

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Natural Products and Synthetic Biology: Parts and Pathways (J1)

Scientific Organizers: Jon C. Clardy, Yi Tang and Sean F. Brady

Supported by the Directors' Fund

Translational Chemical Biology (J2)

Scientific Organizers: Hans Ulrich Stilz, Laura L. Kiessling and Mark A. Murcko

January 21-24, 2018 • Resort at Squaw Creek • Olympic Valley, California, USA

Supported by the Directors' Fund

Abstract & Scholarship Deadline: / Abstract Deadline: / Discounted Registration Deadline:

SUNDAY, JANUARY 21

Arrival and Registration

MONDAY, JANUARY 22

Welcome and Keynote Address (J1)

Sir David Hopwood[†], John Innes Centre, UK
Streptomyces in Nature and Medicine

Welcome and Keynote Address (J2)

James E. Bradner[†], Novartis Institutes for BioMedical Research, USA
Bromodomain Inhibition

Mining the Human Microbiome (J1)

Michael A. Fischbach[†], University of California, San Francisco, USA
Computational Approaches to Natural Product Discovery

Emily P. Balskus[†], Harvard University, USA
Discovering Chemistry from the Human Microbiota

Jason M. Crawford[†], Yale University, USA
Secondary Metabolic Pathway-Targeted Metabolomics

Short Talk(s) Chosen from Abstracts

Small Molecular Probes of Gene Expression (J2)

Chuan He[†], University of Chicago, USA
Consequences of Reversible Methylation of DNA and RNA

Matthew David Disney[†], The Scripps Research Institute, USA
Small Molecule Regulators of RNA

Anna K. Mapp[†], University of Michigan, USA
Small Molecule Regulators of Gene Expression

Short Talk(s) Chosen from Abstracts

Mining Environmental Genomes (J1)

Sean F. Brady, Rockefeller University, USA
Culture-Independent Discovery of Natural Products from Soil Metagenomes

Jon C. Clardy, Harvard Medical School, USA
Origin of Chemical Diversity in the Fungus-Growing Ant Symbiosis

Bradley Moore[†], University of California, San Diego, USA
Unusual Flavoenzymes Catalysis in Marine Bacteria

Short Talk Chosen from Abstracts

Pharmacological Probes and Leads (J2)

Brian K. Shoichet[†], University of California, San Francisco, USA
Screening and Computational Docking for New Probes

Lyn H. Jones[†], Pfizer, USA
Criteria for Target Identification

Gerard Drews[†], Cellzome GmbH / GlaxoSmithKline, Germany
Cellular Thermal Shift Assays for Target Identification

Short Talk Chosen from Abstracts

Poster Session 1

TUESDAY, JANUARY 23

Mining Plant and Other Genomes (J1)

Sarah O'Connor[†], John Innes Centre, UK
Biocatalysts from Alkaloid Producing Plants

Elizabeth Sattely[†], Stanford University, USA
The Chemical Logic of Plant Natural Product Biosynthesis

Reshma Shetty[†], Ginkgo Bioworks, Inc., USA
Custom Organism Design

Alessandra S. Eustaquio[†], University of Illinois, USA
Biosynthetic Engineering and Fermentation Media Development Leads to Gram-Scale Production of Spliceostatin Natural Products in Burkholderia

Short Talk(s) Chosen from Abstracts

Modulating Microbes in Health and Diseases (J2)

Dennis C. Liotta[†], Emory University, USA
Drug Discovery for Neglected Disease

Kim Lewis[†], Northeastern University, USA
New Strategies for Antibiotic Discovery

Laura L. Kiessling, University of Wisconsin, Madison, USA
Uncovering and Exploiting Sugars Functioning as Microbial IDs

Michael A. Fischbach[†], University of California, San Francisco, USA
Small Molecules from the Human Microbiota

Short Talk(s) Chosen from Abstracts

Mining Fungal and Other Genomes (J1)

Yi Tang, University of California, Los Angeles, USA
Complexity Generation during Natural Product Biosynthesis Using Redox Enzymes

Nancy P. Keller[†], University of Wisconsin, USA
Production of Cross-Kingdom Oxylinins by Pathogenic Fungi

Sunil Chandran[†], Amyris Biotechnologies, USA
Building Biological Factories for Renewable and Sustainable Products

Short Talk Chosen from Abstracts

Imaging Biological Processes (J2)

Luke D. Lavis[†], HHMI/Janelia Farm Research Campus, USA
New Fluorophores for Biological Imaging

Jennifer A. Prescher[†], University of California, Irvine, USA
Expanding the Imaging Toolbox

Matthew S. Bogoy[†], Stanford University School of Medicine, USA
Probes for Imaging and Modulating Proteases

Short Talk Chosen from Abstracts

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Poster Session 2

THURSDAY, JANUARY 25

Departure

WEDNESDAY, JANUARY 24

Plant and Other Pathways (J1)

Christina D. Smolke[†], Stanford University, USA
A Microbial Biomanufacturing Platform for Natural and Semisynthetic Opioids

Anne E. Osbourn[†], John Innes Centre, UK
Plant Metabolic Clusters – From Genetic to Genomics

Chaitan S. Khosla[†], Stanford University, USA
Structure and Mechanism of Assembly Line Polyketide Synthases

Francis Stewart[†], Technische Universität Dresden, Germany
Direct Cloning and Recombineering of Biosynthetic Gene Clusters

Short Talk(s) Chosen from Abstracts

New Targets (J2)

Giulio Superti-Furga[†], CeMM Center for Molecular Medicine of the Austrian Academy of Sciences, Austria
Coregulated Lipids in Cellular Signaling and Drug Action

Benjamin F. Cravatt III[†], The Scripps Research Institute, USA
Activity-Based Proteomics

Jason E. Gestwicki[†], University of California, San Francisco, USA
Tools to Probe Protein Proteostasis

Craig M. Crews[†], Yale University, USA
Protein Degradation as a Therapeutic Strategy

Short Talk(s) Chosen from Abstracts

Microbial Pathways (J1)

Axel A. Brakhage[†], Friedrich Schiller University Jena, Germany
Synthetic Biology of Fungal Natural Products

Christopher Voigt[†], Massachusetts Institute of Technology, USA
Synthetic Biology to Access and Expand Nature's Chemical Diversity

Mary Dunlop[†], University of Vermont, USA
Engineering Novel Control Systems in Cells

Chemical Biology Approaches to Immunomodulation (J2)

Peter D. Senter[†], Seattle Genetics Inc., USA
Antibody-Drug Conjugates

Hidde L. Ploegh[†], Whitehead Institute for Biomedical Research, USA
Tools to Probe Host-Pathogen Interactions

Lingyin Li[†], Stanford University, USA
Innate Immunity and Cancer Targeting

Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (J1)

Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (J2)