TUESDAY, SEPTEMBER 20, 2016
ROOM 201

2:00 PM Doors Open

2:10 PM Welcome and Introduction
Jim Fredrickson, Pacific Northwest National Laboratory

2:15 PM Illuminating the dark matter beneath our feet
Kelly Wrighton, Ohio State University

2:45 PM Life in high-temperature environments: modern-day analogs of early Earth still relevant today
Bill Inskeep, Montana State University

3:15 PM Exometabolomics linking genomes with environments to understand how webs of microbes sustain biomes
Trent Northern, Lawrence Berkeley National Laboratory

3:45 PM Discussion

5:00 PM Adjourn
<table>
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<th>Time</th>
<th>Session</th>
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<tr>
<td>2:00 PM</td>
<td>Doors Open</td>
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<tr>
<td>2:10 PM</td>
<td><strong>Welcome and Introduction</strong></td>
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<td><em>Ed DeLong</em>, University of Hawaii</td>
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<td>2:15 PM</td>
<td><strong>Chemical Ecology as the Language of Microbiomes - and Life In General</strong></td>
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<td><em>Mark Hay</em>, Georgia Institute of Technology</td>
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<td>2:45 PM</td>
<td><strong>Examining the Chemical Interactions within Oceanic Microbiomes using Quantitative Proteomics</strong></td>
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<td><em>Mak Saito</em>, Woods Hole Oceanographic Institution</td>
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<td>3:15 PM</td>
<td><strong>Better Living through Chemistry: Organic Nutrient Cycles and the Open Ocean</strong></td>
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<td><em>Marine Microbiome</em></td>
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<td><em>Dan Repeta</em>, Woods Hole Oceanographic Institution</td>
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<td>3:45 PM</td>
<td>Break</td>
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<tr>
<td>4:00 PM</td>
<td>Discussion</td>
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<td>Adjourn</td>
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The Chemistry of Microbiomes: Human Seminar
Hosted by the Chemical Sciences Roundtable

Keck Center of the National Academies ■ 500 Fifth Street NW ■ Washington, DC 20001

WEDNESDAY, NOVEMBER 9, 2016
Room 105

2:00 PM Doors Open, Room 105

2:10 PM Welcome and Introduction
   Barbara Gerratana, National Institutes of Health

2:15 PM Digitizing the Chemistry of Microbes-Its Importance, Current Status and Opportunities
   Pieter Dorrestein, University of California, San Diego

2:45 PM Strain-Specific Functional Profiling in the Human Microbiome and its Molecular Environment
   Curtis Huttenhower, Harvard University

3:15 PM Break

3:30 PM Discovering and Manipulating the Chemistry of the Human Gut Microbiome
   Emily Balskus, Harvard University

4:00 PM Discussion
   Viewers on the web are encouraged to ask questions. Please submit questions to CSR@nas.edu or mention us on twitter @NASEM_Chem

5:00 PM Adjourn
WEDNESDAY, DECEMBER 7, 2016

2:00 PM Doors Open, Room 125

2:10 PM Welcome and Introduction
Tina Bahadori, Environmental Protection Agency

2:15 PM Talking with Molecules: Marine Bacteria and Microalgae
Mohammad R. Seyedsayamdost, Princeton University

2:50 PM Engineering the Microbiome
Timothy Lu, Massachusetts Institute of Technology

3:25 PM Genome-Scale Metabolic Modeling of Microbial Communities
Jennifer Reed, University of Wisconsin-Madison

4:00 PM Open Panel discussion
Moderator: Carole Bewley, National Institute of Diabetes and Digestive and Kidney Diseases
Panelists: Trent Northen, Lawrence Berkeley National Laboratory (via WebEx)
Mak Saito, Woods Hole Oceanographic Institute (via WebEx)
Mark Hay, Georgia Tech (via WebEx)
Mohammad R. Seyedsayamdost, Princeton University
Timothy Lu, Massachusetts Institute of Technology
Jennifer Reed, University of Wisconsin-Madison

Discussion Questions:
- What are the future research opportunities and challenges?
- Are there unique technical challenges associated with this research?
- Can we identify cross-system and cross-platform commonalities and opportunities for collaboration and integration?

5:00 PM Adjourn