



EMERGING SCIENCE FOR ENVIRONMENTAL HEALTH DECISIONS

AGENDA

Environment and Health: What's the Human Microbiome Have to Do with It?

JANUARY 14–15, 2016

THE NATIONAL ACADEMIES OF SCIENCES, ENGINEERING, AND MEDICINE,
KECK CENTER, 500 FIFTH STREET NW, ROOM 100, WASHINGTON, DC

THIS WORKSHOP WILL BE WEBCAST

THURSDAY, JANUARY 14, 8:45AM–5:30PM

- 8:45 Welcome and Opening Remarks—Helmut Zarbl[†], Rutgers University
- 9:15 Grand challenges in environmental health research: Could the microbiome be the missing link?—Andrew Patterson, Pennsylvania State University
- 9:40 Toward understanding the symbiotic role of microbial communities in human biology—Maria Gloria Dominguez-Bello, New York University
- 10:05 Reframing research questions: The biochemistry of the microbiome—Matthew Redinbo, University of North Carolina at Chapel Hill
- 10:30 *Break*

SESSION 1 INTERACTIONS BETWEEN THE MICROBIOME AND ENVIRONMENTAL EXPOSURES: STATE OF KNOWLEDGE

Moderator: Ivan Rusyn[†], Texas A&M University

- 10:45 Effects of heavy metal exposures—Kun Lu, University of Georgia
- 11:10 Effects of pharmaceutical exposures—Ian Wilson, Imperial College

- 11:35 Panel Discussion
- Carl Cerniglia, US Food and Drug Administration
 - Andrew Patterson, Pennsylvania State University
 - Matthew Redinbo, University of North Carolina at Chapel Hill
 - Session 1 Speakers

12:30 *Break*

SESSION 2 WHAT DOES THE MICROBIOME CONTRIBUTE TO INTERINDIVIDUAL VARIABILITY AND SUSCEPTIBILITY TO ENVIRONMENTAL EXPOSURES?

Moderator: William Farland[†], Colorado State University

- 1:30 Human microbial communities and variability in response to nutrition—Eran Elinav, Weizmann Institute of Science (*by webconference*)
- 1:50 Obesity and asthma: Microbiome metabolome interactions—Stephanie Shore, Harvard T.H. Chan School of Public Health
- 2:10 Spatial mapping of the microbial and molecular universe—Neha Garg, University of California, San Diego
- 2:30 *Break*
- 2:45 Panel Discussion
- Ivan Rusyn[†], Texas A&M University
 - John Vandenberg, US Environmental Protection Agency
 - Session 2 Speakers

[†] Indicates a member of the Standing Committee on Use of Emerging Science for Environmental Health Decisions.

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THURSDAY, JANUARY 14, 8:45AM–5:30PM

(CONT.)

SESSION 3 THE EFFECT OF EARLY LIFE EXPOSURES ON DEVELOPMENT AND LATER-LIFE HEALTH OUTCOMES

Moderator: Tina Bahadori, Environmental Protection Agency

- 3:40 **Epidemiology of early life exposure to environmental toxicants, the microbiome, and human disease**—Margaret Karagas, Dartmouth College
- 4:05 **Effect of early life exposure to antibiotics on development and later-life disease**—Martin Blaser, New York University
- 4:35 **Panel Discussion**
- Germaine Buck Louis, Eunice Kennedy Shriver National Institute of Child Health and Human Development
 - Maria Dominguez-Bello, New York University
 - Ana Navas Acien[†], Johns Hopkins University
 - Session 3 Speakers
- 5:30 **Adjourn Day 1**

FRIDAY, JANUARY 15, 9:00AM–NOON

- 9:00 **Welcome & Recap of Day 1**—Tina Bahadori, Environmental Protection Agency, & Andrew Patterson, Pennsylvania State University

SESSION 4 MAPPING A RESEARCH STRATEGY FOR THE NEXT DECADE

Moderator: William Farland[†], Colorado State University

- 9:20 **Human microbiome research: Where we are and where we might go**—Lita Proctor, National Institutes of Health
- 9:40 **Panel Discussion**
- Lita Proctor, National Institutes of Health
 - Matthew Redinbo, University of North Carolina at Chapel Hill
 - Ivan Rusyn[†], Texas A&M University
 - Margaret Karagas, Dartmouth College
- 11:20 **Closing Remarks**—Helmut Zarbl[†], Rutgers University
- 12:00 **Adjourn Workshop***

**For more information and to subscribe for updates, please visit
<http://dels.nas.edu/envirohealth>**

**Emerging Science meetings are free and open
to the public.**

[†] indicates a member of the Standing Committee on Use of Emerging Science for Environmental Health Decisions.

* Members of the ESEH Committee and Government Liaison Group will meet after the workshop, 12:30–5:00pm.

About the Committee

At the request of the National Institute of Environmental Health Sciences (NIEHS), the National Academy of Sciences formed the Standing Committee on Use of Emerging Science for Environmental Health Decisions to facilitate communication among government, industry, environmental groups, and the academic community about scientific advances that may be used in the identification, quantification, and control of environmental impacts on human health.