

NEWSLETTER

April 2024

Created by the BPRI Trainee Leadership Council

UPCOMING EVENTS

BPRI Integrated Lab meeting:

- April 04, 2024 – Soumi Mitra (Post-doc @ BCM)
- April 11, 2024 – Madeline Severson (BCM)
- April 18, 2024 – Jaylan Ross (FIST student @ BCM)
- April 25, 2024 – Hala Khan (BCM)

RESEARCH MILESTONES

- * **Sword Lab:** Audélia Mechti has passed her written and oral preliminary exams.
- * **Behmer Lab:** Chris Brennan has successfully defended his dissertation proposal.
- * **Cease Lab:** Sydney and Mehreen were both awarded ASU GPSA research grants to support expanding their BPRI work, and Mehreen was awarded the ASU Social Justice Spotlight Award.



RESEARCH HIGHLIGHTS

Ramen Lab: Jacob Kelley, a new PhD student in the Ramen lab, is joining the BPRI. Liza Bessonova and Jacob Kelley are performing electrophysiology experiments on solitary *S. americana* received from the Song lab. This will be the first set of studies to systematically probe differences in odor coding and behavior between solitary and gregarious locusts.

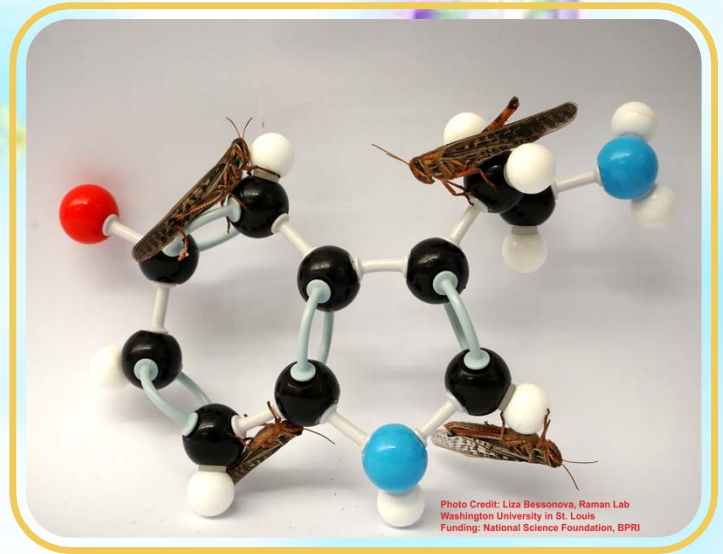
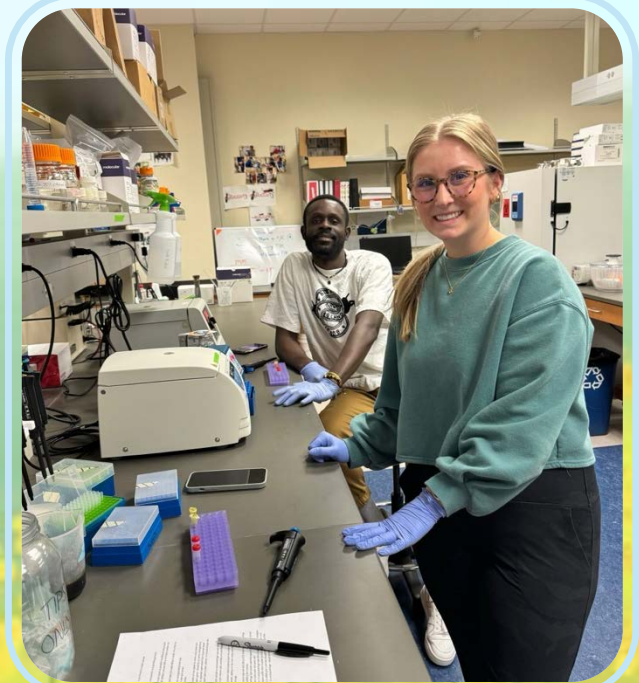


Photo Credit: Liza Bessonova, Ramen Lab
Washington University in St. Louis
Funding: National Science Foundation, BPRI



Cease Lab: Mehreen has continued experiments testing the effects of dietary macronutrient balance on desert locust susceptibility to *Metarhizium* fungus with assistance from FIST scholar Tamir Lichaa, and undergraduate students Ried Shniderman and Audrey Bunnell. They are collecting hemolymph and measuring glucose, trehalose, and amino acid concentrations to see how those might affect fungal growth and/or locust immune response. Neema has continued experiments to determine the macronutrient demands of marching locusts with assistance from FIST scholar Chloe Martz. Sydney is starting to analyze *S. piceifrons* samples from Yucatan for viruses and also measuring morphometrics. We have two new FIST scholars, Christina Tran and Stephanie Nunez, mentored by Rick, who are analyzing plant samples from the Yucatan field season.

The Bug Guts Lab (SIUE): The BugGuts Lab recently received a batch of *Schistocerca piceifrons* collected from Mexico during an upsurge last fall. Joe Antwi and Alena (Future BPRI FIST student) are working to fine tune their sample processing pipeline as they work to prepare samples to sequence and characterize the gut bacterial community of solitary and gregarious *S. piceifrons* from the wild (see photo). We are also incredibly grateful all the BPRI folks who worked in the field last October to collect these samples and enable our projects!



LAB ACTIVITIES AND OUTREACH

Cease Lab: ASU hosted Pulitzer Prize winning author Ed Yong who asked to visit our lab to learn more about locusts for a new book he's working on about scale. Mira and Rick continue to support regular stakeholder interactions on HopperLink and [HopperWiki](#).



RECENT PUBLICATIONS

Locust and BPRI related:

- * **Brittany F Peterson**, Microbiome toxicology — bacterial activation and detoxification of insecticidal compounds, *Current Opinion in Insect Science*, 2024, 101192. <https://doi.org/10.1016/j.cois.2024.101192>.
- * **Bessonova Yelyzaveta, Raman Barani** (2023) Serotonergic amplification of odor-evoked neural responses maps flexibly onto behavioral outcomes, *eLife* 12:RP91890. <https://doi.org/10.7554/eLife.91890.1>

CONFERENCES AND SOCIAL OPPORTUNITES

Spence Behmer & Chris Brennan will participate in the upcoming **Bonn Nutrition Meeting**, from **May 5-8** in **Bonn, Germany**

Spence Behmer, Hojun Song, Gregory Sword, and Maeva Techer will participate in the upcoming **Theo Murphy meeting**, "Locust and bee plasticity in a changing world", sponsored by the Royal Society from **May 20-21** in **Cambridge, UK**.