

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Exploiting and Understanding Chemical Biotransformations in the Human Microbiome (D1)

April 1-6, 2014 • Big Sky Resort • Big Sky, Montana, USA

Scientific Organizers: Peter J. Turnbaugh, Curtis Huttenhower and Michael A. Fischbach

Supported by the Directors' Fund

Abstract & Scholarship Deadline: December 5, 2013 / Abstract Deadline: January 9, 2014 / Discounted Registration Deadline: February 3, 2014

TUESDAY, APRIL 1

WEDNESDAY, APRIL 2

Keynote Address

Jeffrey I. Gordon, Washington University School of Medicine, USA
Looking Ahead in the Human Microbiome

Microbial Interactions with Therapeutics

Gerry Wright, McMaster University, Canada
Bacterial Inactivation of Anticancer Drugs

Matthew R. Redinbo, University of North Carolina at Chapel Hill, USA
Alleviating Cancer Drug Toxicity by Inhibiting a Bacterial Enzyme

Peter J. Turnbaugh, Harvard University, USA
Metabolism of Cardiac Drugs by the Human Gut Microbiota

Short Talk(s) Chosen from Abstracts

Biosynthesis of Small Molecules and Drug Discovery

Emily Balskus, Harvard University, USA
Discovery and Characterization of Disease-Associated Metabolic Pathways within the Human Gut Microbiota

Michael A. Fischbach, University of California, San Francisco, USA
Natural Products Mediate Microbial Interactions in the Gut

Jörn Piel, University of Bonn, Germany
Discovery of Natural Products from Uncultivated and Cultured Symbionts

Short Talk Chosen from Abstracts

Poster Session 1

THURSDAY, APRIL 3

Computational Approaches to Understanding Microbial Metabolism and Biosynthesis

Elhanan Borenstein, University of Washington, USA
Metagenomic Systems Biology

Joao Xavier, Memorial Sloan-Kettering Cancer Center, USA
Modeling Complex Microbial Communities

Curtis Huttenhower, Harvard School of Public Health, USA
Metabolic Reconstruction from Microbes to Metagenomes

Rob Knight, University of Colorado, USA
Microbial Communities Viewed Over Time and Space

Short Talk(s) Chosen from Abstracts

Impacts on Host Health and Disease

Christian Jobin, University of North Carolina at Chapel Hill, USA
Genotoxic Bacteria and Cancer Progression

Stanley L. Hazen, Cleveland Clinical Foundation, USA
Links between Microbial Metabolism of Dietary Choline and Atherosclerosis

Eugene B. Chang, University of Chicago, USA
Diet, Microbes and Genetics: The Perfect Storm to Inflammatory Bowel Diseases

Short Talk Chosen from Abstracts

Poster Session 2

FRIDAY, APRIL 4

Engineering Microbiomes

Sean Davies, Vanderbilt University, USA
Genetically Engineered Therapeutic Bacteria

Christopher Voigt, Massachusetts Institute of Technology, USA
Synthetic Metagenomics

Tom Van de Wiele, Ghent University, Belgium
Simulating the Human Gut Microbiome

Short Talk(s) Chosen from Abstracts

Therapeutics Approaches to Manipulating the Microbiome

Nathalie Delzenne, Université Catholique de Louvain, Belgium
Prebiotic Approaches to Metabolic Syndrome

Alexander Khoruts, University of Minnesota, USA
Human Fecal Transplantation: Metabolic Effects of Engraftment

Harry Flint, University of Aberdeen, UK
Dietary Modulation of the Gut Microbiota and Metabolism

Liping Zhao, Shanghai Jiao Tong University, China
Dietary Intervention for a Better Gut Microbiome and a Healthy Life

Poster Session 3

SATURDAY, APRIL 5

Host-Microbial Interactions

Heidi H. Kong, NCI, National Institutes of Health, USA
Host-Microbial Interactions in Healthy Skin and Dermatologic Disorders

Margaret J. McFall-Ngai, University of Wisconsin, USA
Evolutionarily Conserved Signals of Host-Microbe Interaction: Lessons from the Squid-Vibrio Symbiosis

Katherine P. Lemon, Forsyth Institute, USA
Small-Molecule-Mediated Interactions in the Nostril Microbiota and Pathogen Colonization

Sven Pettersson, Karolinska Institutet, Sweden
Microbial Control of Brain Development and Behavior

Short Talk(s) Chosen from Abstracts

Unintended Consequences of Antibiotic Use

Roy Kishony, Harvard Medical School, USA
Evolution of Antibiotic Resistance in Humans

Martin J. Blaser, New York University School of Medicine, USA
Early Life Exposure to Antibiotics Promotes Obesity

Closing Keynote Address

David A. Relman, Stanford University, USA
Stability and Resilience in the Human Microbiome

SUNDAY, APRIL 6