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Editors:

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Magali Remaud-Simeon

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Sunday, September 24, 2017

15:00 – 17:45	Conference check-in (Pierre Baudis Congress Center, Level 1, Concorde Foyer)
17:45 – 18:00	Welcome Remarks (Conference chairs and ECI liaison)
18:00 – 19:00	Plenary lecture Biocatalysts for a biological chemistry: Bringing new chemistry to life1 Frances Arnold, California Institute of Technology, USA
19:00 – 20:00	Welcome reception (Hotel Novotel)

NOTES

- *Technical Sessions will be in Concorde 1 in the Pierre Baudis Congress Center.*
- *Poster sessions will be in the Concorde Foyer in the Pierre Baudis Congress Center.*
- *Lunches will be in Concorde 2 in the Pierre Baudis Congress Center.*
- *Dinner locations are noted in the program.*
- *The ECI office will be in the Mermoz Room (Mezzanine Level, Pierre Baudis Congress Center).*
- *Audio, still photo and video recording by any device (e.g., cameras, cell phones, laptops, PDAs, watches) is strictly prohibited during the technical sessions, unless prior permission has been granted by the author and ECI.*
- *Speakers – Please have your presentation loaded onto the conference computer prior to the session start (preferably the day before).*
- *Speakers – Please leave at least 3-5 minutes for questions and discussion.*
- *Please do not smoke at any conference functions.*
- *Turn your mobile telephones to vibrate or off during technical sessions.*
- *Please write your name on your program so that it can be returned to you if lost or misplaced.*
- *After the conference, ECI will send an updated participant list to all participants. Please check your listing now and if it needs updating, you may correct it at any time by logging into your ECI account.*

Monday, September 25, 2017

Session 1: Enzyme engineering and synthetic biology

Session Chairs: Bernard Hauer and Joelle Pelletier

Sponsored by L'Oreal

- 08:30 – 09:00 **Programmable DNA-guided artificial restriction enzymes: Discovery, engineering, and applications2**
Huimin Zhao, University of Illinois at Urbana-Champaign, USA
- 09:00 – 09:30 **Towards high-value chemicals production harnessing synthetic biology3**
Eriko Takano, University of Manchester, United Kingdom
- 09:30 – 10:00 **Discovery and engineering systems for multi-enzyme catalysis4**
Claudia Schmidt-Dannert, University of Minnesota, USA
- 10:00 – 10:20 **Enhanced biological production of industrial products through integrated approachesN/A**
Ian Fotheringham, Ingenza, Ltd., United Kingdom
- 10:20 – 10:50 Coffee break in the poster area
Sponsored by AB Enzymes GmbH
- 10:50 – 11:20 **Designer enzymes for industrial applications5**
Daniela Grabs, Arzeda Corporation, USA
- 11:20 – 11:40 **Using the CODEEVOLVER® directed evolution platform to create improved enzymes for molecular diagnostics6**
Vesna Mitchell, Codexis, Inc., USA
- 11:40 – 12:00 **Bio-Isobutene production: When the key enzymes are nowhere to be found7**
François Stricher, Global Bioenergies, France
- 12:00 – 12:20 **Aviation biofuels: How are enzymes deemed to play a critical role in the development of sustainable solutions?.....8**
Olivier Rolland, Boeing, France
- 12:20 – 14:00 Lunch
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Session Chairs: Stefan Lutz and Anu Koivula
- 14:00 – 14:30 **Computational design of reprogrammed and new protein functions.....9**
Tanja Kortemme, University of California, San Francisco, USA
- 14:30 – 15:00 **“Bio” catalysis for energy: Enzymes, artificial enzymes and bioinspired catalyst10**
Marc Fontecave, Collège De France, France

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Don Hilvert, ETH-Zurich, Switzerland
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G rard Roelfes, University of Groningen, Netherlands
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Isabelle Andr , LISBP-INSA, France
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- 17:10 – 17:22 **Enzyme activity by design: An artificial rhodium hydroformylase for linear
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Amanda Jarvis, University of St. Andrews, United Kingdom
- 17:22 – 17:34 **Reaction dynamics analysis of an E. coli protein translation system by
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Tomoaki Matsuura, Osaka University, Japan
- 17:34 – 17:46 **Computationally designed libraries expand the functional scope of
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Olga Khersonsky, Weizmann Institute of Science, Israel
- 17:46 – 17:58 **Novel quantum mechanics based engineering approach enables
transaminase to convert bulky ketone substrates17**
Pravin Kumar, Quantumzyme LLP, India
- 18:00 – 20:10 Poster Session / Social hour
- 20:15 Dinner at Hotel Mercure

Tuesday, September 26, 2017

Session 3: Structure/activity/Dynamic /Evolution

Session Chairs: Claudia Schmidt Dannert and Huimin Zhao

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Dorothee Kern, Brandeis University, USA
- 09:00 – 09:30 **The fourth dimension: Accounting for dynamics when engineering enzymes19**
Joelle Pelletier, University of Montreal, Canada
- 09:30 – 10:00 **KnowVolution: Redesigning enzymes for innovations20**
Ulrich Schwaneberg, RWTH Aachen, Germany
- 10:00 – 10:15 **Directed evolution of a fluorinase for improved fluorination efficiency on a non-native substrate21**
Huihua Sun, Metabolic Engineering Research Laboratory (MERL), Singapore
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Brynne C. Stanton, Ginkgo Bioworks, USA
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Sponsored by the Japanese Society of Enzyme Engineering
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Vincent G. H. Eijsink, Norwegian University of Life Sciences, Norway
- 11:30 – 11:50 **Lessons from data-driven stabilization of industrial enzymes24**
Jens E. Nielsen, Novozymes, Denmark
- 11:50 – 12:05 **Redesign of water networks for efficient biocatalysis25**
Per-Olof Syrén, KTH Royal Institute of Technology, Sweden
- 12:05 – 12:25 **Behind the scenes: Science that drives Illumina's sequencing chemistry.....26**
Amirali Kia, Illumina Inc., USA
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Bernard Henrissat, AFMB – CNRS, France
- 14:30 – 15:00 **In silico methods in enzyme screening and gene expression28**
Yasuhisa Asano, Toyama Prefectural University, Japan

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Bernhard Hauer, University of Stuttgart, Germany
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Sponsored by Quantumzyme LLP
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Florian Hollfelder, University of Cambridge, United Kingdom
- 16:30 – 17:00 **High-throughput functional metagenomics for the discovery of glycan metabolizing pathways31**
Alexandra Tauzin, LISBP/INSA University Toulouse, France
- 17:00 – 17:30 **Experiment-based computational method for proper annotation of the molecular function of enzymes32**
Véronique De Berardinis, Genoscope, CEA, France
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David Ackerley, Victoria University of Wellington, New Zealand
- 17:47 – 17:59 **Metagenomics and sequence similarity networks expose cryptic sequence space to enable enzyme discovery and enhance engineering strategies.....34**
Janine Copp, University of British Columbia, Canada
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Michihiko Kobayashi, The University of Tsukuba, Japan
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Gregory Arnal, University of British Columbia, Canada
- 18:23 – 18:35 **New glucose isomerase - fit for biorefinery challenge37**
Klara Birikh, MetGen, Finland
- 18:35 – 20:10 Poster session / Social hour
- 20:15 Dinner at Hotel Mercure

Wednesday, September 27, 2017

Session 5: Biocatalysis/Engineering/Chemicals

Session Chairs: Daniela Grabs and Yasuhisa Asano

Sponsored by Givaudan Schweiz AG

- 08:30 – 09:00 **Expanding substrate scope and altering stereopreference of enzymes through advanced protein engineering38**
Uwe Bornscheuer, Greifswald University, Germany
- 09:00 – 09:30 **Engineering biocatalytic nanoreactors39**
Stefan Lutz, Emory University, USA
- 09:30 – 10:00 **Computational library design and screening: Creating elephant paths in enzyme evolution40**
Dick Janssen, University of Groningen, Netherlands
- 10:00 – 10:15 **Recognition of l- β -homomethionine by methionyl-trna synthetase41**
Giuliano Negro, Ecole Polytechnique, Université Paris-Saclay, France
- 10:15 – 10:30 **Enzyme evolution and engineering using insertions and deletions42**
Stephane Emond, University of Cambridge, United Kingdom
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Sponsored by Novozymes
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Kurt Faber, University of Graz, Austria
- 11:30 – 11:50 **Biocatalysis: We create chemistry - with a little help from enzymes44**
Kai Baldenius, BASF SE, Germany
- 11:50 – 12:02 **Enzymatic glycosylation of Ellagic acid45**
Maude Brossat, L'Oréal Research & Innovation, Advanced Research, Aulnay-sous-Bois, France
- 12:02 – 12:14 **Engineering of haloalkane dehalogenase enantioselectivity towards β bromoalkanes: Open-solvated versus occluded-desolvated active sites46**
Radka Chaloupkova, Masaryk University, Czech Republic
- 12:14 – 12:26 **Engineering the substrate scope of the Fe(II) dependent halogenase WeiO1547**
Sabrina Hoebenreich, Fachbereich Chemie Philipps-Universität Marburg, Germany
- 12:30 Free afternoon – Boxed lunches will be distributed at check-in area (special needs lunch request must show card distributed at check-in the receive special lunch)
- 13:15 Meet tour buses in front of Hotel Mercure

Wednesday, September 27, 2017 (continued)

- | | |
|-------|---|
| 18:00 | Bus from Citi De L'Espace tour returns |
| 19:00 | Buses from Albi and Carcassonne tours return |
| 19:01 | Dinner on your own in Toulouse (many restaurants and outdoor cafes in Capitole) |

Thursday, September 28, 2017

Session 6: Biocatalysis/Engineering/Process FFH

Session Chairs: Dick Janssen and Maude Brossat

- 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 evolution48**
Steve Withers, University of British Columbia, USA
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Byung-Gee Kim, Seoul National University, Korea
- 09:30 – 10:00 **Engineering chitin deacetylases for the biotechnological production of patterned chitosans50**
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 design51**
Jan Metske Van der Laan, DSM Food Specialties, Netherlands
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- 10:50 – 11:10 **Glucan dendrimer for carbohydrate drugs52**
Takashi Kuriki, Ezaki Glico Co., Ltd., Japan
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Olivier Guais, Adisseo France SAS, France
- 11:30 – 11:42 **Bacillus subtilis cell factory converting phytic acid into scyllo-inositol, a therapeutic agent for Alzheimer's disease54**
Ken-ichi Yoshida, Kobe University, Japan
- 11:42 – 11:54 **New insights in bacillus subtilis levansucrase mechanism and applications55**
Agustin Lopez Munguia, IBt-UNAM, Mexico
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David Daudé, Gene&GreenTK, France
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Yves Briers, Ghent University, Belgium
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Yasuaki Takakura, Ajinomoto Co., Inc., Japan
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Session Chairs: Magali Remaud-Simeon and Byung-Gee Kim

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Robert DiCosimo, DuPont Industrial Biosciences, USA
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Alain Marty, Carbios, France
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Wolfgang Ahle, BRAIN AG, Germany
- 16:30 – 16:42 **Increased trans-glycosylation activity of hexosaminidases for synthesis of human milk oligosaccharides63**
Jan Muschiol, Technical University of Denmark, Denmark
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Yoshihiko Hirose, Enzyme Application Consultant, Japan
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- 17 :30 – 18 :30 **Enzyme Engineering Award Lecture**
- 18 :30 – 18 :40 **Announcement of winners of Student Poster Competition**
- 18 :40 **Closing Remarks by Conference Chairs**
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