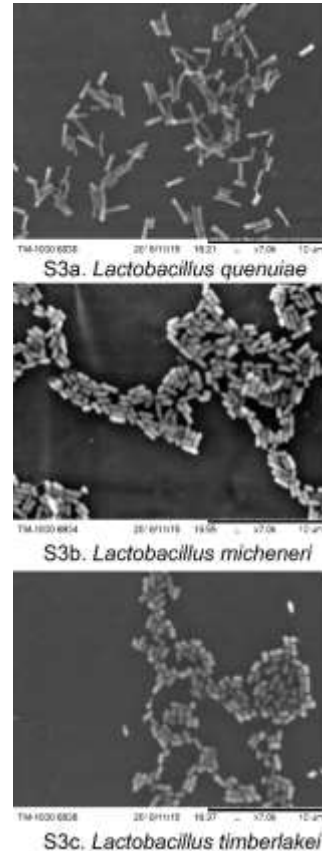


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## Leveraging Symbionts to Protect Pollinator Populations



Fresno is currently surrounded by the largest commercial pollination event in the world. The pollination of almond blooms by honey bees is a clear example of the importance of pollinators. Yet both managed and wild bee populations are in decline. We study the role of microbial associates in bee health, with the end goal of protecting these important pollinators. We have found that flowers are hotspots of transmission for both parasitic and possibly beneficial microbes. The gut microbiome can protect bumble bees from pathogens, and we have recently discovered the mechanism by which this occurs. Furthermore, the gut microbiome in bumble bees can help the host tolerate environmental toxins that occur in flower nectar and pollen. Our studies highlight the need to protect biodiversity that we can easily see (e.g. bees for their pollination services) and those that we cannot see (e.g. beneficial microbes that are yet to be discovered).



**Quinn McFrederick, PhD**

**UC Riverside**

**Friday, February 22, 2019**

3:00 – 4:00 PM

Science 2, room 109

For further information: [www.csufresno.edu/biology](http://www.csufresno.edu/biology)

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**Bio:** Dr. McFrederick is an assistant professor of entomology at UC Riverside. He earned his B.A. at UC Berkeley, M.A. at CSU San Francisco, and his Ph.D. at University of Virginia. Dr. McFrederick's research focuses on symbiotic (pathogens, commensals, and mutualists) of wild and solitary bees, with the goal of leveraging these symbionts to protect bee populations and communities. <https://melittology.ucr.edu/>