

THE 23rd INTERNATIONAL MICROBIAL GENOMES CONFERENCE

SEPTEMBER 11-15, 2022

UCLA CONFERENCE CENTER

LAKE ARROWHEAD

CALIFORNIA

SCIENTIFIC PROGRAM ORGANIZERS

Dr. Jeffrey H. Miller
University of California, Los Angeles, CA

Dr. Ashlee Earl
The Broad Institute of MIT and Harvard
Cambridge, MA

Dr. Jonathan Eisen
University of California, Davis, CA

Dr. Elisabeth Raleigh
New England Biolabs, Ipswich, MA

Dr. Elinne Becket
California State University, San Marcos,
San Marcos, CA

Dr. Gautam Dantas
Washington University School of Medicine in St. Louis
St. Louis, MO

Dr. Tanja Woyke
DOE Joint Genome Institute, Walnut Creek, CA

Dr. Rachel Dutton
Arcadia Science,
Berkeley, CA

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CONTACT NUMBER

The Arrowhead Conference Center phone number is (909) 337-2478

SCIENTIFIC PROGRAM

SUNDAY, SEPTEMBER 11

- 4:00-6:00 pm Arrival and Check-in at Lake Arrowhead Conference Center
- 6:15-7:45 pm Dinner (Dining Room)
- Opening of Meeting** (Pineview Room)
- 8:00-8:10 Jeffrey H. Miller
University of California, Los Angeles
“Welcome: Introduction to Arrowhead”
- 8:10-8:30 Jonathan Eisen
University of California, Davis,, CA
“Arrowhead and Microbial Genomics; Update on the Tree of Life”
- 8:30-9:00 Tanja Woyke
Joint Genome Institute, Walnut Creek, CA
“Finding the Needle in the Haystack: What Targeted Sorting Approaches Can Reveal”
- 9:00-9:30 Rachel Dutton
Arcadia Science, Berkeley, CA
“Genetics and Genomics of the Simple Microbial Communities from Cheese”
- 9:30 pm Reception (Iris Room)

MONDAY, SEPTEMBER 12

- 7:45-8:30 AM Breakfast (Dining Room)
- Opening Session** (Pineview Room)
- 8:45-9:00 am Introduction/Announcements
- Session I **Microbiomes, Microecology, Microbial Communities I**
- Session Chair Ashlee Earl, Broad Institute MIT and Harvard
- 9:00-9:30 am Cesar de la Fuente

University of Pennsylvania, Philadelphia, PA
“Artificial Intelligence Approaches for Antibiotic Discovery”

9:30-10:00 am	Tami Lieberman, Massachusetts Institute of Technology, Cambridge, MA “De Novo Mutations in Human Microbiomes”
10:00-10:30 am	Connie Rojas, University of California - Davis, Davis, CA "Microbiome variation and function in wild and domestic mammals"
10:30-10:50 am	Break
10:50-11:20 am	Kjersti Marie Aagaard, Baylor College of Medicine Houston, Tx “Womb with a View: Importance of Maternal-Fetal Communication in Heritability and Adaptation”
11:20-11:50 am	Ashlee Earl, The Broad Institute of MIT and Harvard, Cambridge, MA “The Gut-bladder axis of Recurrent UTIs”
11:50-12:20 am	Harris Wang Columbia University College of Physicians and Surgeons, New York, NY “Spatial Metagenomics and Culturomics of Microbial Communities”
12:30 pm	Lunch (Dining Room)
4:00-6:00 pm	Poster Session (Lakeview Room) Social/Mixer (Lakeview Room)
6:15-7:45 pm	Dinner (Dining Room)
Session II	Microecology, Microbial Communities II (Pineview Room)
Session Chair	Rachel Dutton, Arcadia Science
7:45-8:15 pm	Cameron Thrash, University of Southern California, Los Angeles, CA “Illuminating bacterioplankton evolution and function through genomics”
8:15-8:45 pm	Gina Chaput

University of California Davis, Davis, CA
"Under the Sea: Exploring Plant-Microbe Interactions of Seagrass"

8:45-9:05 pm Break

9:05-9:35 pm Jason Stajich
University of California, Riverside, CA
"Between a Rock and a Hard Place: Genomics of Fungi from Cold Antarctic and Hot Desert Communnities"

9:35 Reception
(Iris Room)

TUESDAY, SEPTEMBER 13

7:45-8:30 am Breakfast (Dining Room)

Session III Metagenomics/Pathogens/Antibiotics /Evolution

Session Chair Gautam Dantas, Washington University School of Medicine

9:00-9:30 am Paul Turner
Yale School of Medicine, New Haven, CT
"Predicting evolutionary genetics of virus-bacteria interactions in patients receiving phage therap

9:30-10:00 am Daria Van Tyne
University of Pittsburgh, Pittsburgh, PA
"Functional Genomics and Phage Therapy for Antibiotic- Resistant Enterococcal Infections"

10:00-10:30 am Jeffrey E. Barrick, University of Texas at Austin, Austin, TX
"Unintentional Laboratory Evolution of Plasmids and Microbes"

10:30-10:50 am Break

10:50-11:20 am Ilana Brito
Cornell University, Ithaca, NY
"Mechanisms Underlying Microbiome Impacts Across Diseases"

11:20-11:50 am	Alexandra Grote Broad Institute of MIT and Harvard Cambridge, MA “Using genomics and transcriptomics to uncover mechanisms of bacterial persistence”
11:50-12:20 pm	Eric Alm Massachusetts Institute of Technology, Cambridge, MA “Gene Transfer and Other Mechanisms of evolution in the Human Microbiome”
12:30 pm	Lunch (Dining Room)
4:00-6:00 pm	Poster Session (Lakeview Room) Social/Mixer (Lakeview Room)
6:15-7:45 pm	Dinner (Dining Room)
Session IV	Genome Analysis
Session Chair	Rachel Dutton, Arcadia Science
7:45-8:15 pm	Allison J. Lopatkin, University of Rochester, Rochester, NY "Determinants of Plasmid Acquisition and Selection"
8:15-8:45 pm	Katherine P. Lemon, Baylor College of Medicine, Houston, TX “In the Search for Beneficial Bacteria, Follow Your Nose!”
8:45-9:00 pm	Break
9:00-9:20 pm	TBA
9:20	Reception (Iris room)

WEDNESDAY, SEPTEMBER 14

7:45-8:30 am	Breakfast (Dining Room)
Session V	Analysis of Microbial Communities
Session Chair	Tanja Woyke, DOE Joint Genome Institute

9:00 - 9:30 am	Gautam Dantas Washington University School of Medicine in St. Louis, St. Louis, MO “Undertanding, Predicting, and Remediating Pertubatioons to Diverse Microbiomes”
9:30-10:00 am	Rosie Alegado University of Hawaii at Manoa, Honolulu, HI “Systems Microbial Ecology: Resistance and resilience Patterns of Subtropical Island Estuarine Microbial Assemblages in response to Seasonal Forcing”
10:00-10:30 am	Xiaoxia (Nina) Lin, University of Michigan, Ann Arbor, MI “Microdroplet enabled cultivation and dissection of bacterial communities”
10:30-10:50 am	Break
10:50-11:20 am	Joanne B. Emerson University of California, Davis, CA “Exploring the Soil Virosphere”
11:20-11:50 am	Trent Northen Lawrence Berkeley Laboratory, Berkeley, CA “Feeding My Friends: Examining Metabolite Exchange in the Rhizosphere”
11:50-12:20 am	Carrie Ann Eckhart Oak Ridge National Laboratory, Oak Ridge, TN “Development of Synthetic Biology Toolkits for Genotype to Phenotype evaluation in Non-Model Microbes”
12:30 pm	Lunch (Dining Room)
Session VI	Human Genome and Microbiota Products and Elements, Synthetic Biology
Session Chair	Elinne Becket, California State University
4:30-5:00 pm	Peter Weigele New England Biolabs, Ipswich, MA “Genome Chemistry: DNA Hypermodification in Viruses of Bacteria”

5:00-5:30 pm	Aindrilla Mukhopadhyay Lawrence Berkeley Laboratories, Berkeley, CA “Systems Biology Approaches to Scalable Bioproduction Hosts”
5:30-6:00 pm	Hosein Mohimani Carnegie Mellon University, Pittsburgh, PA “Computational Methods for Natural Product Discovery from Microbial Communities by Integrating Mass Spectrometry and Metagenomic Mining”
6:15-7:45 pm	Dinner (Dining Room)
Session VII	Genomics, Virus Evolution, Signaling (Pineview Room)
7:45-8:00 pm	Awards Presentations
8:00 -8:30 pm	Jean-Marie Volland, Joint Genome Institute , Walnut Creek, CA "Crossing bacterial boundaries. Larger and more complex than ever"
8:30-9:00 pm	Anthony Fodor University of North Carolina, Charlotte, NC “Adventures with the Poisson Distribution: The Limitaitons and Surprising Power of Independence Assumptions in Microbiome Algorithm Design”
9:00-9:20 pm	TBA
9:30pm	Reception/Party (Iris Room)

THURSDAY, SEPTEMBER 15

7:30-8:30 am	Breakfast (Dining Room)
Session VIII	(Pineview Room)

9-9:20 am TBA

SPECIAL LECTURE

9:20-9:50 am Asaf Levy, The Hebrew University of Jerusalem, Jerusalem, Israel
"Systematic Discovery and Characterization of Microbial Toxins"

9:50-10:10 am TBA

10:15-10:25 am Closing remarks

10:25-10:50 am Checkout

11:00 am Departure of Bus for LAX

12:00 noon Lunch

1:00 pm Departure of Bus for LAX