

## PROGRAMME

### Directing Biosynthesis III

19 – 21 September 2012

Exchange Building, Jubilee Campus, University of Nottingham, UK

All oral sessions will take place in Lecture Theatre 2  
Poster presentations will be displayed in rooms C3 and C33

#### Wednesday 19 September

09:30	Registration
10:30	<b>Welcome and introduction</b> Russell Cox, Conference Chair <i>University of Bristol, UK</i>
Session 1A	Modular Polyketide Synthases Chair: Peter Leadlay, University of Cambridge, UK (TBC)
10:40 K01	<b>Keynote: Mechanistic Studies of Novel Biological C-C Bond Formation Reactions: Biosynthesis of Spinosyn A</b> Hung-wen Liu <i>The University of Texas at Austin, USA</i>
11:25 O01	<b>A unique amino acid carrying strategy in the biosynthesis of macrolactam polyketide antibiotics</b> Fumitaka Kudo,* Yuji Shinohara, Tadashi Eguchi <i>Tokyo Institute of Technology, Japan</i>
11:50 O02	<b>Ethyl branch formation by the kirromycin trans-AT-type polyketide synthase</b> E. M. Musiol, A. Kulik, J. Piel, W. Wohlleben, and T. Weber* <i>Eberhard-Karls-Universität Tübingen, Germany</i>
12:15 O03	<b>Synthetic probes for the investigation of polyketide biosynthesis</b> Manuela Tosin <i>University of Warwick, UK</i>
12:40	Lunch
Session 1B	Plants Chair: Anne Osbourn, John Innes Centre, UK
13:40 O04	<b>Ergot Alkaloid Biosynthesis: Establishing Structural Diversity by an Old Yellow Enzyme Homologue</b> Johnathan Cheng <i>John Innes Centre, UK</i>
14:05 O05	<b>Tools for genetic manipulation of algae – exploiting vitamin metabolism</b> Alison G. Smith*, Mark A Scaife, Rosie Young and Saul Purton <i>University of Cambridge, UK</i>
14:30 K02	<b>Keynote: Structure-Based Engineering of Fidelity and Promiscuity in Catalysis by Terpenoid Cyclases</b> David W. Christianson <i>University of Pennsylvania, USA</i>
15:15	Afternoon tea

Session 1C	Award Symposium Chair: Representative of the RSC Chemistry Biology Interface Division
15:45 K03	<b>Award Lecture: Enriching chemical space to drug undruggable targets</b> David R. Spring <i>University of Cambridge, UK</i> Winner of the RSC Norman Heatley Award 2011
16:30 K04	<b>Award Lecture: Circular logic in macrocycles</b> James H. Naismith <i>University of St Andrews, UK</i> Member of Collaborative Computational Project 4 - STFC Rutherford Appleton Laboratory (CCP4), winners of the Rita and John Cornforth Award 2011
17:15 K05	<b>Award Lecture: Roles of Oxygenases in Biosynthesis and the Regulation of Gene Expression</b> Christopher Schofield <i>University of Oxford, UK</i> Winner of the Jeremy Knowles Award 2011
18:00	Poster session and wine reception
19:30	Free evening

## Thursday 20 September

Session 2A	Ribosomal Peptides/Carbohydrates Chair: Barrie Wilkinson, Biotica, UK
09:00 K06	<b>Keynote: Understanding and manipulating antibiotic production in actinomycetes</b> Mervyn Bibb <i>John Innes Centre, Norwich, UK</i>
09:45 O06	<b>Harnessing the thiostrepton biosynthetic machinery</b> Wendy L. Kelly*, Feifei Zhang, and Chaoxuan Li <i>Georgia Institute of Technology, USA</i>
10:10 O07	<b>Mimicking carbohydrates in natural products: biosynthesis of the dioxane unit of alnumycins</b> T. Oja, L. Niiranen, K.D.Klika, P. Mäntsälä, J. Niemi, G. Schneider and M. Metsä-Ketelä* <i>University of Turku, Finland</i>
10:35	Morning coffee
Session 2B	Nonribosomal Peptide Synthetases Chair: Jason Micklefield, University of Manchester, UK
11:05 O08	<b>Pyrrrolamide antibiotics: biosynthetic gene clusters for combinatorial biosynthesis and mutasynthesis</b> Sylvie Lautru*, Audrey Vingadassalon and Jean-Luc Pernodet <i>Université Paris Sud, France</i>
11:30 O09	<b>A stand-alone adenylation domain catalyzes multiple amide-bond formation in streptothricin biosynthesis</b> Chitose Maruyama, Junya Toyoda, Yasuo Kato, Miho Izumikawa, Motoki Takagi, Kazuo Shin-ya, Hajime Katano, Takashi Utagawa, and Yoshimitsu Hamano* <i>Fukui Prefectural University, Japan</i>
11:55 K07	<b>Keynote: Exploring the biosynthesis of complex natural products from the Penicillium genus</b> Yi Tang <i>UCLA, USA</i>
12:40	Lunch

Session 3A	Engineering Chair: Greg Challis, University of Warwick, UK
13:40 O10	<b>Molecular breeding of a fungus producing a precursor molecule suitable for semi-synthesis, based on the dissection of the biosynthetic machinery</b> Motoyoshi Noike, Yusuke Ono, Yuji Araki, Ryo Tanio, Yusuke Higuchi, Nobuo Kato and Tohru Dairi* <i>Hokkaido University, Japan</i>
14:05 O11	<b>Accessing libraries of highly antitumor active ansamycin antibiotics by combined semi- and mutasynthesis</b> Andreas Kirschning* <i>Leibniz Universität Hannover, Germany</i>
14:30 O12	<b>Understanding the program of fungal polyketide biosynthesis – a domain swap approach</b> Katja M. Fisch*, Ahmed A. Yakasai, Jennifer Pedrick, Zahida Wasil, Colin M. Lazarus, Andrew M. Bailey, Russell J. Cox and Thomas J. Simpson <i>University of Bristol, UK</i>
14.55 K08	<b>Keynote: Expanding the Catalytic Repertoires of Biosynthetic Enzymes</b> Ikuro Abe <i>The University of Tokyo, Japan</i>
15:40	Afternoon tea
Session 3B	Iterative Polyketide Synthases Chair: Chris Willis, University of Bristol, UK (TBC)
16:10 K09	<b>RSC Bio-Organic Group Award Lecture: Experiments and speculations about calicheamicin and enediyne biosynthesis</b> Craig A. Townsend <i>Johns Hopkins University, USA</i> Supported by the RSC Bio-Organic Group
16:55 O13	<b>Biosynthetic genes of unknown function in jadomycin biosynthesis: elucidation of function</b> David L. Jakeman <i>Dalhousie University, Canada</i>
17:20 K10	<b>Keynote: Fun with Fungi – Past and Present!</b> Tom Simpson FRS <i>University of Bristol, UK</i>
18:05	Close of session
19:30	Pre-dinner drinks
20:00	Conference Banquet

## Friday 21 September

Session 4A	Genome Mining Chair: Russell Cox, University of Bristol, UK
09:00 K11	<b>Keynote: Biosynthesis in Neglected Bacteria</b> Christian Hertweck <i>Leibniz Institute for Natural Product Research and Infection Biology (HKI), Friedrich-Schiller University Jena, Germany</i>
09:45 O14	<b>Informatic mining of microbiomes for bioactive natural products</b> Ashraf Ibrahim, Lian Yang, Bin Ma and Nathan A. Magarvey* <i>McMaster University, Canada</i>
10:10 O15	<b>A computational perspective on secondary metabolite biosynthesis</b> M.H. Medema*, K. Blin, P. Cimermancic, P. Zakrzewski, T. Paalvast, M. Fischbach, T. Weber, R. Breitling and E. Takano <i>University of Groningen, The Netherlands</i>
10:35 K12	<b>Keynote: Chemical Surprises from an Elusive Bacterium</b> Jörn Piel <i>University of Bonn, Germany</i>
11:20	Morning coffee
Session 4B	Genome Mining and Engineering Chair: Tom Simpson, University of Bristol, UK (TBC)
11:50 O16	<b>Synthetic biotechnology to study and engineer natural product biosynthesis</b> Silke C. Wenzel <i>Saarland University, Germany</i>
12:15 O17	<b>Natural product biosynthesis in entomopathogenic bacteria</b> Helge B. Bode <i>Goethe Universität Frankfurt, Germany</i>
12:40 O18	<b>The <i>Cladosporium fulvum</i> genome reveals a new mechanism that links down-regulation of secondary metabolism genes and biotrophy</b> Jérôme Collemare*, Scott Griffiths, Russell Cox and Pierre de Wit <i>Wageningen University, The Netherlands</i>
13:05 K13	<b>Keynote: Characterizing and engineering diverse C-H bond activation catalysts from microbial natural product systems</b> David H. Sherman <i>University of Michigan, USA</i>
13:50	<b>Closing remarks</b> Russell Cox, Conference Chair <i>University of Bristol, UK</i>
14:00	Lunch and close of conference

\* Denotes presenting author