

Draft program Novel Enzymes 2023

March 28th – 31st, 2023

University of Greifswald, Campus Löfflerstrasse
Ernst-Lohmeyer-Platz 6, Greifswald, Germany

Supported by the European Society of Applied Biocatalysis (ESAB)

Organizers:

Uwe Bornscheuer and Dominique Böttcher
University of Greifswald, Greifswald, Germany

Preliminary Program:

Tuesday, March 28th

18.00-19.00 Registration, mounting of posters

Session I

19.00-19.05 Opening remarks (U. Bornscheuer)

19.05-19.55 **Keynote Lecture I: Jiří Damborský** (Masaryk University, CZ): "Computational mining of novel enzymes by EnzymeMiner"

20.00-22.00 Welcome reception and poster session

Wednesday, March 29th

8.00-9.00 Registration

Session II

Discussion leader: Jiří Damborský

09.00-09.50 **Keynote Lecture II: Florian Hollfelder** (University of Cambridge, UK): "Rules and tools for identifying and evolving promiscuous biocatalysts"

09.55-10.25 **Burkhard Seelig** (University of Minnesota, US): "Engineering unnatural enzymes by *in vitro* selections"

10.30-11.10 Coffee break

11.15-11.45 **Henk-Jan Joosten** (Bio-Product, NL): "Accurate mutation prediction by combining big data from 3DM with machine learning"

11.50-12.20 **Ingmar Schuster** (Exazyme, DE): "In-silico protein engineering for the masses"

12.25-13.25 Lunch

Session III

Discussion leader: Woody Fessner

13.30-14.20 **Keynote Lecture III: Rebecca Buller** (Zürich, CH): "Evolving Fe/α-ketoglutarate-dependent halogenases"

14.25-14.55 **Bernhard Hauer** (University of Stuttgart, DE): "Novel reactions to derivatize *N*-heterocyclic compounds"

15.00-15.30 **Stefan Lutz** (Codexis, US): "Engineering Enzyme Products"

15.35-16.05 **Changzhu Wu** (University of Southern Denmark, UK): "Protein-polymer conjugates as new type of artificial enzymes"

- 16.10-16.40 **Jeremy Tame** (Yokohama City University, JP): "The role of dynamics in natural and man-made enzymes"
- 16.45-18.15 Poster Session I with snacks and drinks

Session IV

Discussion leader: Rebecca Buller

- 18.20-18.50 **Simon Godehard** (BRAIN Biotech AG, DE): "BRAIN SeqPool: Harnessing natural diversity for enzyme discovery"
- 18.55-19.25 **Martin Schürmann** (InnoSyn B.V., NL): "Novel methods and processes to supply and regenerate biochemical cofactors"
- 19.30-20.00 **Francesco Mutti** (University of Amsterdam, NL): "An alcohol aminase for the direct conversion of alcohol into an amine"
- Free evening

Thursday, March 30th

Session V

Discussion leader: Bernhard Hauer

- 08.30-09.20 **Keynote lecture IV: Sandy Schmidt** (University of Groningen, NL): "Illuminating biocatalysis: using the power of light to drive enzymatic reactions"
- 09.25-09.55 **Hans Adrian Bunzel** (ETH Zurich, CH): "Photocatalytic enzymes by computational design and directed evolution"
- 10.00-10.40 Coffee break
- 10.45-11.15 **Ioannis Pavlidis** (University of Crete, GR): "Identification of CAZymes for refining seaweed biomass"
- 11.20-11.50 **Thomas Bayer** (University of Greifswald, DE): "Biosensor-based detection of metabolites and programming of microbial cell factories"
- 11.55-12.25 **Erik deVries** (Enzymicals AG, DE): "An SME's perspective on industrial biocatalytic process development with novel enzymes"
- 12.30-13.30 Lunch

Session VI

Discussion leader: Sandy Schmidt

- 13.35-14.25 **Keynote lecture V: Alain Marty** (Carbios, FR): "PET recycling: from enzyme and process optimization to an industrial plant"
- 14.30-15.00 **Anthony Green** (University of Manchester, UK): "Building enzymes with new function".
- 15.05-15.45 Coffee break
- 15.50-16.20 **Per-Olof Syrén** (KTH Stockholm, SE): "Biocatalytic polymer synthesis and recycling"
- 16.25-16.55 **Martin Weissenborn** (Halle, DE): "Beyond directed evolution: identifying new enzymes for organic chemistry"
- 17.00-18.00 Poster Session II with coffee/tea
- 19.00-22:30 Conference Dinner at Stadthalle „Kaisersaal" (registration required)

Friday, March 31th

Session VII

Discussion leader: Ioannis Pavlidis

- 08.30-09.20 **Keynote lecture VI: Florian Rudroff** (TU Wien, AT): "Flavin-dependent enzymes and their remarkable properties and applications"
- 09.25-09.55 **Christian Schnepel** (Manchester, UK): "Retasking carboxylic acid reductases towards biocatalytic amide bond formation"
- 10.00-10.30 **Woody Fessner** (TU Darmstadt, DE): "Engineering enzymes for non-natural application scope"
- 10.35-11.15 Coffee break
- 11.20-11.50 **Margit Winkler** (TU Graz, AT): "Disruptive news about enzymatic carboxylic acid reduction"
- 11.55-12.25 **Jörg Pietruszka** (Forschungszentrum Jülich, DE): "Methyltransferases in the synthesis of pyrroloindoles"

Closing remarks (U. Bornscheuer)