

## Emerging Opportunities for Mathematics in the Microbiome

### Thursday January 23, 2020

- 8:00–9:00 *Check-In/Light Breakfast (Hosted by IPAM)*
- 9:00–9:50 **Janet Jansson** (Pacific Northwest National Laboratory)  
*The Soil Microbiome – From Metagenomics to Metaphenomics*
- 10:00–10:10 *Break*
- 10:10–11:00 **Liping Zhao** (Rutgers University)  
*Guild-based Strategy for Mining Gut Microbiome Data in Human Health and Diseases*
- 11:10–11:20 *Break*
- 11:20–12:10 **A. Murat Eren (Meren)** (University of Chicago)  
*Integrating de novo protein biochemistry and metagenomics to tease apart evolutionary processes acting on environmental microbial populations*
- 12:20–2:20 *Lunch (on your own)*
- 2:20–3:10 **Susan Holmes** (Stanford University)  
*Challenges posed by dependency structures in non-normal multivariate data from microbiota*
- 3:20–3:30 *Break*
- 3:30–4:20 **Nandita Garud** (University of California, Los Angeles (UCLA))  
*Population Genetics in the Human Microbiome*
- 4:30–6:00 *Poster Session & Reception (Hosted by IPAM)*

### Friday January 24, 2020

- 8:00–9:00 *Check-In/Light Breakfast (Hosted by IPAM)*
- 9:00–9:50 **Elaine Hsiao** (University of California, Los Angeles (UCLA))  
*microbiome interactions with the nervous system in health and disease*
- 10:00–10:10 *Break*
- 10:10–11:00 **Carolina Tropini** (University of British Columbia)  
*Dynamics of microbiota communities during physical perturbation*
- 11:10–11:20 *Break*
- 11:20–12:10 **Jack Gilbert** (University of California, San Diego (UCSD))  
*Microbiome of the Built Environment*
- 12:20 *Conclusion*



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