Announcing Keystone Symposia's Meeting on:

Microbial Communities as Drivers of Ecosystem Complexity

cutting-edge science • cross-disciplinary collaboration • networking opportunities • peer-reviewed meeting program

Microorganisms, by their omnipresence, impact the entire biosphere, including the human body. Microbial ecology studies the interactions between members of microbial communities (assemblage of microorganisms that share the same environment) using a panoply of biological and bioinformatics tools. The field of microbial ecology has made substantial strides with the advent of molecular microbiology and has fully embraced high-throughput DNA sequencing technologies. When Joshua Lederberg coined the term human microbiome, he had an ecological analogy in mind ("to signify the ecological community of commensal, symbiotic and pathogenic microorganisms that literally share our body space and have been all but ignored as determinants of health and disease"). The studies of the human microbiome and the environment are both characterizing key microbial interactions but appear to act independently from one another. The main purpose of the symposium is to assemble the leaders in the field of environmental microbial ecology and the human microbiome to stimulate interaction and collaboration. Session topics will address every aspect of the study of microbial communities, from microbial surveys, bioinformatics, transcriptomics and proteomics to community modeling. Each session will include speakers studying environmental communities and the human microbiome. The interactive nature of this symposium will spur collaborations and a better integration of these two similar fields of study.

March 25–30, 2011

Beaver Run Resort • Breckenridge, Colorado • USA

Scientific Organizers:

Jacques Ravel, Vincent B. Young, Mitchell Sogin and **Trina McMahon**

Keynote Speaker:

Norman R. Pace, University of Colorado at Boulder, USA

"Molecular Analysis of Microbial Communities – Historical Perspective"

Plenary Session Topics:

- Molecular Microbial Community Analyses
- Bioinformatic Analyses of Microbial Communities
- Metagenomic Analysis of Microbial Communities
- Proteomics and Metatranscriptomics Analysis of Microbial Communities
- Microbial Community Dynamics I and II
- Microbial Community Modeling: Towards a System Biology Understanding of Microbial Community
- The Human Microbiome: The Next Frontier to Understanding Health and Diseases

Abstract & Scholarship Deadline – Nov 23, 2010
Late-Breaking Abstract Deadline – Dec 29, 2010
Early Registration Deadline – Jan 25, 2011

www.keystonesymposia.org/11C8

KEYSTONE SYMPOSIA™
on Molecular and Cellular Biology
Accelerating Life Science Discovery

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FRIDAY, MARCH 25

KEYNOTE ADDRESS

Norman R. Pace, University of Colorado at Boulder, USA
Molecular Analysis of Microbial Communities – Historical Perspective

SATURDAY, MARCH 26

MOLECULAR MICROBIAL COMMUNITY ANALYSES

Rob Knight*, University of Colorado, USA

Mitchell Sogin, Marine Biological Laboratory, USA
Long-Tailed Microbial Communities

Susan Lynch, University of California, San Francisco, USA
Microbial Community Analysis Using the PhyloChip

Jonathan A. Eisen, University of California, Davis, USA
Phylogenetic and Phylogenomic Approaches to Metagenomic Analysis

Joseph Petrosino, Baylor College of Medicine, USA
Sequencing Technologies Applied to Studying Microbial Ecology

BIOINFORMATIC ANALYSES OF MICROBIAL COMMUNITIES

Jonathan A. Eisen*, University of California, Davis, USA

Patrick D. Schloss, University of Michigan, USA
Developing and Validating Tools for Computational Microbial Ecology

Rob Knight, University of Colorado, USA
Quantitative Insights into Microbial Ecology

Jed Alan Fuhrman, University of Southern California, USA
Integrating Molecular and Environmental Data to Evaluate Community Patterns

SUNDAY, MARCH 27

METAGENOMIC ANALYSIS OF MICROBIAL COMMUNITIES

Trina McMahon*, University of Wisconsin-Madison, USA

John Heidelberg, University of Southern California, USA
Metagenomic Analysis of Marine Microbial Communities

Peter J. Turnbaugh, Harvard University, USA
Metagenomic Analysis of the Human Gut

Susannah Tringe, Department of Energy Joint Genome Institute, USA
Bioenergy Metagenomics

Stanislav Dusko Ehrlich, Institut National de la Recherche Agronomique (INRA), France
A Human Gut Microbial Gene Catalogue Established by Metagenomic Sequencing

PROTEOMICS AND METATRANSCRIPTOMICS ANALYSIS OF MICROBIAL COMMUNITIES

Edward F. Delong*, Massachusetts Institute of Technology, USA

Trina McMahon, University of Wisconsin-Madison, USA
Functional Genomics of Polyphosphate Accumulating Bacteria: "Eco-Systems" Biology for Wastewater Treatment

Gregory J. Dick, University of Michigan, USA
Talk Title to be Determined

Robert L. Hettich, Oak Ridge National Laboratory, USA
A Proteogenomic Approach for Characterizing the Molecular Activities of Gut Microbiomes

MONDAY, MARCH 28

MICROBIAL COMMUNITY DYNAMICS I

Mitchell Sogin*, Marine Biological Laboratory, USA

Brendan Bohannon†, University of Oregon, USA
Environmental Microbial Ecology

Claire Horner-Devine, University of Washington, USA
Biogeography of Microbial Communities

Thomas Schmidt, Michigan State University, USA
Ecologic Strategies of Environmental Microbes

Margaret Riley, University of Massachusetts Amherst, USA
Antibiotic-Induced Changes in the GI

MICROBIAL COMMUNITY DYNAMICS II

Vincent B. Young*, University of Michigan, USA

Jacques Ravel, University of Maryland School of Medicine, USA
The Temporal Dynamics of the Vaginal Microbiota

Forest Rohwer, San Diego State University, USA
RNA Virus Communities Associated with Human

Zoe G. Cardon, Marine Biological Laboratory, USA
Soil Microbial Ecology

TUESDAY, MARCH 29

MICROBIAL COMMUNITY MODELING: TOWARD A SYSTEM BIOLOGY UNDERSTANDING OF MICROBIAL COMMUNITY

Patrick D. Schloss*, University of Michigan, USA

David A. Stahl, University of Washington, USA
Metabolic Modeling of a Mutualistic Microbial Community

Jay P. Tiesman, Procter & Gamble, USA
Microbial Community Analysis from a Systems Biology Perspective

Edward F. Delong, Massachusetts Institute of Technology, USA
Systems Biology of Planktonic Marine Microbial Communities

Short Talk(s) to be Chosen from Abstracts

THE HUMAN MICROBIOME: THE NEXT FRONTIER TO UNDERSTANDING HEALTH AND DISEASES

Jacques Ravel*, University of Maryland School of Medicine, USA

David A. Relman, Stanford University, USA
Perturbation of the Human Microbiome: Unrest at Home

Julie Segre, NHGRI, National Institutes of Health, USA
The Skin Microbiome

Vincent B. Young, University of Michigan, USA
Integrating Human Microbial Ecology in a Clinical Setting

* Session Chair
† Invited, not yet accepted

Program current as of August 17, 2010. Program subject to change. For the most up-to-date information, visit **www.keystonesymposia.org/11C8**

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