BPRI
Behavioral Plasticity Research Institute

NOVEMBER & DECEMBER 2024

BPRI Updates

Entomological Society Of America

The BPRI has been busy this month! Many researchers turned out to the annual EntSoc conference in Phoenix Arizona, presented on BPRI research and connected between talks. Folks met up at the Orthoptera Networking Event, or while touring the locust facilities at ASU. We turned out in force and BPRI students brought home several wins in the student competitions!

BPRI advisory Meeting

Each University and committee shared updates on research, collaboration, and team building with NSF advisors at the meeting on November 20th. We shared stories of research integration and discussed future avenues for renewal of this transdisiplinary instiutue. This sparked some good conversations about key goals for the BPRI

Upcoming Events!

- **Integrated lab meeting with Dr. Alison McAfee** Dec 3 (recording available)
- **BII-RCN meeting** Dec 16-18
- **BPRI Townhall** - Dec 16 at 3:30pm CST - discuss status of renewal proposal, and publication plans

https://behavioralplasticity.org/index.php/calendar/

Docuseries update!

We are excited to present the first video in the three-part docuseries highlighting the significance, progress, and impact of interdisciplinary science in unraveling complex natural phenomena. This first installment explains why our interdisciplinary approach is positioning BPRI to usher in a new era of locust research with novel tools, resources, and expertise.

Full-length video at: https://youtu.be/QTOylIT7wI4
Shorter trailer at: https://youtu.be/Zd05USrktSw

@NSF_BPRI

Congrats Trainee Winners!

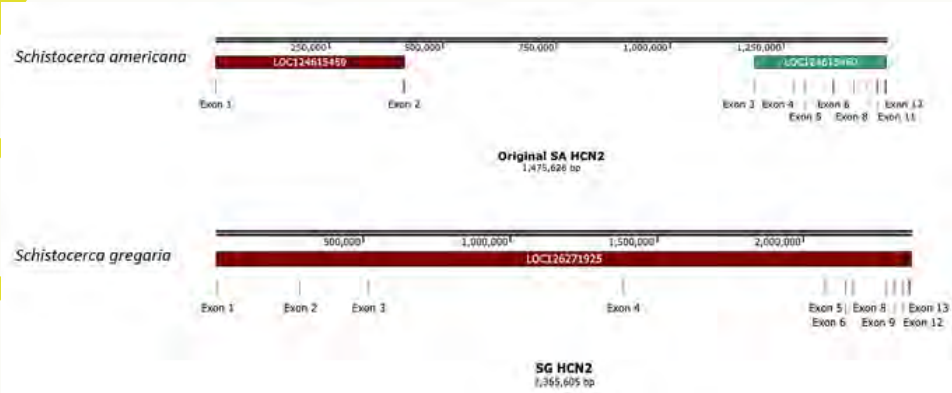
Graduate PBT: Chemical Ecology and Toxicology	Mehreen Tahir
Graduate SysEB: Behavior 1	Audélia Mechti
Graduate PBT: Behavior	Joseph Antwi

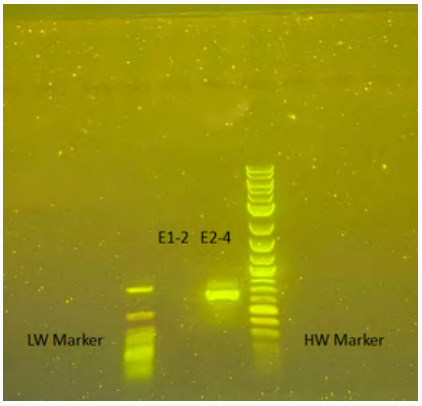
Research Spotlight: ASU

The ASU Team returned to Yucatan this month to continue studying locust phase change with CESVY! Dr. Arianne Cease, Dr. Rick Overson, and Phd Students Neema John and Sydney Millerwise worked with Dr. Mario Poot-Pech, Roberth Peniche and others on the CESVY team to study nutritional ecology and a fungal biopesticides on field populaitons of solitary and gregarious *S. picifrons*

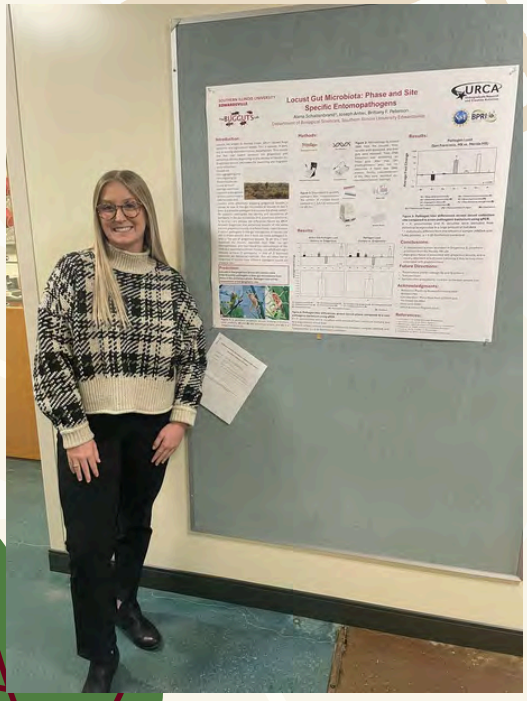
Research Spotlight: BCM

At BCM, David Bellini and Dylan Ulloa set out to show that there are several misannotations in the *Schistocerca* genomes. They ran a DNA gel that shows that the HCN2 gene, showed as 2 separate genes in *Schistocerca americana* compared to its homolog in *Schistocerca gregaria,* is actually just one gene. See the original annotations in the figure on the left, and the DNA band in the right figure under the E2-4 column that shows that Exon 2, 3, and 4 from *Schistocerca americana* HCN2 are all connected. Additionally, they are creating new algorithms to detect genome-wide misannotations computationally!



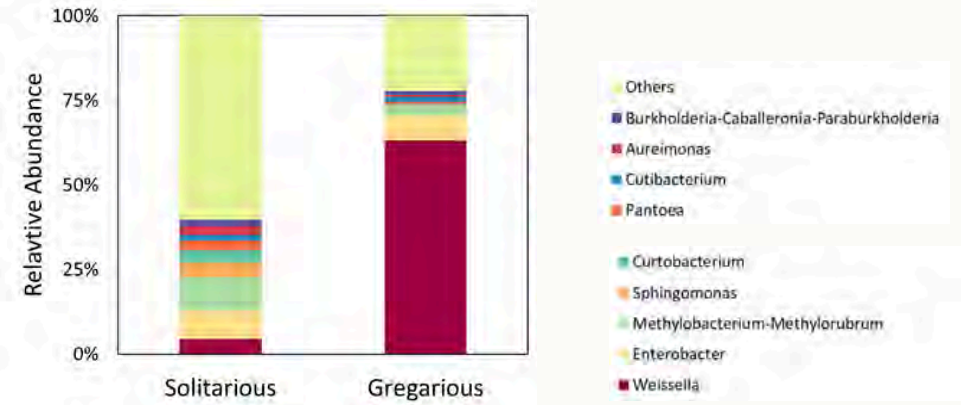


Research Spotlight: SIUE



At SIUE, Joseph Antwi sequenced the gut microbiome of wild caught *Schistocerca piceifrons piciefrons* and found a prevalence of *Weisella* in gregarious locusts (Results below).

Alena Schaltenbrand (Left) used qPCR to look at entomopathogen communities across wild populations of gregarious and solitarious locusts.



Colony updates

TAMU Locust quarantine officially received *S. cancellata* egg pods from our Argentinian colleagues which just became adults! The sedentary species *S. nitens* has given us a tough time but the current generation of offsprings looks healthy and abundant! Currently, F1 *S. piceifrons, S. americana, S. cubense* and *S. gregaria* are being isolated for time-course, RNAi and olfactory experiments.

Adult S. cancellata

Sheina visited TAMU locust quarantine!

ASU's *S. gregaria, L. migragoria, and M. sanguinipes* colonies have being growing strong without issues! We recently switched the reproductive substrate from pure play sand to vermiculite with only a thin sand cap and have noticed a noticeable jump increase in reproductive output.

Crazy colors in S. americana isolated female nymphs