00 – 09:30      **The fourth dimension: Accounting for dynamics when engineering enzymes**  
Joelle Pelletier, University of Montreal, Canada
- 09:30 – 10:00      **TBD**  
Dan Tawfik, Weizmann Institute of Science, Israel
- 10:00 – 10:30      2 short presentations, 15 minutes each
- 10:30 – 11:00      Coffee break in poster area
- 11:00 – 11:30      **KnowVolution: Redesigning enzymes for innovations**  
Ulrich Schwaneberg, RWTH Aachen, Germany
- 11:30 – 12:00      **Structure and function of lytic polysaccharide monooxygenases (LPMOS) and other redox enzymes involved in biomass processing**  
Vincent G. H. Eijsink, Norwegian University of Life Sciences, Norway
- 12:00 – 12:20      **Industrial protein engineering AKA “Good Enough ASAP”**  
Torben Borchert, Novozymes, Denmark
- 12:20 – 12:40      **Behind the scenes: Science that drives Illumina's sequencing chemistry**  
Molly He, Illumina Inc., USA
- 12:40 – 14:00      Lunch in Room X

**Session 4: Sequence and Function-based discovery**

- 14:00 – 14:30      **Discovering novel carbohydrate-active enzymes**  
Bernard Henrissat, AFMB – CNRS, France
- 14:30 – 15:00      **In silico methods in enzyme screening and gene expression**  
Yasuhisa Asano, Toyama Prefectural University, Japan
- 15:00 – 15:30      **Biological diversity and chemical knowledge as driving forces in enzyme engineering**  
Bernhard Hauer, University of Stuttgart, Germany
- 15:30 – 16:00      Coffee break
- 16:00 – 16:30      **Microfluidic droplets as tools for high-throughput biology: Enzyme evolution, recruitment and discovery based on catalytic promiscuity**  
Florian Hollfelder, University of Cambridge, United Kingdom

**Tuesday, September 26, 2017 (continued)**

16:30 – 17:00	<b>High-throughput functional metagenomics for the discovery of glycan metabolizing pathways</b> Gaby Potocki-Véronèse, LISBP/INSA University Toulouse, France
17:00 – 17:15	Short break
17:15 – 18:15	5 short presentations, 10 minutes each
18:15 – 19:15	Poster session / Happy hours
20:00	Dinner

**Wednesday, September 27, 2017**

**Session 5: Biocatalysis/Engineering/Chemicals**

- 08:30 – 09:00      **Expanding substrate scope and altering stereopreference of enzymes through advanced protein engineering**  
Uwe Bornscheuer, Greifswald University, Germany
- 09:00 – 09:30      **Engineering biocatalytic nanoreactors**  
Stefan Lutz, Emory University, USA
- 09:30 – 10:00      2 short presentations, 15 minutes each
- 10:00 – 10:30      **Computational library design and screening: Creating elephant paths in enzyme evolution**  
Dick Janssen, University of Groningen, Netherlands
- 10:30 – 11:00      Coffee break in the poster area
- 11:00 – 11:30      **Carboxylation of phenols and asymmetric nucleophile addition across C=C bond**  
Kurt Faber, University of Graz, Austria
- 11:30 – 11:50      **Biocatalysis: We create chemistry - with a little help from enzymes**  
Kai Baldenius, BASF SE, Germany
- 11:50 – 12:30      4 short presentations, 10 minutes each
- 12:30                Free afternoon – Boxed lunches will be distributed

**Thursday, September 28, 2017**

**Session 6: Biocatalysis/Engineering/Process FFH**

- 08:30 – 09:00      **Accessing new and improved enzymes for unnatural glycoside synthesis and cell surface antigen removal through metagenomics, gene library synthesis and directed evolution**  
Steve Withers, University of British Columbia, USA
- 09:00 – 09:30      **Oxidoreductase reactions for cosmeceutical production from soy bean products**  
Byung-Gee Kim, Seoul National University, Korea
- 09:30 – 10:00      **Engineering chitin deacetylases for the biotechnological production of patterned chitosans**  
Toni Planas, IQS Universitat Ramon RUII, Barcelona, Spain
- 10:00 – 10:20      **Enabling brighter living by enzyme engineering: From structure inspired trial and error to structure guided design**  
Oliver May, DSM Biotechnology Center, Netherlands
- 10:20 – 10:50      Coffee break in the poster area
- 10:50 – 11:10      **Glucan dendrimer for carbohydrate drugs**  
Takashi Kuriki, Ezaki Glico Co., Ltd., Japan
- 11:10 – 11:30      **Genomic characterization and gene regulation optimization to further improve an enzymatic mix used as feed additive**  
Olivier Guais, Adisseo France SAS, France
- 11:30 – 12:30      2 short presentations, 15 minutes each
- 12:30 – 14:00      Lunch in Room x

**Session 7: Biocatalysis/enzyme engineering/Sustainable development**

- 14:00 – 14:30      **Enzymatic biomass utilization and modification**  
Anu Koivula, VTT Technical Research Centre of Finland Ltd, Finland
- 14:30 – 15:00      **Directed evolution of a swiss knife ligninase: The unspecific peroxygenase**  
Miguel Alcalde, Institute of Catalysis, ICP, CSIC, Madrid, Spain
- 15:00 – 15:30      **Experiment-based computational method for proper annotation of the molecular function of enzymes**  
Véronique De Berardinis, Genoscope, CEA, france
- 15:30 – 16:00      Coffee break in the poster area
- 16:00 – 16:20      **TBD**  
Karl-Heinz Maure, AB Enzymes GmbH, Germany
- 16:20 – 16:40      **Plastics and enzymes: A successful marriage**  
Alain Marty, Carbios, France



**Thursday, September 28, 2017 (continued)**

16:40 – 17:00	<b>Soluble carbohydrate fiber production for food ingredient applications</b> Robert Dicosimo, DuPont Industrial Biosciences, USA
17:00 – 17:20	<b>Finding the right molecule - knowledge-driven enzyme discovery</b> Wolfgang Aehle, BRAIN AG, Germany
17:20 – 18:00	Short break
18:00 – 19:00	Enzyme Engineering award
19:00	Gala dinner