

# News fEEB

Ecology and Evolutionary Biology Monthly Newsletter

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## Announcements

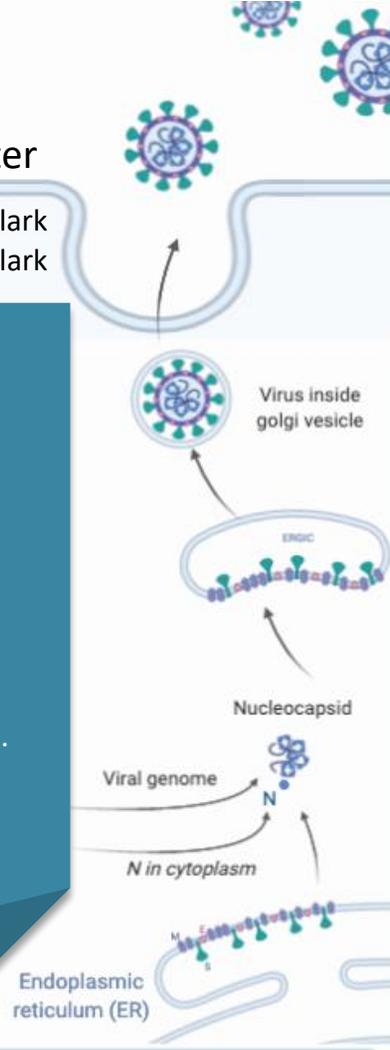
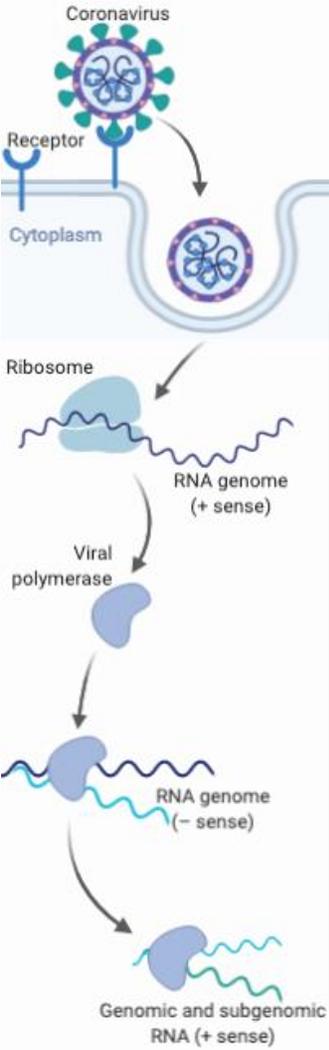
- EEB Monday Seminars have been postponed for the remainder of the semester.
- The Ecological Integrated Symposium (EIS) was held virtually from *April 2<sup>nd</sup>-April 3<sup>rd</sup>*

**Thank you to everyone who made that happen!**

- Research is still open for essential tasks, but the following precautions should be taken to reduce the spread of COVID-19.
  - Social distancing by at least 6 feet
  - Wash hands frequently with soap and hot water
  - Disinfect frequently touched surfaces



Translation of viral structural proteins



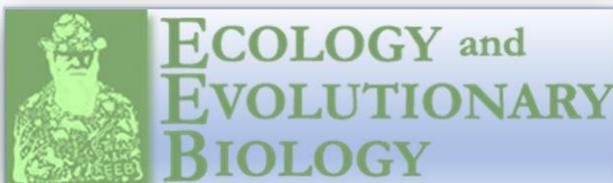
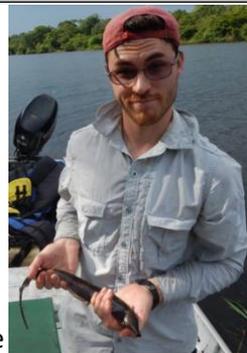
## Monthly Discussion

*How can the EEB community increase lab efficiencies through resource sharing, such as equipment, protocols, reagents, scripts for data analysis, etc?*

**Want to join the discussion?**  
**Respond to the corresponding email OR tweet out your response @TAMUEEB and include #TAMUEEB**

## Student Spotlight

David Saenz is a PhD candidate in Dr. Winemiller's Aquatic Ecology lab and a recent recipient of a Fulbright Postdoctoral Fellowship in Brazil. David investigates the evolution of the electrosensory system in freshwater fishes. Specifically, behavioral and physiological experiments are combined with *in vitro* electrophysiological and immunohistochemical methods to conduct comparative studies of signaling plasticity in the electric organ discharge of gymnotiformes fishes. David also uses scanning electron microscopy to compare the distribution of electroreceptors of gymnotiformes sister taxa. With these data, David is interested in determining what influence habitat and trophic strategies have on the development of electrosensory systems and to compare what effects have on fish genetics and evolution. When not in lab, David appreciates a 5.10 on the climbing wall if he's not on the soccer field or handling a cold brewski while a hot pan sizzles on the stove top.



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# Laboratory Highlights



*The Sword lab uses a multidisciplinary approach to research cotton agroecosystems and, in particular, combines general ecology, behavioral and chemical ecology, population genetics, and molecular biology, to investigate novel methods of pest management in cotton cropping systems. Dr. Sword's career as an ecologist hit the ground running with his research on the migratory banding behavior of mormon crickets and the significance of collective behavior during their migrations. With presence in the Department of Entomology, Ecology and Evolutionary Biology, and Molecular & Plant Sciences Program, Dr. Sword holds the appointment as the Charles R. Parencia Chair in Cotton Entomology.*



*Joe Black joined the Sword lab following completion of his M.S. at the University of Arkansas. Joe is a second-year PhD student researching the immune response of *Helicoverpa zea* to various entomopathogens, and how nutritional and microbial environments can alter the immune response. After completing his PhD, Joe is interested in continuing research as a principal investigator and work in extension.*

*Ashley Tessnow is in her final year as a PhD candidate in the Sword lab. Ashley's dissertation research is on the applications of molecular and nutritional ecology to the integrative pest management of the fall armyworm. Her primary research interests intersect the fields of evolutionary ecology and agricultural entomology, and she is currently working towards a career in academia.*



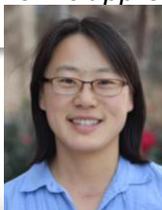
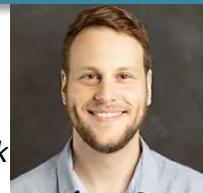
*Leah Buchman is a PhD student in The Sword lab and currently researches insect-plant-microbe interactions. She focuses on the role of endophytic fungi in plant resistance and tolerance to herbivorous pests in agricultural crop systems. Leah is also involved in research in conjunction with The Bush School at TAMU where she is part of an interdisciplinary team that focuses on public perception of emerging technologies in agriculture in Texas. Leah aspires to make her way to Washington, DC to advocate for scientific research and science policy.*

*Dr. Loren Rivera Vega is a postdoctoral researcher that focuses on the use of RNAi as a sustainable tool to control boll weevil (*Anthonomus grandis grandis*). She also studies the role of fungal endophytes against different biotic and abiotic plant stressors.*

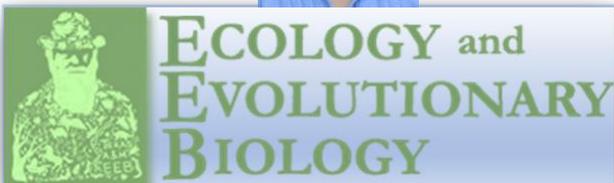


*Janaina Câmara is a recently-celebrated PhD candidate in the Sword lab. Jana researches insect-plant-microbe interactions including multitrophic levels. She focuses on the effects of plant-associated fungi applied to cotton plants on the behavior and development of herbivore and aphids' predator species. Jana aspires to find ways to use entomopathogens in Insect Pest Management (IPM) more easily for the farmers and safer for the environment.*

*Dr. Tyler Raszick is a postdoctoral research associate working to develop a suite of SNP-based diagnostic assays for boll weevil (*Anthonomus grandis*) variant identification. These assays will be deployed to state and USDA diagnostic laboratories in active boll weevil eradication areas to facilitate rapid diagnoses and proper management decisions. Dr. Raszick also utilizes population genomic approaches to further investigate the evolution of host use in *A. arandis* variants.*



*Dr. Zhen (Daisy) Fu is a Postdoc Research Associate in the Sword lab. She uses next whole-genome sequencing to examine the introgression of two moth species: *Helicoverpa zea* and *Helicoverpa armigera*. Beyond studying insect pests, Daisy also studied plant-parasitic nematodes and plant pathogens that are transmitted by insect vectors.*



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# Laboratory Highlights



*Morgan Swoboda is currently a lab technician in the Sword Lab. She graduated in December of 2019 with her B.S. in Plant & Environmental Soil Science with an Entomology double major. She currently researches plant-insect-microbe interactions in agricultural crop systems, and will be continuing similar research at Cornell University as M.S. student studying plant-insect-microbe interactions in turf grass systems starting this summer.*



*Cody Gale is a PhD candidate investigating the phytochemical mechanisms underlying endophyte-mediated herbivore resistance in cotton. He examines how the production of volatiles, non-volatile terpenoids, and extrafloral nectar components is affected by endophyte treatments, and how these changes alter plant-insect interactions.*

*Mason Clark is a first-year PhD student in the Sword and Behmer labs studying candidate metabolic pathways critical to host-detection and nutrient acquisition by insect pests in cotton cropping systems. He is interested in using molecular biology and gene-editing technologies to disrupt the process by which insect pests are able to detect or feed on crop hosts as a potential pest management strategy.*



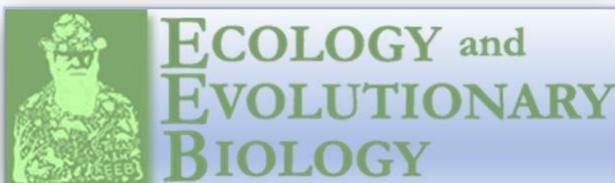
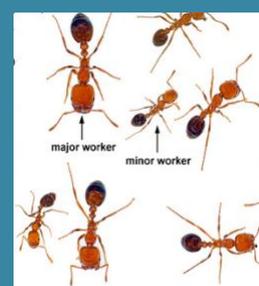
*Cesar Valencia is the backbone to the Sword lab. Cesar has been the manager and a researcher in the lab since it began and ensures all lab operations stay afloat. Cesar researches the effects of endophyte-treated cotton seeds on controlling aphid populations and other insect pests in the field.*

*Richard Feiss spent ten years in the US Army prior to completing his B.S. in Plant and Soil Sciences and a minor in Microbiology at N.C. State. Richard is a second-year PhD student in the Sword lab focusing on cotton endophytes and their impact on plant physiology.*



# Laboratory Highlights

*The Behmer lab focuses on insect physiological ecology and the impact diet and nutrition have on insect ecology and behavior. Dr. Behmer, who heads the Insect Physiology and Behavior Research Group (IPBRG) at Texas A&M, began his academic career conducting seminal research on diet choice in grasshoppers and their nutritional limitations in metabolizing plant sterols. His research has continued to expand into topics of optimal foraging behavior, learning, and insect nutrition and macronutrient intake ratios, in several different insect species. Dr. Behmer is the former Chair of the Ecology and Evolutionary Biology Department and a member of the Texas A&M institute for Neuroscience.*



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# Laboratory Highlights

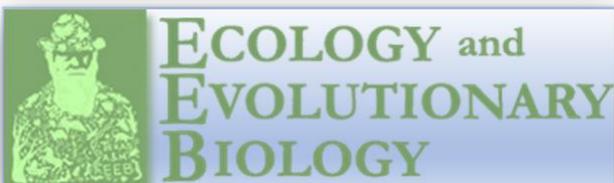


*Pio Bradicich is a first-year M.S. in the Behmer lab. Pio studies the tarnished plant bug (*Lygus lineolaris*), which is an agricultural pest in the southwest United States. He is interested in using this insect as a model to answer questions about the effects of nutrition on feeding behavior and movement patterns. Pio intends to begin a PhD program following completion of his M.S. and to ultimately work as an entomologist at either a university or at the USDA.*

*Richelle Marquess is a former student of Behmer lab where she completed her M.S. investigating wing polymorphic crickets, nutrient regulation in the nymphs, and the influence this regulation has on development into adult morphs. Richelle is the current lab manager and a research assistant aiding in the preparations and execution of ongoing experiments.*



*Pierre Lesne is a postdoctoral researcher in the Behmer lab. Pierre joined the Behmer lab following completion of his PhD in the Jeanson lab at the University of Toulouse where he investigated how food intake influences dispersal and chemical communication in spiderlings. With four years of postdoctoral research in the Behmer lab under his belt, Pierre has focused on characterizing the nutritional requirements of invasive ants across different habitats combining field and lab studies. Collectively, these studies aim to develop potential invasive ant control solutions in the short-term while increasing our understanding of ant nutritional ecology in the long-term. Pierre is an avid R programmer, and you can catch him providing R tutorials during EEB's Open Source Open Science fall workshop series.*



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