

Directing Biosynthesis VII

1-3 July 2024 | Birmingham, UK



Monday 1 July 2024

11:15	Registration and refreshments Lunch from 12:00	
12:45	Welcome and introduction Conference Chair: Kira Weissman	
Session 1: Genetics, enzymology and structural biology of natural product biosynthesis I (Chris Walsh Memorial Session) Session Chair: Jon Clardy		
12:55	Remembering Chris Walsh Jon Clardy <i>Harvard Medical School, USA</i>	
13:00	Gladiolin biosynthesis as a model for understanding complex metabolite assembly by trans-AT polyketide synthases Greg Challis <i>University of Warwick, UK</i>	K01
13:40	Biosynthesis of macrolactams with β-amino acid polyketide starter unit Fumitaka Kudo <i>Tokyo Institute of Technology, Japan</i>	K02
14:20	Elucidation of enigmatic isomerizations in the oximidine biosynthetic pathway Dries De Ruyscher <i>KU Leuven - VIB Center for Microbiology, Belgium</i>	C01
14:40	Unravelling the biosynthetic logic of fungal siderophore biosynthesis Matthew Jenner <i>University of Warwick, UK</i>	C02
15:00	Refreshments	
Session 2: Genetics, enzymology and structural biology of natural product biosynthesis II Session Chair: Matthew Crump		
15:30	Unveiling the inner workings of polyketide synthases for expanded access to biosynthetic products Lou Charkoudian <i>Haverford College, USA</i>	K03
16:10	From crosslinking to cryo-EM – high resolution PKS and NRPS structure elucidation Michael Burkart <i>University of California San Diego, USA</i>	C03
16:30	Structural and functional dynamics of site-specific vanadium-dependent haloperoxidases during a catalytic cycle Shaun McKinnie <i>University of California, Santa Cruz, USA</i>	C04
16:50	Flash poster presentations (odd numbers)	
17:10	Poster session (odd numbers) and refreshments	
18:20	Close of Sessions	

Tuesday 2 July 2024

Session 3: Synthetic biology, metabolic engineering I		
Session Chair: Sarah Barry		
9.00	TBC 2023 Chemical Biology Interface Early Career Prize: Norman Heatley Award Stephen Wallace <i>University of Edinburgh, UK</i>	K04
9.40	Detecting, predicting, and generating biosynthetic gene clusters using large natural-language model Maiko Umemura <i>National Institute of Advanced Industrial Science and Technology (AIST), Japan</i>	C05
10.00	Exploration of sidechain N-acyltransferases as biocatalysts for lipopeptide diversification Anna Lisa Vagstad <i>ETH Zurich, Institute of Microbiology, Switzerland</i>	C06
10:20	One step from garbage? The future of natural product synthesis Russell Cox <i>Leibniz Universitat Hannover, Germany</i>	C07
10:40	Refreshments	
Session 4: Synthetic biology and metabolic engineering II		
(Jim Staunton Memorial Session)		
Session Chair: Barrie Wilkinson		
11:05	Remembering Jim Staunton Barrie Wilkinson <i>John Innes Centre, UK</i>	
11:10	Harnessing plant metabolic diversity for food and health applications Anne Osbourn <i>John Innes Centre, UK</i>	K05
11:50	Microbial synthetic biology for natural products Eriko Takano <i>University of Manchester, UK</i>	K06
12:30	Characterization of a new class of bacterial ribosomal peptides involved in copper stress response Sophie Juenger <i>MNHN-CNRS, France</i>	C08
12.50	Flash poster presentations (even numbers)	
13:10	Lunch with Poster session (even numbers) from 13:50	
Session 5: Industrial applications of natural products and biosynthetic enzymes		
Session Chair: Dominic Campopiano		
15:00	Enzyme discovery, development & production – Interplay of disciplines to provide solutions for industrial challenges Alexander Pelzer <i>BRAIN Biotech, Germany</i>	I01
15:20	TBC Alison Arnold <i>Ingenza, UK</i>	I02
15:40	Synthesizing pharmaceutical intermediates with engineered enzymes David Entwistle <i>Codexis, USA</i>	I03
16:00	TBC Jörg Mampel <i>Ginkgo Bioworks, USA</i>	I04
16:20	Refreshments	
Session 6: Chemical ecology and computational approaches for assessing natural products		
Session Chair: Max Cryle		

16:50	Natural product biosynthesis in underexplored microbial niches Christian Hertweck <i>Leibniz Institute for Natural Product Research, Germany</i>	K07
17:30	From sequence to structure and back again: an open-source framework to connect biosynthetic gene clusters to natural products Marnix Medema <i>Wageningen University, The Netherlands</i>	K08
18:10	Data-driven natural product drug discovery Maximilian Helf <i>Novartis, Switzerland</i>	C09
18:30	Extracting herbicide and antibiotic natural products from a plant-microbe interaction system Zhiwei Qin <i>Beijing Normal University, China</i>	C10
18:50	Close of sessions	
19:30	Conference Dinner – Edgbaston Park Hotel, Birmingham (ticket holders only)	

Wednesday 3 July 2024

9:00	How to fund the transition to independent researcher Robert Bowles <i>Royal Society of Chemistry, UK</i>	
Session 7: Genetics, enzymology and structural biology of natural product biosynthesis III Session Chair: Hai Deng		
9.30	Overproduction, discovery and degradation of terpenoids Tiangang Liu** <i>Shanghai Jiao Tong University, China</i>	K09
10:10	Deciphering the enzymatic logic behind the biosynthesis of peptides armed with β-lactone warheads Guangcai Xu <i>Manchester Institute of Biotechnology, UK</i>	C11
10.30	Enzyme enabled synthesis of biaryl natural products Lauren Murray <i>Monash University, Australia</i>	C12
10:50	Thioholgamides: linking biosynthesis to function Jesko Köhnke <i>Leibniz Universität Hannover, Germany</i>	C13
11:10	Refreshments	
Session 8: Genome and microbiome mining, microbiome engineering Session Chair: Andrew Truman		
11.40	Biosynthesis of bacterial pyrrolizidine alkaloids and production of new derivatives Juliana Effert <i>Max-Planck-Institute for Terrestrial Microbiology, Germany</i>	C14
12:00	Unexpected products in the activity landscape of fungal type III polyketide synthases Kristina Haslinger <i>Rijksuniversiteit Groningen, The Netherlands</i>	C15
12.20	2023 Natural Product Reports Emerging Investigator Lectureship TBC Christine Beemelmans <i>Helmholtz-Institute for Pharmaceutical Research Saarland, Germany</i>	K10
13:00	Promiscuity and its consequences Jon Clardy <i>Harvard Medical School, USA</i>	K11
13:40	Closing remarks & presentation of poster prizes Conference Chair: Kira Weissman	
13:50	Close and lunch	

Please note that the programme is subject to change.

** presenting online