

Model Systems for Microbiome Research
Joint Berkeley Initiative for Microbiome Sciences
August 5th, 2020

All times are Pacific Standard Time (PST)

9:00 **Introduction to the Initiative** (Matt Traxler, PMB faculty)

9:15 **Keynote I: *Using C. elegans to study the role of host genes and processes in shaping the gut microbiome*** (Michael Shapira, IB faculty)

9:45 **Breakout session I: Questions and model systems in microbiome research**

- *What were your major considerations when choosing your model system?*
- *What are the most important/interesting questions we can ask with these systems?*

10:35 **Break**

10:45 **Talks session I**

- *A transient, diet-driven gut microbiome in the gray house spider *Badumna longinqua*.* (Susan Kennedy, Gillespie lab alumna)
- *Bioremediation of a common product of food processing by a human gut bacterium.* (Ashley Wolf, SPH/CCB incoming faculty)
- *Gut microbiota composition of trophic generalists and specialists from the adaptive radiation of *Cyprinodon* pupfishes.* (Joseph Heras, Martin lab)
- *Developing a high-throughput functional genomics platform for filamentous fungi.* (Lori Huberman, Glass lab)

11:45 **Lunch break**

12:45 **Keynote II: *Fabricated ecosystems for examining plant microbe interactions*** (Trent Northen, EGSB Senior Scientist)

1:15 **Breakout session II: Approaches and challenges**

- *Essential controls*
- *Low concentration materials and amplification*
- *Contamination issues*
- *Synthetic communities/gnotobiotic systems*
- *Environmental sampling*

2:05 **Break**

2:15 **Talks session II**

- *Risks, biases, and challenges in real and synthetic soil communities.* (Alex Crits-Cristoph, Banfield lab)
- *Corrinoids as model nutrients to probe microbial interactions in a soil ecosystem.* (Zachary Hallberg, Taga lab)

- *Using a synthetic community to parametrize consumer-resource models.* (Elijah Mehlferber, Koskella lab)

3:00 **Break**

3:10 **Talks session III**

- *Cooperation, competition, and specialized metabolism in a simplified root nodule microbiome.* (Bridget Hansen, Traxler lab)
- *Experimental pyrocosms demonstrate key features of the autecology of *Pyronema domesticum* and *Lyophyllum* aff. *Anthracophila*.* (Cat Adams, Bruns lab)
- *Evaluating altered metabolite profiles in *B. Thetaiotaomicron* effects oral bioavailability indicators.* (Jessica Mahinthakumar, Keasling lab)
- *CRISPR-Cas Transposase (DART) systems for targeted DNA insertion into organisms within a community.* (Spencer Diamond, Banfield lab)

4:10 **Closing Remarks** (Matt Traxler)