Poster Presentations
(July 9, 2019)

1. Engineering bacterial nitroreductases for anticancer gene therapy and targeted cell ablation
Abigail V. Sharrock, Victoria University of Wellington, New Zealand

2. REDUCE®: A tool to accelerate product-oriented enzyme development
Alexander Pelzer, BRAIN AG, Germany

3. QM/MM MD studies of polyester synthesis/hydrolysis
Alexandra T. P. Carvalho, CNC, Coimbra University, Portugal

4. Directed evolution of the non-ribosomal peptide synthetase BpsA to enable recognition by the human Sfp-like PPTase
Alistair Sinclair Brown, Victoria University of Wellington, New Zealand

5. FFT-Mutant kit: A novel library to design de novo mutations using mathematical modeling, data mining and pattern recognition techniques
Alvaro Olivera-Nappa, University of Chile, Chile

6. Engineering the surface of enzymes for the fabrication of robust organic-inorganic biohybrids
Ana Beloqui, CICnanoGUNE, Spain

7. Broadening substrate specificity across short-chain dehydrogenase reductases (SDRs)
Andreas Bommarius, Georgia Institute of Technology, USA

8. Enzymatic biotransformation of adipic acid to 6-aminocaproic acid and 1,6-hexamethylenediamine using engineered carboxylic acid reductases and aminotransferases
Anna Khusnutdinova, University of Toronto, Canada

9. Design and evolution of enzymes with non-canonical catalytic mechanisms
Anthony Green, University of Manchester, United Kingdom

10. New pathways for sustainable terpene materials from wood
Arne Stamm, KTH Royal Institute of Technology, Sweden

11. Innovate with enzymes – From protein engineering to industrial applications
Audrey Robic, Protéus by Seqens, France

12. Deletion studies for elucidating the role of Streptomyces griseus ChiC non-catalytic residues
Ayokunmi Omolola Oyeleye, Universiti Putra Malaysia, Malaysia

13. Highly oxygen-stable CO2 reductase-catalyzed bioconversion of carbon dioxide into formate in electrochemical reactor
Byoung Wook Jeon, Ulsan National Institute of Science and Technology, South Korea
14. **Enzyme-catalyzed spiroring formation in marine actinomycetal natural products**  
Changsheng Zhang, South China Sea Institute of Oceanology, Chinese Academy of Sciences, China

15. **Structural and biochemical insights into substrate specificity and stereo-selectivity of diacetyl reductases in the biosynthesis of 2,3-butanediol isomers**  
Chao Chen, University of Toronto, Canada

16. **Cobalamin dependent methylation and demethylation by veratrol O-demethylase**  
Christopher Grimm, University of Graz, Austria

17. **Design of glyco-linkers at multiple structural levels to modulate enzyme stability and catalytic efficiency**  
Chun Li, Beijing Institute of Technology, China

18. **Light-driven kinetic resolution of α-functionalized acids enabled by engineered Fatty Acid Photodecarboxylase**  
Danyang Li, Zhejiang University, China

19. **Biosensor tools for enzyme and enzyme pathway engineering towards biocatalytic transformation of cellulosic feedstock to nylon precursors**  
David Kwan, Concordia University, Canada

20. **Surface as key to success? Engineering of polyesterases**  
Doris Ribitsch, ACIB - Austrian Centre of Industrial Biotechnology, Austria

21. **High-throughput enzyme discovery and engineering for bioprocess optimization**  
Doug Hattendorf, Zymergen, USA

22. **Engineering PET-degrading enzymes for biorecycling and bioremediation**  
En Ze Linda Zhong, Massachusetts Institute of Technology, USA

23. **Genetic biosensor enables in vivo glycosyltransferase screening**  
Evan K. Chaberski, DTU Biosustain, Denmark

24. **Cofactor switch: Development of A Nad+-dependent cascade for the production of ursodeoxycholic acid (UDCA)**  
Fabio Tonin, TU Delft, Netherlands

25. **Structural basis for substrate recognition, substrate preference and catalytic mechanism in a novel multidomain alginate lyase Dp0100**  
Fu-Li Li, Chinese Academy of Sciences, China

26. **CaverDock: Software tool for fast screening of un/binding of ligands in protein engineering**  
Gaspar Pinto, Masaryk University, Czech Republic

27. **Conformational dynamics-guided loop engineering of an alcohol dehydrogenase toward enantioselective reduction of difficult-to-reduce ketones**  
Ge Qu, Tianjin Institute of Industrial Biotechnology, Chinese Academy of Sciences, China
28. **Prenylated Flavin-dependent decarboxylases: Structure-guided engineering and synthetic applicability**  
   Godwin Aleku, Manchester Institute of Biotechnology, University of Manchester, United Kingdom

29. **The role of cavity residue leucine 95 and channel residues glutamine 204, aspartic acid 211, and phenylalanine 269 on toluene o-xylene monooxygenase activity and regiospecificity**  
   Gonul Vardar-Schara, California State University Stanislaus, USA

30. **Rational engineering of a hyperstable glycosyltransferase for blue denim dyeing**  
   Gonzalo Bidart, The Novo Nordisk Foundation Center for Biosustainability - Technical University of Denmark, Denmark

31. **Directed evolution of glycosyltransferase for the artificial biosynthesis of natural product glycosides**  
   Guangyu Yang, Shanghai Jiao Tong University, China

32. **Access tunnel engineering to optimize the catalytic cycle of carbohydrate hydrolases with buried active site**  
   Guimin Zhang, Hubei University, China

33. **Sustainable biocatalytic synthesis of β-hydroxyl-α-amino acids on an industrial scale**  
   Haibin Chen, Enzymaster (Ningbo) Bio-Engineering Co., Ltd., China

34. **Smart engineering of various enzymes for asymmetric synthesis of chiral molecules on industrial scale**  
   Haibin Chen, Enzymaster (Ningbo) Bio-Engineering Co., Ltd., China

35. **Structural synthetic biology strategy for the design of a new metabolic pathway**  
   Hak-Sung Kim, KAIST, South Korea

36. **Enzyme Engineering towards a Fully Biocatalytic Manufacturing Route for MK-8591**  
   Hao Yang, Merck & Co., Inc., USA

37. **3DM’s novel protein discovery and optimization platform**  
   Henk Jan Joosten, Bio-Prodict, Netherlands

38. **Identification of the residues that are responsible for improving the activities of cyanobacterial enzymes for hydrocarbon biosynthesis**  
   Hisashi Kudo, University of Tokyo, Japan

39. **A coupled chlorinase-fluorinase system with high efficiency of trans-halogenation and a shared substrate tolerance**  
   Huihua Sun, Agency for Science, Technology, and Research, Singapore

40. **A naked-eye detection of cholesterol using enzyme cascade reactions on chitosan beads**  
   Hyunbeom Lee, Korea Institute of Science and Technology, South Korea

41. **Towards the de novo design of metallohydrolases**  
   Indrek Kalvet, University of Washington, USA
42. **Therapeutic protein expression platform of microbial system**  
   Jen-Wei Chang, Development Center for Biotechnology/Institute of Biologics, Taiwan

43. **Novel maltogenic amylase CoMA may contribute to the accumulation of extracellular maltose in corallococcus**  
   Jie Zhou, Nanjing Tech University, China

44. **Functional assessment of hydrophilic domains of lea proteins from distant organisms**  
   Jin Wang, Biotechnology Research Institute, Chinese Academy of Agricultural Sciences, China

45. **Protein engineering of L-Amino acid oxidase for relieving product inhibition**  
   Jing Wu, The school of Pharmaceutical Science, China

46. **In-silico based redesign of CO-dehydrogenase catalyzing the oxidation of toxic waste CO gas for improved O2 resistance and mediator affinity**  
   Jinhee Lee, UNIST, South Korea

47. **Production and characterization of pectinase enzyme from fungal isolates in Nepal**  
   Jitendra Upadhyaya, Kathmandu University, Nepal

48. **Optimization and validation of target alcohol dehydrogenases using molecular docking and in-silico engineering approaches**  
   Joana Oliveira, CEB- Center of Biological Engineering, University of Minho, Portugal

49. **Kinetics of glycosyl hydrolase family 2 beta-glucuronidases**  
   John J. Tomashek, Integrated Micro-Chromatography Systems, USA

50. **Variants of glycosyl hydrolase family 2 beta-glucuronidases**  
   John J. Tomashek, Integrated Micro-Chromatography Systems, USA

51. **The growing need to assess the kinetic stability of enzymes**  
   John M. Woodley, Technical University of Denmark, Denmark

52. **Molecular dynamics provides insights into an engineered oxidoreductase with altered cofactor specificity**  
   Josef M. Sperl, Technical University of Munich, Germany

53. **Improving the thermostability of glutamate decarboxylase by consensus mutagenesis**  
   Jun Huang, Zhejiang university of Science and Technology, China

54. **Engineering substrate specificity into a promiscuous ancestral diterpene synthase**  
   Karen Schriever, KTH, Royal Institute of Technology, Sweden

55. **TreasureDrop – enzyme engineering for applied biocatalysis using microfluidics**  
   Katharina Neufeld, Johnson Matthey, United Kingdom

56. **Active-site structure of D-threonine aldolase from a green alga Chlamydomonas reinhardtii**  
   Katsushi Nishimura, Nihon University, Japan

57. **Construction of thermostable enzymes**  
   Kazuhiko Ishikawa, National Institute of Advanced Industrial Science and Technology (AIST), Japan
<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>58</td>
<td>Using E. coli NfsA as a model to improve our understanding of enzyme engineering</td>
<td>Kelsi R. Hall, Victoria University of Wellington, New Zealand</td>
</tr>
<tr>
<td>59</td>
<td>In vivo and in vitro FMN prenylation and (de)carboxylase activation under aerobic conditions</td>
<td>Khorcheska Batyrova, University of Toronto, Canada</td>
</tr>
<tr>
<td>60</td>
<td>Expanding the chemical Space of heparan sulfate N-sulfo analogs via directed evolution of glycosyltransferase</td>
<td>Lan Na, University of California, Daivs, USA</td>
</tr>
<tr>
<td>61</td>
<td>Directly covalent immobilization of Candida antarctica lipase B on oxidized aspen powder by introducing poly-lysines</td>
<td>Liangyu Zheng, Jilin University, China</td>
</tr>
<tr>
<td>62</td>
<td>New ligninolytic enzymes by directed evolution</td>
<td>Lígia O. Martins, Universidade Nova De Lisbos, Instituto De Tecnologia Quimica D Biologica (ITQB), Portugal</td>
</tr>
<tr>
<td>63</td>
<td>Enhancing the catalytic stability of the L-aspartate α-decarboxylase from Corynebacterium glutamicum by directed evolution</td>
<td>Liming Liu, Jiangnan University, China</td>
</tr>
<tr>
<td>64</td>
<td>Efficient production of phenylpropionic acids by an amino-group-changing biocatalytic cascade</td>
<td>Liming Liu, Jiangnan University, China</td>
</tr>
<tr>
<td>65</td>
<td>Protein dynamics at slow timescales in engineered β-lactamases does not limit evolvability</td>
<td>Lorea Alejaldre, Universite de Montreal, Canada</td>
</tr>
<tr>
<td>66</td>
<td>Controlling the fatty acid hydroxylation regioselectivity of CYP152A1 (P450Bsb) by active site engineering</td>
<td>Lucas Hammerer, ACIB, University of Graz, Austria</td>
</tr>
<tr>
<td>67</td>
<td>Computational study of the structure-function relationship of an artificial Friedel-Crafts alkylase</td>
<td>Lur Alonso-Cotchico, University of Groningen, Netherlands</td>
</tr>
<tr>
<td>68</td>
<td>Understanding enzymes specificities as a tool for cofactor engineering</td>
<td>Madhuri Gade, OIST Okinawa Japan, Japan</td>
</tr>
<tr>
<td>69</td>
<td>A structure-based approach to control the size and linkage-type of sucrose derived alpha-glucans</td>
<td>Magali Remaud-Simeon, LISBP/INSA Toulouse, University of Toulouse, France</td>
</tr>
<tr>
<td>70</td>
<td>Engineering the biosynthesis of non-ribosomal peptides</td>
<td>Mark Jonathan Calcott, Victoria University of Wellington, New Zealand</td>
</tr>
<tr>
<td>71</td>
<td>Identification and engineering of a Dye-Decolorizing Peroxidase (DyP) for C—C-bond forming carbene-transfer reactions</td>
<td>Martin Weissenborn, Leibniz-Institut für Pflanzenbiochemie &amp; MLU Halle Wittenberg, Germany</td>
</tr>
<tr>
<td>Page</td>
<td>Title</td>
<td>Author(s)</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>72.</td>
<td>The application of computational chemistry and biology in rational redesign of enzymes as biocatalysts</td>
<td>Meilan Huang, Queen's University Belfast, United Kingdom</td>
</tr>
<tr>
<td>73.</td>
<td>Purification and pressure dependence of alanine racemase from the psychro-piezophilic bacterium shewanella violacea DSS 12</td>
<td>Minoru Tanigawa, Nihon University, Japan</td>
</tr>
<tr>
<td>74.</td>
<td>Cloning and expression of a serine racemase gene homologue of the green alga Chlamydomonas reinhardtii and characterization of the gene product</td>
<td>Miya Koike, Nihon University, Japan</td>
</tr>
<tr>
<td>75.</td>
<td>Exploring the potential of ancestral phenylalanine/tyrosine ammonia-lyases for therapeutic applications</td>
<td>Natalie Marie Hendrikse, KTH Royal Institute of Technology, Sweden</td>
</tr>
<tr>
<td>76.</td>
<td>Hydrogen peroxide-dependent hydroxylation of phloretin by Cyp102a1</td>
<td>Ngoc Anh Nguyen, Chonnam National University, South Korea</td>
</tr>
<tr>
<td>77.</td>
<td>Molecular packaging of biocatalysts using a robust protein cage</td>
<td>Nikola Loncar, University of Groningen, Netherlands</td>
</tr>
<tr>
<td>78.</td>
<td>Preparation of pectate lyase/Cu3(PO4)2 hybrid nanoflower and its catalytic performance as an immobilized enzyme</td>
<td>Pan Wu, Hubei University, China</td>
</tr>
<tr>
<td>79.</td>
<td>Fungal peroxygenase chimera identified by sub-domain shuffling and split-gfp reveal retained activity and altered specificity</td>
<td>Pascal Püllmann, Leibniz IPB Halle, Germany</td>
</tr>
<tr>
<td>80.</td>
<td>Purification and characterization of a novel alginate lyase from the marine bacterium bacillus sp. Alg07</td>
<td>Peng Chen, Tianjin Institute of Industrial Biotechnology, Chinese Academy of Sciences, China</td>
</tr>
<tr>
<td>81.</td>
<td>Oleaginous yeast metabolic engineering to expand nature's biosynthetic capacity</td>
<td>Peng Xu, University of Maryland Baltimore County, USA</td>
</tr>
<tr>
<td>82.</td>
<td>A retrobiosynthetic approach to generate terpene-derived polymers</td>
<td>Per-Olof Syrén, KTH Royal Institute of Technology, Sweden</td>
</tr>
<tr>
<td>83.</td>
<td>Engineering saccharomyces cerevisiae as cell factory for high-level ginsenosides production</td>
<td>Pingping Wang, CAS Key Laboratory of Synthetic Biology, Shanghai Institute of Plant Physiology and Ecology, Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences, China</td>
</tr>
<tr>
<td>84.</td>
<td>Engineering of a specific CYP450 for an industrial process shows 700-fold increase in activity with Kcat of 6.2 s-1 - Residues causing Hydrogen Migration and Double Hydrogen Abstraction at Δx Carbon identified by Quantum Mechanics revealed to be the game</td>
<td>Pravin Kumar R, Kcat Enzymatic Private Limited, India</td>
</tr>
</tbody>
</table>
85. Enabling medium-chain fatty acid production in yeast via high-throughput MALDI MS-based enzyme engineering
Pu Xue, University of Illinois at Urbana-Champaign, USA

86. Engineering alcohol oxidases for substrate scope and their application in flow and cascade biocatalysis
Rachel Heath, University of Manchester, United Kingdom

87. Engineering of a multi-enzyme platform for the synthesis of activated sugars
Reza Mahour, Max Planck Institute for Dynamics of Complex Technical Systems, Germany

88. Multistate computational enzyme redesign
Roberto Chica, University of Ottawa, Canada

89. Using protein engineering to accelerate implementation of continuous biocatalysis for API synthesis
Rowan Lindeque, Technical University of Denmark, Denmark

90. Innov'SAR: A new approach for protein engineering and screening
Rudy Pandjaitan, PEACCEL, France

91. Discovery and engineering new Fe-S dependent dehydratases for application in the sustainable production of fine chemicals
Samuel Sutiono, Technical University of Munich, Germany

92. A data-driven approach for exploiting enzyme promiscuity as a means to predict novel biochemical reactions
Sanjan TP Gupta, University of Wisconsin Madison, USA

93. Engineering enzymes with non-canonical active site functionality
Sarah L. Lovelock, University of Manchester, United Kingdom

94. Enzyme engineering of fungal-derived FAD-GDH by circular permutation
Satoru Ishihara, Amano Enzyme Inc., Japan

95. Multi-engineering of Microbial Cytochrome P450 Enzymes
Shengying Li, Shandong University, China

96. In silico approach to better understand the role of active site residue
Shivakumar Venkataraju, Quantumzyme LLP, India

97. Application of directed divergent evolution strategy in natural product biosynthesis
Shuang-Yan Tang, Institute of Microbiology, Chinese Academy of Sciences, China

98. A technology platform for in vitro transcription and translation of enzymes in microcompartments
Silvia Calabrese, Hahn-Schickard, Germany

99. Engineering of oxidases for enantioselective oxidation of sec-allylic alcohols
Somayyeh Gandomkar, University of Graz, Austria

100. Design strategy for creating catalytically active metal binding proteins
Stacey Gerben, University of Washington, Baker Group, USA
101. Evolution of the ThDP dependent pyruvate dehydrogenase E1 subunit for the conversion of long chain aliphatic ketoacids
Stefan R. Marsden, Delft University of Technology, Netherlands

102. Phosphotriesterase monomer provides stability and improved stereoselective hydrolysis over the native homodimer
Stephen Kirby, U.S. Army Medical Research Institute of Chemical Defense, USA

103. Engineering of halohydrin hydrogen-halide-lyase (H-lyase) for efficient L-carnitine production
Takanori Akiyama, Mitsubishi Chemical Corporation, Japan

104. NADPH-independent biocatalysis of cytochrome P450 2E1 through direct transfer of photo-induced electrons by flavin
Thien-Kim Le, Chonnam National University, South Korea

105. Improved biomass conversion with Trichoderma reesei beta-glucosidase Cel3A engineered for broader substrate specificity
Thijs Kaper, DuPont, USA

106. Substrate promiscuity in evolved Alcohol Dehydrogenase A (ADH-A)
Thilak Reddy Enugala, Uppsala University, Sweden

107. Unravelling the relationship between substrate selectivity and primary sequence of UDP-glycosyltransferases
Tiia Kittilä, Novo Nordisk Foundation Center for Biosustainability, Denmark

108. Oligopeptides production by a method involving an enzymatic reaction and a subsequent chemical reaction
Tomoko Abe, Tokyo Denki University, Japan

109. A non-natural Nicotinamide cofactor for biotransformation at extreme conditions
Volker Sieber, TU München, Germany

110. Non-active-site residues and conformational networks maintain the catalytic activity of human hexokinase
Wael M. Rabeh, New York University Abu Dhabi, United Arab Emirates

111. Optimization of technology for preparing collagen peptides from sika deer buckskins based on an enzymatic method
Wei Shi, Jinlin University, China

112. In vitro synthetic enzymatic biosystem for fructose 1,6-diphosphate and 2-deoxy D-ribose biosynthesis
Wei Wang, East China University of Science and Technology, China

113. Non-natural cofactor and formate-driven reductive carboxylation of pyruvate
Xiaojia Guo, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, China

114. Designing de novo retroaldolase catalysts
Yakov Kipnis, University of Washington, USA
115. Tailored biosynthesis of pseudosugars against diabetes by repurposing the promiscuous microbial enzymes
Yan Feng, Shanghai Jiao Tong University, China

116. Genetically encoded biosensor for engineering branched-chain higher alcohol production pathway in saccharomyces cerevisiae
Yanfei Zhang, Princeton University, USA

117. Newly discovered enzymes and cascades for the determination of amino acids
Yasuhisa Asano, Toyama Prefectural University, Japan

118. Engineering an aldehyde dehydrogenase via structure based directed evolution for enhancement of 3-hydroxypropionic acid production
Ye Seop Park, Ajou University, South Korea

119. A novel C-terminal protein degron identified in bacterial aldehyde decarbonylases using directed enzyme evolution
Yilan Liu, University of Toronto, Canada

120. Molecular Design and Application of Bacterial Laccase
Yingjiu Zhang, Jilin University, China

121. Enantiocomplementary synthesis of chiral alcohols combining photocatalysis and whole-cell biocatalysis in a one-pot cascade process
Yongzhen Peng, Zhejiang University, China

122. Substrate specificity of tRNA-dependent amide bond-forming enzyme
Yoshimitsu Hamano, Fukui Prefectural University, Japan

123. Engineering of penicillin G acylases for the production of β-lactam antibiotics on an industrial scale
Young Sung Yun, Amicogen, Inc., South Korea

124. Application of Dhap-dependent aldolases for biosynthetizing dendroketose
Yuanxia Sun, Tianjin Institute of Industrial Biotechnology, Chinese Academy of Sciences, China

125. Fusing enzymes to transcription activator LuxR for the rapid creation of metabolite sensors
Yuki Kimura, Chiba University, Japan

126. Enzymatic biosynthesis of glycosaminoglycans and its oligosaccharides
Zhen Kang, Jiangnan University, China

127. Expression and characterization of keratinase from Deinococcus gobiensis I-0
Zhengfu Zhou, Biotechnology Research Institute, CAAS, China

128. Laboratory evolution of a carboxylic acid reductase for improving activity and expanding substrate scope
Zhoutong Sun, Tianjin Institute of Industrial Biotechnology, CAS, China
129. **Improving the catalytic activity of isopentenyl phosphate kinase through protein coevolution analysis**
   Xuerong Xing, Tianjin Institute of Industrial Biotechnology, China