



Entomology

NEWSLETTER



2026

News from the LSU Department of Entomology

FROM THE DEPARTMENT HEAD

Alumni and friends of LSU Entomology,

2025 was another year of significant change for the LSU Department of Entomology. Most of these changes were positive: we gained two outstanding new faculty members, Drs. Morgan Christman and Ivan Grijalva, hired another faculty member, Dr. Jonathan Hernandez, who started at the beginning of 2026, revitalized our collaborative relationship with the U.S. Department of Agriculture, Honey Bee Breeding, Genetics, and Physiology Research Unit, and graduated seven students. Unfortunately, we also lost two valued friends and colleagues, Dr. Lane Foil and Mr. Jeff Murray, both of whom passed away in the summer of 2025. Through all these changes, the LSU Department of Entomology continued our proud tradition of developing innovative solutions to insect-related problems and disseminating these solutions to the citizens of Louisiana and beyond. These accomplishments are detailed in this newsletter. Our faculty, staff, and students published over 40 refereed journal articles and dozens of extension publications, videos, and other non-technical and general-interest articles, procured



Dr. Michael Stout



Entomology faculty, students, research associates, and post docs at the 15th Annual Graduate Student Symposium

From Left to right

Back row: Dr. Stephen Baca, Dr. Ivan Grijalva, Usman Mohammed, Dr. Jeff Davis, Carlos Rivera Oliver, Shucong Lin, Hasim Hakanoglu, Karina Nolasco, and Austin McKay.

3rd row: Flaminia Mariana, Schyler Lee Thibodeaux, Nahomi Lopez Umana, Joshua Broussard, Poorna Kalyani Munagala, Dr. Todd Johnson, Dr. Kristen

Healy, Saurav Upadhyaya, and Saurav Ranabhat.

2nd row: Dr. Michael Stout, M. Danyal Khan, Victoria Moreno, Srabani Saha, Stephanie Vaughn, Celeste Mejia Gonzalez, Reuel Pablo, Victoria Bayless, Sophie Sumner, Chiranjivi Sharma, and Dr. Karen Sun.

1st row: Brandi Misiaszek, Dr. Rodrigo Diaz, Jayvee Bruno, Vanshika Jindal, Jyoti Sharma, Anjana Duwal, Bhavana Patla, Madeline Phillips, Ridley Graugnard, and Toviah Bass.

Photo by Bhavana Patla

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DR. LANE FOIL (1949-2025)

Dr. Lane Foil, a Professor in the Department of Entomology at LSU for over four decades and a valued friend, colleague, and mentor, died in June 2025 at the age of 76 following a brief illness. Dr. Foil made pioneering contributions on the biology and management of pestiferous flies, including studies on their economic effects, interactions with wildlife and livestock, and importance as vectors of disease. He leaves a long list of accomplishments and a legacy of scholarship, mentorship, and scientific innovation.

Born in Mississippi, Foil graduated from Auburn University with a bachelor's degree in zoology and then worked at the Jackson (Mississippi) Zoological Park, where he encountered many exotic animals and became "locally famous" and featured in regional media outlets, according to Foil's family, for raising a baby wallaroo for seven months.

Foil then earned a master's degree in preventive medicine from the University of Mississippi Medical Center in 1975 before receiving his doctorate in medical entomology from Mississippi State University in 1978. Hired by the AgCenter in 1980 to specifically study horse flies, he soon expanded his research.

At the AgCenter, Foil began studying anaplasmosis in cattle and equine infectious anemia, or "swamp fever," and helped reduce the numbers of animals suffering from those diseases worldwide. Foil studied the mosquito-borne West Nile Virus, the connection between fleas and cat scratch fever and many other diseases linked to insects.

In the 1990s, Foil turned his attention to horn flies, which were the top economic pest for cattle, and produced several studies focused on their resistance to common insecticides and the economic impact of the flies on crossbred beef cattle in the South.

Beginning in 2012, Foil researched the blue tongue virus and the epizootic hemorrhagic disease virus, known by its initials EHDV in deer at the Wildlife Research Institute at the AgCenter Bob R. Jones-Idlewild Research Station in Clinton, and in 2013, he was named to the Pennington Chair for Wildlife Research.



Lane Foil in his lab in 2019. Photo by Olivia McClure

One of Dr. Foil's proudest late-career accomplishments was his work on sand flies and transmission and management of leishmaniasis. Along with his students, Dr. Foil demonstrated the efficacy of "feed-through systemic control" of sand flies, an approach for reducing leishmaniasis transmission by delivering insecticides to sand fly larvae that feed on the feces of treated rodents and to sand fly adults that feed on infected rodents that act as reservoirs of the Leishmanial parasite. This approach was recently demonstrated to be effective at an epidemiologically relevant spatial scale in the Middle East. This is an outstanding example of the global impact of research done in the LSU AgCenter.

He received four U.S. patents for vaccines, including two for animal vaccines, and wrote more than 170 articles for journals. In 2006, Foil received the AgCenter's Doyle Chambers Research Award for meritorious contributions to agriculture. The committee awarding the honor cited his "unconventional approach" to research and that it yielded practical solutions that were adopted worldwide.

Foil was devoted to his research and mentoring young scientists, his colleagues said, and actively conducted research until his death, collecting specimens and planning new projects.

Kyle Peveto contributed to this article. ■

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over \$2.5 million in new grants and contracts, and gave over 300 talks and presentations to scientific and lay audiences.

As always, it was a privilege to serve the citizens of Louisiana in 2025 and we look forward to another successful year in 2026. This

newsletter, in addition to providing information about departmental activities and achievements, serves as an invitation to our alumni and friends to participate with us in our efforts. We welcome suggestions for improving our programs, and invite you reach out to us by email, phone, remote

conference, or, even better, by visiting us on campus. In addition, if you would like to donate to monetarily support any of our programs, details for doing so can be found in this newsletter.

Again, the Department of Entomology sincerely appreciates your support.

JEFF MURRAY (1957-2025)



Left to right: Miranda Logan, Sara Navarro, Jeff Murray, Celeste Mejia Gonzalez, Poorna Kalyani Gala, Reuel Pablo, Chancy Sibakwe, Anjana Duwal, and Cristofer Mauricio Martinez.

Photo by Anjana Duwal

Jeff Murray Research Associate Department of Entomology, Louisiana State University Agricultural Center

It is with a heavy heart and deep sadness that I announce the passing of Mr. M. Jeff Murray. Born on February 23, 1957, to Mark and Mary Murray, Jeff grew up in North Adams, MA, before embarking on a life of learning and meaningful connection. Jeff made Baton Rouge his home for decades, building a rich and fulfilling life rooted in friendship, mentorship, and service. His work included field surveys, writing research grants, and mentoring students—always with a generous spirit and sharp intellect.

He earned his BA degree in anthropology from the Massachusetts College of Liberal Arts and went on to pursue a Master's in Geography at LSU. His thesis research took him to Belize, where he studied Mayan Indian settlements, before he returned to a career as a research associate in entomology and an instructor of geography with the LSU AgCenter.

Jeff was a long-time research associate with the Department of Entomology at the LSU AgCenter. He joined the department in 1990 when he began working with Dr.

Larry Rolston on sweetpotato breeding, IPM of sweetpotato weevil, and on taxonomic catalogs for several families of Hemiptera. From 1994 until 2012, he worked in sweetpotato IPM, particularly chemical control of root feeding insects with Drs. Abner Hammond Jr. and Rick Story. In 2012, he joined the Davis Lab and worked on multiple soybean and sweetpotato IPM projects.

Though he never embraced the Louisiana climate, Jeff remained true to the deep bonds he formed. He was godfather to many of his friends' children and was considered family by countless people in the community. Jeff was a man of quiet strength, deep loyalty, and a dry wit that endeared him to all who knew him.

Many of you had the pleasure of knowing him. He is survived by loving cousins, extended family, and a wide circle of friends. Though he was never married, he was never alone—his life was full of meaningful relationships, long conversations, and shared laughter. Jeff was jovial, kind, and always willing to do anything for anyone. He will be greatly missed as a colleague and a friend.

Dr. Jeff A. Davis contributed to this article. ■



Left to right: Jeff Murray and Jeff Davis at AgMagic. Photo by Anjana Duwal



Left to right: Sara Navarro and Jeff Murray at the 2025 Southeastern Branch meeting of the Entomological Society of America. Photo by Anjana Duwal



Basic Insect Identification Training and Collection Making for AgCenter Extension Agents



Students observing insect specimens

Left to right: Jessie Hoover, Kyleigh Bass, Willaim Wallace, Nate Jennings, Paul Bongarzone, Bert Hammet, and Stephen Baca. Photo by Anjana Duwal

Identification is a critical step to understanding if an insect is a pest and for handling a pest infestation properly. Misidentification of termite species alone can cause homeowners up to \$100,000 in damage. For farmers, the cost associated with damaged crops could be much higher. Louisiana has a subtropical environment,

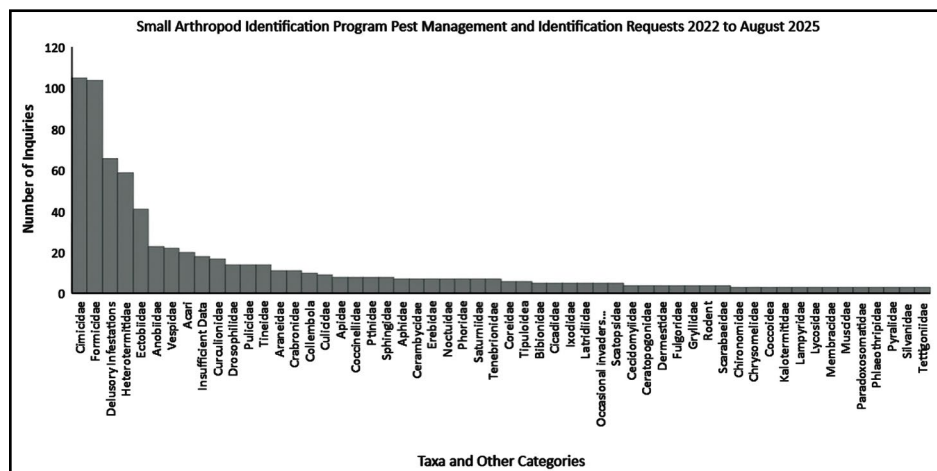
which makes the state prone to pest problems year around. LSU extension agents are the first line of defense for homeowners and farmers alike. Many of them are expected to guide clients on identification and management methods.

Louisiana State Arthropod Museum (LSAM) and LSU Department of Entomology

faculty and staff operate the Small Arthropod Identification Program, which annually receives numerous pest management and identification queries in the form of physical specimens and digital photographs. Many of these inquiries come from LSU parish extension agents and represent many different insect families. To successfully identify

an arthropod submitted to the Small Arthropod Identification Program, we request that agents submit specimens in good condition that are properly preserved or send high-quality photos. In some cases, this can be challenging for inquirers to accomplish without prior experience or training. Additionally, without knowledge of

Insects and other arthropods submitted to the LSU Entomology Small Insect Identification Program, organized by order. Arthropod categories that had 2 submissions are not included.





At the Hilltop Arboreum for Insect Identification Training

Top left to right: Kerry Heafner, Nate Jennings, Michael Ferro, William Wallace, Tyler Garza. Second row, left to right: Christine Gambino, Chris Carlton, Paul Bongarzone, Aaron Ashbrook, Clark Robertson, Bert Hammet. Front row, left to right: Stephen Baca, Camille Brady, Ashley Pereira, Jessie Hoover, Kyleigh Bass, Victoria Bayless. Photo by Amy Hughes

Night collecting event at Hilltop

From left to right: Abby (dog), Dr. Stephen Baca, Christine Gambino and Dr. Aaron Ashbrook. Photo by Michael Ferro

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how to preserve specific insect taxa, specimens may arrive in poor condition, making identifications impossible. Recognizing the need to address these concerns, Drs. Aaron Ashbrook, Stephen Baca, Chris Carlton, Michael Ferro (Clemson University) along with Christine Gambino, Extension Associate, and Victoria Bayless, Curator of the Louisiana State Arthropod Museum (LSAM), created an Insect Identification Training Workshop for extension agents from all over the state. The team received a SEED grant from the LSU AgCenter for a two-year training program. We had interest from 27 agents but were only able to accept 11 of them due to space and funding. The first year consisted of a two-day event at the Hilltop Arboreum on March 17-18, 2025. We hosted a workshop to train agents on how to make basic insect identifications and

learn insect morphology and identify characters of different taxonomic orders and selected families. We also trained them in how to create insect collections, pin insects, and create labels for use as reference specimens to improve quality and speed of evaluations of pest management inquiries. Additionally, we assisted agents in making their own collections to serve as tools for 4-H and other outreach events.

For the second year of the training, our team plans have the same 11 agents attend. The event was held at Botanical Gardens at Burden from May 5-6 and included an opportunity to do night collecting. Due to many emerging invasive crop pests, we will cover these in detail. Lectures will be given on structural pests, mites, beneficial pollinators, and delusory infestation. The agents are encouraged

to bring in specimens that they collected last year for identification and preservation. Overall, we have found that agents are excited to learn from specialists, and these programs are critical for us to continue to build teams that win!

For more information on insect identification, use the QR code below:



LSU ENTOMOLOGY PARTNERS WITH USDA-ARS TO DEVELOP IPM STRATEGIES FOR HONEY BEE HEALTH

Honey bees are social insects that act as effective pollinators, important for the reproduction of many flowering plants, including a third of the world's food crops like fruits, nuts, and vegetables. Due to the pollination services they offer, they contribute to the sustainability of entire ecosystems, having a direct impact on food security and biodiversity.

Nationwide, there are about 2.71 million honey bee colonies and one of the biggest issues facing the commercial beekeeping industry today is the parasitic Varroa mite (*Varroa destructor*). Varroa mites physically damage developing honey bees by feeding on them and, in doing so, transmit a variety of detrimental diseases. If left untreated, infested colonies are weakened, unable to effectively pollinate crops, and typically die within a field season. In recent years, the Varroa mite has developed strong resistance against a historically effective miticide, leading to increased colony losses in commercial and hobby beekeeping operations. As many of our agricultural crops depend on honey bee pollination, tackling this issue is paramount not only to commercial beekeepers, but also U.S. food production systems.

LSU Entomology has teamed up with USDA Agricultural Research Service (ARS)'s Honey Bee Breeding, Genetics, and Physiology Research scientists Drs. Michael Simone-Finstrom, Arián Avalos, Frank Rinkevich and Elizabeth Walsh in Baton Rouge to collaborate on a crucial project aimed at controlling the Varroa mite. As part of a larger ARS Areawide Pest Management Program, LSU AgCenter extension associates Paula Castillo and Joseph McCarthy (LSU Entomology alums) are working directly with ARS scientists and commercial beekeepers to develop and implement a comprehensive integrative pest management (IPM) strategy to effectively control the Varroa mite.



Left to right: Paula Castillo and Joseph McCarthy working on miticide efficacy assessments in a commercial apiary in North Dakota. Photo by Michael Simone-Finstrom

The ARS Areawide Pest Management Program is a massive undertaking comprised of several objectives that focus on different aspects of Varroa control. These objectives involve testing novel and newly registered miticides to avoid issues with resistance, increasing the prevalence of Varroa resistant honey bees in the beekeeping industry, modernizing the genetic tools used to breed for Varroa resistance, and evaluating the economics of Varroa control to better understand the context of mite treatment on a national scale.

The goal of this collaboration is to leverage the entomological knowledge and extension expertise of the LSU AgCenter with the research, technology, beekeeping experience, and stakeholder relationships of the ARS lab. The main roles of Castillo and McCarthy will be to bridge the gap between ARS scientists,

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Joseph McCarthy works with honey bee queens that will be used for instrumental insemination.

Photo by Michael Simone-Finstrom



Paula Castillo checking on a young colony as part of a disease resistance project.

Photo by Joseph McCarthy



Left to right: Joseph McCarthy & Paula Castillo collecting samples and assessing colony health with bees in Michigan.

Photo by Michael Simone-Finstrom

commercial beekeepers, and queen breeders. They are actively participating in each objective of the areawide project to further communicate important research updates related to miticide resistance and novel miticide efficacy, along with developing workshops to teach commercial beekeepers how to identify mite resistant genetic traits in their colonies and connect a network of queen breeders to

share valuable genetic materials. They will additionally work with commercial beekeepers to implement IPM strategies that are regionally relevant, economically feasible, and effective at controlling the Varroa mite. As a result of this collective effort, it is expected to improve overall honey bee health over the years, through contributing impactful improvements to the beekeeping industry.

HELP US TO ENSURE EXCELLENCE IN ENTOMOLOGY

While the department receives monetary support for its core research, extension and teaching programs, private financial support is vital for enhancing our existing programs, providing additional financial support for our students and beginning new initiatives. Please consider contributing to help support our programs.

You may help to support the Entomology Department by donating to one of the funds below:

- #100162 – Entomology Development Fund
- #100166 – Entomology Research Support Fund
- #104126 – Extension Entomology Development Fund
- #104131 – Louisiana State Arthropod Museum Fund
- #104133 – Entomology and Alternate Uses
- #104134 – Integrated Pest Management Research Fund
- #104135 – Arthropod Pest Management Program Support Fund
- #105260 – Louisiana Mosquito Control Association Endowed Scholarship

Donations can be made by accessing the LSU Foundation site at www.lsufoundation.org/give or by sending a personal check made out to the LSU Foundation with a letter stating which fund you would like to donate to. Address the letter to:

Entomology Department
404 Life Sciences Building
LSU Campus
Baton Rouge, LA 70810
225-578-1628

For more information contact:
Michael J. Stout
Professor and Department Head
mstout@agcenter.lsu.edu



Left to right: LeighAnn Slowick, Austin McKay, Arjun Khadka, and Yangzhou Wang. Photo by LeighAnn Slowick

Dr. Karen Sun, the Department of Entomology's termite biologist, directs an interdisciplinary research program that integrates insect behavior, chemical and physiological ecology, and molecular biology to understand the biology and improve the management of the Formosan subterranean termite (*Coptotermes formosanus*), one of the most damaging invasive species in the world. In 2024, Dr. Sun was awarded a prestigious grant from the National Science Foundation, Division of Integrative Organismal Systems, to study desiccation and water balance in subterranean termites. The grant is titled, "Mechanisms of acclimation for desiccation resistance in subterranean termites" and her Co-PI on the grant is Dr. Henry Chung from Michigan State University.

Dr. Sun provided the following summary of the grant:

Maintaining water balance is an increasing challenge for organisms living in drier and warmer environments under climate change. Insects, the most diverse organisms on Earth, are particularly vulnerable to water loss due to their small body size and high metabolic rates. To mitigate the risks of desiccation, insects are equipped with various physiological strategies, such as producing a waterproof barrier on their body surface, altering breathing patterns, and reducing water excretion. However, there is limited understanding of the extent of flexibility in their physiology over their lifetime to cope with changing environments, and even less is known about species living underground

that play vital ecological roles. Subterranean termites are widespread wood decomposers, yet some species are serious structural pests, making them an ecologically and economically important group. This study explores how subterranean termites adjust their physiological responses to alterations in soil moisture and temperature, as well as the molecular mechanisms underlying this flexibility, by examining multiple termite species inhabiting different climate regions across the United States. This understanding carries significant implications for predicting the resilience and susceptibility of termites to climate change and human impacts, thereby informing conservation and management strategies. The research findings will be disseminated through a workshop for the pest control industry and through the development of educational materials for the public. Termites cause billions of dollars of damage in the U.S. each year, thus the work has strong implications for advancing knowledge related to the bio-economy. Furthermore, this project will support undergraduate students in conducting summer research projects, while also offering interdisciplinary training opportunities for junior scientists.

Congratulations to Dr. Sun and her lab members (Dr. Yangzhou Wang, Haşim Hakanoğlu, Austin McKay, and LeighAnn Slowick) on this outstanding achievement!

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■ **Austin McKay** was born in Sacramento, California, and spent the first six years of his life in Davis, California. In the following years, he moved to Helena, Montana, and Abita Springs, Louisiana. Following the move to Abita Springs, he found a passion for nature and science while earning his Eagle Scout rank in the Boy Scouts of America. After graduating from Fontainebleau High School in Mandeville, Louisiana, he attended Rhodes College in Memphis, Tennessee, where he played football, ran fraternity philanthropy events, and was a member of multiple academic honor societies. In May 2023, he graduated cum laude with a Bachelor of Science in Biochemistry and Molecular Biology. Following graduation, Austin moved back to Abita Springs, Louisiana, and chose to become a teacher at Fontainebleau High School. While at his alma mater, he taught Spanish and Students with Exceptionalities (SWE), and coached football, basketball, and powerlifting. Although he found teaching rewarding, he knew that his passion was research and science. Austin found his opportunity to continue his education in the field of science at Louisiana State University. In January 2025, Austin started his Ph.D. study under the guidance and support of Dr. Karen Sun. His Ph.D. research project investigates the behavioral, physiological, and molecular basis behind subterranean termite survival under flooding conditions.



■ **Qian “Karen” Sun** was born and raised in North China. She received her BS in Life Sciences in 2008 and MS in Ecology in 2010 from China Agricultural University, followed by a Ph.D. in Entomology from the University of Kentucky in 2015. To continue pursuing her passion for social insects, she remained in the same lab for a short postdoctoral appointment studying the chemical ecology of termites and then moved to Rockefeller University for another postdoc studying social behavior in ants. Karen joined LSU as an Assistant Professor in 2018 to establish the Laboratory of Urban Entomology and Social Insects, and she was promoted to Associate Professor in 2024. Her research program centers on the chemical, behavioral, and physiological ecology of social insects, with a particular emphasis on termites, and integrates this knowledge into pest management. In addition to research, Karen’s responsibilities also include extension through training termite management professionals and teaching graduate and undergraduate courses. She greatly enjoys her work and plans to continue her role in academia.

■ **Yangzhou Wang** is currently a Postdoctoral Researcher at Louisiana State University, where he investigates the mechanisms underlying desiccation resistance of termites. With a diverse academic and research background, he previously served as an Associate Professor at the Jilin Academy of Agricultural Sciences in China. His postdoctoral research spans multiple institutions, including the Pacific Biosciences Research Center in Hawaii and the Chinese Academy of Agricultural Sciences. He was also a visiting scholar at the USDA-ARS Corn Insects & Crop Genetics Research Unit in Iowa and has supervised graduate students at Jilin Agricultural University in China. Yangzhou holds a Ph.D. in Ecology from the Chinese Academy of Sciences. His research focuses on the intricate relationships between fungi, insects, and plants, addressing evolutionary questions through the application of population genetics and molecular biology techniques. He has successfully translated his findings into actionable strategies that promote sustainable pest control practices. His work has been supported by funding from USDA-ARS, China, and France.



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■ **Haşim (Hash) Hakanoğlu** was born in Saudi Arabia to Syrian parents and spent his adolescence moving between Syria, Saudi Arabia, and Egypt before his family settled in Istanbul, Turkey. He earned his BSc in Genetics and Bioengineering from Istanbul Bilgi University in 2020 and subsequently joined Dr. Christopher Mayack's group at Sabanci University, where he completed an MSc in Molecular Biology, Genetics, and Bioengineering. His master's research focused on differential pathogen

prevalence and abundance, as well as whole protein-coding transcriptome variation, in local honey bee (*Apis mellifera*) populations selected for resistance to *Varroa destructor*, a parasitic mite and the primary driver of colony losses worldwide, compared with unselected populations. In August 2022, he joined Dr. Sun's laboratory as a Ph.D. student, collaborating with Dr. Kate Ihle at the USDA-ARS Honey Bee Breeding, Genetics, and Physiology Research Unit. While Dr. Sun's broader research

program focuses on the Formosan subterranean termite, Hash's doctoral work is centered on honey bees and is conducted mainly within the USDA-ARS environment. His research investigates the effects of selection for *Varroa* mite resistance on (1) worker lifespan and age at foraging onset; (2) the expression of molecular markers, particularly vitellogenin, associated with worker longevity; and (3) vitellogenin gene evolution in U.S. commercial honey bee populations. In addition

to his primary research, he supports members of the Sun Lab with statistical and bioinformatic analyses. His work spans multiple approaches, and he routinely wears many hats: conducting behavioral studies using observation hives to track individual bees throughout their lifetimes, performing molecular experiments, and carrying out bioinformatic analyses. Hash plans to graduate in summer 2027 and pursue a career as a bioinformatician or computational biologist.

NEW FACULTY MEMBERS

■ Morgan (Mo) E. Christman

I am an Assistant Professor of Pollinator Ecology. I received my B.S. in Biology and a B.A. in Environmental Studies from Denison University. I then obtained my Ph.D. in Ecology from Utah State University under the advisement of Drs. Ricardo Ramirez and Lori Spears. While at Utah State University, I completed a National Science Foundation Climate Adaptation Science traineeship and received a Geographic Information Systems certificate. My research evaluated landscape, climate, and management impacts on bumble bees in agroecosystems. After my Ph.D., I was a postdoctoral scholar at The Ohio State University in Dr. Jamie Strange's lab, where I evaluated the impact of habitat quality and management practices on endangered rusty patched bumble bee populations. I then continued my research as a postdoctoral fellow with the USDA-ARS Pollinating Insect–Biology, Management, Systematics Research Unit under Drs. Jonathon Koch and Jamie Strange, investigating the impacts of climate change and habitat degradation on threatened and endangered bumble bees throughout the United States.

My research and extension program is dedicated to studying the ecology and conservation of native and managed pollinators across natural, agricultural, and urban landscapes. We are committed to evidence-based science that increases biodiversity, promotes food security, informs conservation practices, and supports the needs of Louisianans.



■ Ivan Grijalva

In January 2025, I started as a new Assistant Professor in Precision Pest Management and Data Analytics in the Entomology Department as part of Louisiana State University's new Precision Agriculture initiative. My educational background includes a bachelor's in Agricultural Sciences and Production Engineering from Panamerican School of Agriculture "Zamorano" and a Master's in Entomology from Purdue University, where I focused on Integrated Pest Management. I earned my Ph.D. in Entomology from Kansas State University, specializing in AI-Machine Learning and Precision Agriculture. I also hold a Geographic Information Systems (GIS) and Remote Sensing certification. During my doctoral and postdoctoral training, I developed machine learning models for automated pest detection and counting from imagery, research that has been incorporated into robotic systems and a U.S. provisional patent for an "Autonomous under-canopy scout and application vehicle for crop, crop health, and pest detection and treatment" using AI and machine learning in sorghum production systems.

My expertise lies in Precision Agriculture, AI-Machine Learning, Geographic Information Systems, and Remote Sensing, with a particular research emphasis on applying machine learning models for detecting insects, weeds, and diseases for use in digital agricultural tools, drones and robotics that enhance precision pest management. I am also interested in using GIS-based remote sensing for pest detection and conservation to facilitate management at both local and landscape levels. I have published multiple articles in high-impact factor journals, with a particular emphasis on machine learning for automated object detection and its broader contributions to advancing automation across disciplines.



Rice Production School established for the Louisiana Rice Industry



RPS students looking for disease or insects in the greenhouse

Left to right: Adam Famoso, Tyler Musgrove, Tanner LaGrange, Chris Green.
Photo by Christine Gambino



Group touring Supreme Rice Mill

Left to right: Chris Greene, Corey Conner, Kane Webb, Blake Wilson, Kim Landry.
Photo by Christine Gambino

The Rice Production School was designed in 2025 by extension associate Christine Gambino and Extension Entomologist Dr. Blake Wilson as an intensive training program intended to strengthen the knowledge of stakeholders about current farming practices. Rice is an important agricultural commodity in Louisiana, ranking among the top four in acreage and value. Approximately 461,472 acres were planted in 2024, valued at more than \$713 million. Rice is also produced in the states of California, Arkansas, Texas, Mississippi, and Missouri. However, production practices vary from state to state, and practices in Louisiana are particularly unique due to the rotation of rice with crawfish production.

The inaugural Rice Production School was conducted from April to October 2025. Each class consisted of four to five lessons. To minimize disruption to farming schedules, sessions were spaced so that producers were away from their operations for no more than

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two days per month. The school was held on the second Monday and Tuesday of each month with a full eight hours of instruction. Meetings were held in April, May, July, August, September, and October. There was a total of 15 participants who paid \$300 to attend.

Instruction leaned heavily on lectures, supplemented by selected field demonstrations. Breakfast and lunch were provided at each session by the local catering company Chomp Smack. Participants had the chance to tour various facilities: visiting Supreme Rice to view their milling process, stopping at Crowley Grain for seed coating, and observing sprayer drone demonstrations with Randy Price of the AgCenter. Informal networking and peer exchange were encouraged throughout the day.

To evaluate the program's effectiveness, participants completed a pre-training and post-training knowledge assessment. This assessment covered key areas of rice production such as biology and crop management, pest, disease and stress management, wildlife biology management, weed identification, and economic and business management. Participants showed a statistically significant increase in knowledge following participation in the school. The information gathered from this school will be used to improve future programming.

The Rice School provides a robust platform for delivering applied, research-informed agricultural education. Continued investment in this program, coupled with refinements based on participant feedback, can further strengthen Louisiana's rice industry by equipping growers, advisors, extension agents, supply chain partners, and college students with the knowledge necessary to adapt to evolving production challenges. The success of similar initiatives, such as the sugarcane production schools conducted in 2017 and 2018, underscores the demand for and value of these intensive, hands-on educational experiences across Louisiana's agricultural sectors.



Rice Production School participants at the H. Rouse Caffey Rice Research Station

Left to right: Tanner LaGrange, Prasanta Subudhi, Blake Wilson, Christine Gambino, Jason Hartman, Tyler Musgrove, Mike Lavergne, Corey Conner, Kim Landry, Hunter Brown. Photo by Kim Guidry

Students at Crowley Grain are learning how seeds are treated

Left to right: Aaron Beatty, Chris Greene, Matt Lavergne, Jason Hartman, Blake Wilson, Tyler Musgrove, Tanner LaGrange, Derek Clay. Photo by Christine Gambino



Students learning about crawfish production at the H. Rouse Caffey Rice Research Station

Left to right: Todd Fontenot, Chris Bonvillian, Christine Gambino, Ryan McClain, ET Trahan, Corey Conner, Jason Hartman, Chris Green, Aaron Beatty, Derek Clay, Matt Hendricks, Tanner LaGrange, Blake Wilson. Photo by Kim Guidry

POLLINATOR MINISERIES AT LaHOUSE



Left to right: Damon Abdi, Bert Hammet, Aaron Ashbrook, Christine Gambino, Kevin Langley, Brooke King, Morgan Christman, Ashley Pereira after the LaHouse Pollinator event standing behind example plants. Photo by Celeste Robin

LaHouse serves as a research-based model home that demonstrates sustainable, resilient, and healthy building and landscape practices for Louisiana homeowners. The LaHouse structure showcases solutions that improve comfort, durability, environmental quality, and safety while reducing energy use, water consumption, and storm-related losses. A key focus of LaHouse programming includes pollinator-friendly landscapes, proper drainage, native plantings, and integrated habitat management. Pollinators, such as bees, butterflies, beetles, moths, flies, and even bats, play a vital role in ecosystems and agriculture. Pollinators support the reproduction of roughly

three-fourths of flowering plants and a significant portion of food crops.

In October 2024, Dr. Aaron R. Ashbrook and Extension Associate Christine Gambino collaborated with the LSU AgCenter LaHouse Home and Landscape Resource Center to provide community education on pollinator conservation, disease vector management and resilient landscaping.

To cover a wide-range of topics on pollinator conservation, the event featured experts within the LSU AgCenter system. Dr. Morgan Christman, LSU Pollinator Ecologist, presented on pollinator biology and practical actions that citizens can take to support them. Dr. Kristen Healy, LSU Public Health

Extension Entomologist, gave a lecture on how to protect against mosquitoes while also maintaining pollinator habitat. Other speakers included Kevin Langley, Vice President of the Capital Area Beekeepers Association along with Bert Hammet and Ashley Pereira, East Baton Rouge Extension Agents, who spoke on beekeeping practices and how to grow pollinator friendly gardens.

In collaboration with LaHouse, Ashbrook and Gambino followed up the event with an “Bats in Our Ecosystem Day” on May 24, 2025, bringing needed attention to another critical, and often misunderstood, group of beneficial organisms. The event was designed to be informal yet educational,

offering the public an opportunity to learn about Louisiana’s native bat species, bat-friendly habitat practices, disease risks, and structural exclusion methods. Although pest management professionals typically focus on insects, they often encounter wildlife such as bats during home and building inspections but are not aware of the legal aspects of bat exclusion within the state. All bat species are protected in Louisiana, and it is illegal to harm them. From experience Ashbrook knew there was a need for vertebrate-focused training to support safe and responsible practices.

The event’s popularity exceeded expectations. Originally scheduled at

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LaHouse, the high numbers of registrants (over 300 people) prompted Ashbrook and Gambino to relocate to the Howe-Russell Kniffen Geosciences Building on LSU's campus. The event was held in two sections. First was a lecture by Dr. Teague O'Mara, Director of Conservation Evidence at Bat Conservation International. Dr. O'Mara spoke on local bat species, how to identify them, eating and sleeping habits, and how to support bat conservation. The second speaker, Michael Meyers, Boy Scout Master in Metairie, provided a practical demonstration of building and maintaining a bat house as well as other considerations. Participants included a variety of interested people such as homeowners, pest management professionals, wildlife and bat enthusiasts, and community members seeking guidance on how to support local bat populations, support pollinators, safe pest management, and human health protection.

From supporting pollinator habitats, managing mosquitoes, to expanding community understanding of bats, these collaborative efforts between the LSU AgCenter, LaHouse, and the Department of Entomology demonstrate a growing statewide commitment to sustainable landscapes and wildlife stewardship. Through research, outreach, and hands-on education, we can continue to help residents create a healthier, more resilient Louisiana!



Left to right: Christine Gambino and Aaron Ashbrook hold giveaways for the event.
Photo by Celeste Robin



Pollinator garden at LaHouse.
Photo by Celeste Robin



Pollinator garden at LaHouse.
Photo by Celeste Robin

2025 ENTOMOLOGY AWARD WINNERS



Dr. Sibel Bargu, LSU Associate professor, left, and Jyoti Sharma. Jyoti Sharma placed second at the Pinkie Lane Gordon School 3MT Fall 2025 Finals Competition. Photo by Alexis Malbroux

Pinkie Lane Gordon Graduate School 3MT Fall 2025 Finals Competition

November 2025

- **Jyoti Sharma** – Second place. “Silicon (Si): A Tiny Element Weakening Insects and Strengthening Plant Defense”

2025 Annual Meeting of the Entomological Society of America

November 2025

Graduate Poster: PBT, Honey Bees and Pollinators

- **Hasim Hakanoğlu** – Second place. Uncovering vitellogenin diversity across managed U.S. honey bee stocks. **Hasim Hakanoğlu**, Garrett Slater, Qian Sun, Kate Ihle, Arian Avalos. 2025 Entomological Society of America. Portland, Oregon. November 2025.

Graduate 10-Minute Presentation: P-IE, Biocontrol

- **Brandi Hazard Misiaszek** – Second place. Population dynamics and ecological drivers of the naturalized weevil *Ochyromera ligustri*: A potential biological control agent of invasive *Ligustrum sinense*. **Brandi Hazard Misiaszek**, Amy Roda, Rodrigo Diaz. 2025 Entomological Society of America. Portland, Oregon. November 2025.

15th Annual LSU Entomology Department Graduate Student Symposium

October 2025

10 -min Oral Presentations Masters I

- **Reuel Pablo** – First place. Targeting the vector: evaluating chemistries to reduce potato virus Y (PVY)



Dr. Juang Chong, left, and Vanshika Jindal. Jindal placed second for oral talk (P-IE) section at Southeastern ESA, LSU (2025). Photo by Jyoti Sharma



Dr. Juang Chong, left, and Jyoti Sharma. Sharma placed first for Poster (P-IE) section at Southeastern ESA, LSU (2025). Photo by Vanshika Jindal

transmission. **Reuel Pablo**, F. O'Hara, D. Swale, Jeffrey A. Davis. 2025 Entomology Graduate Student Symposium. Baton Rouge, LA. October 17, 2025.

- **Celeste Mejia-Gonzalez** – Second place. Can nanodelivered azadirachtin repel *Myzus persicae*? **Celeste Mejia-Gonzalez**, Carlos E. Astete, Cristina E. Sabliov and Jeffrey A. Davis. 2025 Entomology Graduate Student Symposium. Baton Rouge, LA. October 17, 2025.
- **Christine E. Gambino** – Third place (Tie). Evaluation of Insect Pest Complexes in Rice Following Winter Planted Cover Crops. **Christine E. Gambino**, Blake E. Wilson, Michael J. Stout. 2025 Entomology Graduate Student Symposium. Baton Rouge, LA. October 17, 2025.

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Graduate Symposium winners

From left to right, Dr. Rodrigo Diaz, Saurav Ranabhat, Jayvee Bruno, Dr. Michael Stout and Chiranjivi Sharma. Photo by Christine Gambino

Vanshika Jindal – Third place (Tie). Nutritional Stress Alters the Physiology and Host-location Behavior of Two of Classical Biocontrol Agents of The Emerald Ash Borer. **Vanshika Jindal**, Todd Johnson. 2025 Entomology Graduate Student Symposium. Baton Rouge, LA. October 17, 2025.

10-min Oral Presentations Masters II

- **Saurav Ranabhat** – First place. Field Evaluation of Drone-Based Insecticide Applications Against Redbanded Stink Bug (*Piezodorus guildinii*) in Soybean. **Saurav Ranabhat**, James Villegas, Randy Price, Jayvee Bruno, O'Neal Edward, Daniel Barbosa. 2025 Entomology Graduate Student Symposium. Baton Rouge, LA. October 17, 2025.
- **Jayvee Bruno** – Second place. Strengthening the Plant, Fighting the Insect Pests: Does Silicon soil amendments Improve Soybean Resistance. **Jayvee Bruno**, James Villegas, Michael Stout, Jeff Davis, Brenda Tubana, Saurav Ranabhat, Daniel Barbosa, Edward O'Neal. 2025 Entomology Graduate Student Symposium. Baton Rouge, LA. October 17, 2025.
- **Chiranjivi Sharma** – Third place. Assessing the impact of trap type, fluon application, and lure composition on the collection of longhorned beetles (Coleoptera: Cerambycidae) in subtropical southeastern Louisiana. **Chiranjivi Sharma**, Winter Sheline, Elise Grossman, Nicole Jean-Williams, Jorge Macias-Samano, Robert R. Setter, Todd D. Johnson. 2025 Entomology Graduate Student Symposium. Baton Rouge, LA. October 17, 2025.



Stout lab at Southern ESA 2025

From left to right, Danyal Khan, Dr. Michael Stout, Jyoti Sharma and Laila Santos. Photo by Vanshika Jindal

Poster Session

- **Jyoti Sharma** – First place. Investigating the effect of silicon on the occurrence of rice insect pests and diseases using OsLsi1 rice mutants under field conditions. **Jyoti Sharma**, Thomas Tai, Michael Stout. 2025 Entomology Graduate Student Symposium. Baton Rouge, LA. October 17, 2025.
- **Yaping Ding** – Second place. Cross-kingdom translocation of aphid miRNAs to its endosymbiont. **Yaping Ding**, Honglin Feng. 2025 Entomology Graduate Student Symposium. Baton Rouge, LA. October 17, 2025.
- **Saurav Ranabhat** – Third place. Field Evaluation of Drone-Based Insecticide Applications Against Redbanded Stink Bug (*Piezodorus guildinii*) in Soybean. **Saurav Ranabhat**, James Villegas, Randy Price, Jayvee Bruno, O'Neal Edward, Daniel Barbosa. 2025 Entomology Graduate Student Symposium. Baton Rouge, LA. October 17, 2025.

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2025 ENTOMOLOGY AWARD WINNERS

Continued from Page 17



Dr. Michael Stout, left, and Vanshika Jindal. Jindal was presented the David J. Boethel Graduate Student Award in Entomology (Ph.D.). Photo by Todd Johnson



Dr. Michael Stout, left, and Chiranjivi Sharma. Sharma was presented the John and Grace Roussel Graduate Fellowship in Entomology (Masters). Photo by Todd Johnson

10-min Oral Presentations Ph.D. I

- **Anjana Duwal** – *Podisus maculiventris* Say pest age-specific predator preference. **Anjana Duwal**, Jeffrey A. Davis. 2025 Entomology Graduate Student Symposium. Baton Rouge, LA. October 17, 2025.

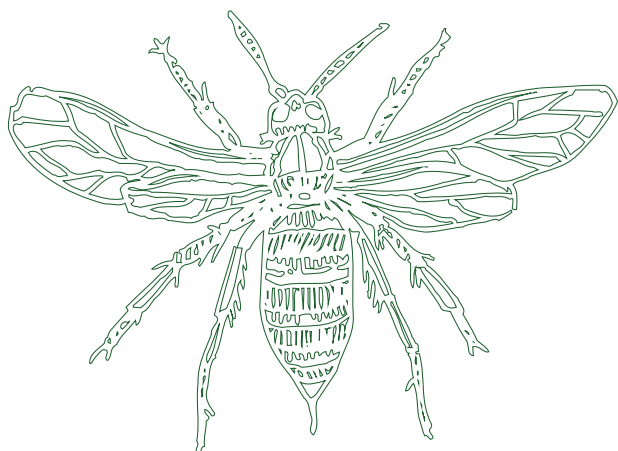
10-min Oral Presentations Ph.D. II

- **Haşim Hakanoğlu** – Exploring Vitellogenin Variants in U.S. Commercial Honey Bee (*Apis mellifera*) Stocks. **Haşim Hakanoğlu**, Garrett Slater, Qian Sun, Kate Ihle, Arian Avalos. 2025 Entomology Graduate Student Symposium. Baton Rouge, LA. October 17, 2025.

2025 Department Awards

David J. Boethel Graduate Student Award in Entomology (Ph.D.)

- Muhammad Danyal Khan



David J. Boethel Graduate Student Award in Entomology (Masters) •

- Vanshika Jindal

The John and Grace Roussel Graduate Fellowship in Entomology (Ph.D.)

- Haşim Hakanoğlu

The John and Grace Roussel Graduate Fellowship in Entomology (Masters)

- Chiranjivi Sharma

The L.D. Newsom Memorial Graduate Student Award in Entomology (Ph.D.)

- Allyson Martin Ewert

The L.D. Newsom Memorial Graduate Student Award in Entomology (Masters)

- Saurav Ranabhat

Faculty Awards

G&H Seed Research Award

- Rodrigo Diaz, Professor

Sedberry Award for Outstanding Graduate Teacher

- Jeffery A. Davis, Austin C. Thompson Distinguished Endowed Professor

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Ray and Dorothy Young Endowed Student Award

SCHYLER LEE THIBODEAUX • LSU COLLEGE OF AGRICULTURE

The 2025 recipient of the Ray and Dorothy Young Endowed Graduate Student Award in Field Crop Integrated Pest Management, Schyler Thibodeaux, was honored at the recent Louisiana Agricultural Technology and Management Conference hosted by the Louisiana Agricultural Consultants Association. Thibodeaux is a doctoral student in entomology under the mentorship of LSU AgCenter sugarcane and rice entomologist Blake Wilson. Her current focus of study is on the Mexican rice borer in Louisiana sugarcane. Mexican rice borer is an invasive species that threatens to cause >\$200 million in annual revenue losses to Louisiana's sugarcane and rice industries. Her work will be the first comprehensive research effort of this pest in Louisiana sugarcane. The research findings will directly benefit Louisiana crop consultants working in sugarcane as they adapt pest management strategies to the species. Particularly, it aims to determine if the scouting practices used for decades in managing a similar pest (the sugarcane borer) will be effective for the Mexican rice borer. The

majority of her research will be conducted on commercial sugarcane farms working directly with growers and crop consultants. Following graduation, Thibodeaux says her goals are to mentor the next generation of agriculture and continue the work of her mentors. She explains, "I hope to serve as an agricultural extension agent, where I can apply my Ph.D. training and critical thinking to both familiar and new challenges. My goal is to connect scientific and interdisciplinary insights with practical applications, helping to deliver efficient and economically viable solutions to advance Louisiana's agricultural sector." Thibodeaux is a native of Prairieville, LA, and was regularly exposed to horticultural sciences



From left to right, Jesse Young, Ms. Dorothy Young, Schyler Lee Thibodeaux, recipient of the Ray and Dorothy Young Endowed Assistantship, and Dr. Mike Salassi, LSU AgCenter Executive Associate Vice President and Director. Photo by Frankie Gould

growing up. Her passion for pest management became evident after an industry internship and numerous valuable mentorships. "This is by far the most significant award I've been given in my academic career. This award not only supports graduate students committed

to the betterment of Louisiana agriculture, but it represents Mr. Ray and Mrs. Dorothy's dedication to serving producers and advocacy for the state's agriculture industry," Thibodeaux said. "Receiving this award is truly an honor."

ENTOMOLOGY CLUB NEWS

In 2025, the LSU Entomology Club brought students together and made a big impact in the community. Both graduate and undergraduate students worked together to host fun events and help others learn about insects. The club leaders were Jyoti Sharma (President), Vanshika Jindal (Vice President), Anjana Duwal (Secretary), Chiranjivi Sharma (Treasurer), Bhavana Patla (ESA Marketing and Marketing Manager), Austin McKay (Social Media Manager), Miranda Logan (Undergraduate Representative), and Dr. Aaron Ashbrook (Faculty Advisor). The club received its first PSIF grant of \$1,500, which helped fund a Thanksgiving party for the department. Members also raised money by selling t-shirts, mugs, and Mardi Gras masks at events such as the annual ESA and Southeastern Branch meetings. The club awarded a \$250 travel grant to help a student attend the Southeastern Branch meeting in 2026. Club members enjoyed many activities, like a crawfish boil, making Mardi Gras beetle masks, art night with Dr. Diaz, a T-shirt design contest, and an insect-themed Halloween tailgate for the LSU vs. Texas A&M football game. The club also participated in outreach events for school kids, took part in the garden show, and attended AgMagic to share their love of insects. The club went on a group hike at Burden Gardens to collect insects and enjoy nature. Through these events, they have sparked young students' interest and excitement in insects by leading hands-on learning activities. The entomology club took flight this year, dazzling like a kaleidoscope of butterflies. Next year, we'll metamorphose into even more spectacular adventures!



Entomology Club meeting. Photo courtesy of LSU Entomology Club



Arts and Crafts Night with Dr. Diaz.
Photo by Anjana Duwal



Left to right: Bhavana Patla, Jyoti Sharma, Anjana Duwal, Chiranjivi Sharma, Austin McKay.
Photo by Jyoti Sharma



15th Annual Graduate Student Symposium.
Photo by Bhavana Patla



2026 Entomology Club. Photo by Austin McKay

2025 ENTOMOLOGY GRADUATES



Above, Rylea Norton graduated with a BSc in Plant and Soil Systems with a concentration in Urban Entomology and several years as an undergraduate worker and researcher. Mentors: Rodrigo Diaz and Stephen Baca (pictured, right). Photo by Victoria Bayless



Above, Chiranjivi Sharma at Fall 2025 Commencement. From left: Karishma Subedi, Chiranjivi Sharma, Todd Johnson. Photo by Morgan Christman. Right, Arjun Khadka and Dr. Qian Sun, right, at 2025 Commencement. Photo by Pritika Pandey



SUMMER 2025

Arjun Khadka, Ph.D. – Summer 2025

[Environmental, Social, and Molecular Regulation of Foraging Behavior in the Formosan Subterranean Termite](#)

Advised by Dr. Qian “Karen” Sun

Cristofer Martinez, M.S. – Summer 2025

[Host Plant Resistance to Stink Bugs in Commercial Soybean Varieties](#)

Advised by Dr. Jeffrey A. Davis

Mohamed S. Shaik, M.S. – Summer 2025

[Evaluation of DIY Pest Management Strategies for the German Cockroach \(*Blattella germanica*\) in the Presence of Vitamin K Precursors and Synthetic Amorphous Silica](#)

Advised by Dr. Aaron Ashbrook

FALL 2025

Vanshika Jindal, M.S. – Fall 2025

[Impact of physiological and environmental variation on the behavioral response of the two biological control agents of the emerald ash borer to host-associated odors](#)

Advised by Dr. Todd D. Johnson

Rylea Norton, Bachelor of Sciences in Plant and Soil Systems with a concentration in Urban Entomology – Fall 2025

Advised by Drs. Stephen Baca and Rodrigo Diaz

Chiranjivi Sharma, M.S. – Fall 2025

[Assessing the Impact of trap type, fluon treatment, and lure composition on the collection of Longhorned Beetles \(Coleoptera: Cerambycidae\) in two forest ecosystems in subtropical southeastern Louisiana](#)

Advised by Dr. Todd D. Johnson

Allyson M. Martin, Ph.D. – Fall 2025

[Supporting Managed Honey Bee \(*Apis mellifera*\) Health with Diverse Natural Products: Impacts on Nutrition, Immunity, and Gut Microbiota](#)

Advised by Dr. Claudia Husseneder

Tyler Musgrove, Ph.D. – Fall 2025

[Enhancing the sustainability of insect pest management in furrow-irrigated rice](#)

Advised by Dr. Blake E. Wilson

FACULTY ACTIVITIES

Aaron R. Ashbrook

Invited Presentations

- Ashbrook, A. Understanding and Controlling Major Louisiana Pest Ant Species. LSU AgCenter Category 3: Ornamental & Turf Pest Control. December 2025.
- Ashbrook, A. Mosquito Biology and Management. K-State Commercial Applicator Recertification Training Program. December 2025.
- Hudnall, C., Healy, K., Penn, J., Riegel, C., Ashbrook, A. Vector Control in the Gulf Coast Region: Identifying and Addressing Operational Barriers and Training Needs Among Pest Management Professionals. Louisiana Mosquito Control Association, Baton Rouge, LA, December 2025.
- Guevara, G., Riegel, C., Ashbrook, A.R., Penn, J., Fannin, M. Gulf South Vector Webinar Series: Gerardo Guevara. The Economic Contributions of the Professional Pest Management Industry and the Impact of Vector-Borne Disease Outbreak in Louisiana. Gulf South Vector Webinar Series. November 2025.
- Guevara, G., Ashbrook, A.R., Penn, J., Fannin, M., Assessing the potential economic impact of a mosquito-borne disease outbreak on the tourism industry in the New Orleans metropolitan area. Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.
- Portugal, S.J., Ashbrook, A.R., Sharma, A., Collaborative efforts of the North American Termite Survey (NATS) - PMPs, government, academia, and citizen scientists. Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.
- Ashbrook, A.R., Portugal, S.J., Sharma, A., Updates from the North American Termite Survey. Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.
- Ashbrook, A.R., How to Interact with Delusory Infestations Clients. Multi-State Vector borne Disease Webinar, Region 6. October 2025
- Ashbrook, A.R., Bat Houses and Conservation. Hilltop Arboretum, LA, October 2025.
- Ashbrook, A.R., Management, Behavior, and Biology of Bed Bugs. MSST Hybrid Recertification Event. October 2025.
- Ashbrook, A.R. Biting and Stinging Insects of Medical Importance in the Turf Environment. O&T Recertification Event. Opelousas, LA. October 2025.
- Ashbrook, A.R. Garden Pest and Beneficial Arthropods. Fall Garden Show. Hammond, LA. October 2025.
- Ashbrook, A.R. Northwestern Louisiana Pest Control Association and LSU Entomology Technician and Licensee recertification. In collaboration with the association president, I organized a recertification event for pest management professionals. I gave three presentations so that continuing education credits could be offered: bed bug biology and management, termite biology and identification, and conducive conditions for termites. September 2025. Attendees – 57.
- Ashbrook, A.R. Garden Pest and Beneficial Arthropods. Master Gardener's Training, September 2025.
- Ashbrook, A.R. Basic Entomology. Master Gardener's Training, September 2025.
- Ashbrook, A.R. Bed Bugs, Heat, and Insecticide Resistance. University of Georgia's Getting the Best Out of Pests Webinar Series. September 2025. Attendees - 325.
- Ashbrook, A.R. Garden Insects You Should Know. Master Gardener Presentation, August 2025.
- Ashbrook, A.R., Termite Biology, Identification, and Conducive Conditions. Louisiana Pest Management Association Summer Conference, Gulf Shores, AL. June 2025.
- Ashbrook, A.R., Pesticide Labels and Safety. Termite Basic Recertification School, Baton Rouge, LA. May 2025.
- Ashbrook, A.R., Working with Delusory Infestations Clientele. EPA Region 6 Inspector Training, Baton Rouge, LA. May 2025.
- Ashbrook, A.R., Bed Bug Inspections, Biology, and Integrated Pest Management. EPA Region 6 Inspector Training, Baton Rouge, LA. May 2025.
- Ashbrook, A.R., Termite Biology and Conducive Conditions. Pied Piper Pest Control, New Orleans, LA. May 2025.
- Ashbrook, A.R., What is the North American Termite Survey? Louisiana Pest Management Association online webinar series. April 2025.
- Ashbrook, A.R., North American Termite Survey Working Group Goals. Corteva online webinar series. April 2025.
- Ashbrook, A.R., Fire Ant Management in Sensitive Environments. LSU AgCenter Recertification: Schools, Govt. Housing and Antimicrobial Pest Control. Alexandria, LA. April 2025.

FACULTY ACTIVITIES

- Ashbrook, A.R., Biting and Stinging Insects Encountered While Managing Turf. LSU AgCenter, Ornamental and Turf Pest Control Recertification event, Bossier, LA. April 2025.
- Ashbrook, A.R., Garden Insects, Identification, and Integrated Pest Management. LSU Lake Charles Spring Garden Show. March 2025.
- Ashbrook, A.R., Biology and Exclusion. Today, Tomorrow, and Beyond – Rentokil Webinar Series. March 2025.
- Ashbrook, A.R., Ant Identification. LSU Parish Agent Identification Training Workshop, Baton Rouge, LA. March 2025.
- Ashbrook, A.R., Delusory Infestations Agent Training. LSU Parish Agent Identification Training Workshop, Baton Rouge, LA. March 2025.
- Ashbrook, A.R., Termite and Cockroach Identification. LSU Parish Agent Identification Training Workshop, Baton Rouge, LA. March 2025.
- Ashbrook, A.R., Hemipteran Identification. LSU Parish Agent Identification Training Workshop, Baton Rouge, LA. March 2025.
- Guevara, G., Fannin, M., Penn, J., Ashbrook, A.R. Patterns of entry and exit in the Louisiana pest control industry: A multi-decade analysis. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.
- Guevara, G., Fannin, M., Penn, J., Ashbrook, A.R. The economic contribution of the pest control industry in Louisiana, Mississippi, and Tennessee. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.
- Portugal, S., Sharma, A., Ashbrook, A.R. North American Termite Survey. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.
- Ashbrook, A.R. Termite Biology, Inspections, and Conducive Conditions.
- Ashbrook, A.R. Quarterly Extension Agent Training. Burden Botanical Gardens, Baton Rouge, LA. February 2025.
- Ashbrook, A.R. Fire Ant Management in Landscape Areas. Hammond Research Station, Hammond, LA. February 2025.
- Suiter, D., Ashbrook, A.R., Husseneder, C., Chouvinc, T., Forschler, B., Oi, F., North American Termite Survey Webinar, Getting the Best Out of Pests, hosted by University of Georgia. We offered CEUs in 12 states and had over 1,000 people in attendance. Included four hours of presentation.
- Ashbrook, A.R. Bed Bug Identification and Management. North American Termite Survey Training, Baton Rouge, LA and Webinar. January 2025.
- Ashbrook, A.R. North American Termite Survey. New Orleans IPM Symposium, Baton Rouge, LA. January 2025.
- Ashbrook, A.R. Delusory Infestations Panel. New Orleans IPM Symposium, Baton Rouge, LA. January 2025.
- Ashbrook, A.R. Bed Bugs and Management in Commercial Settings. New Orleans IPM Symposium, Baton Rouge, LA. January 2025.
- Ashbrook, A.R. How to Handle Delusory Infestation Clientele. LSU Winter Institute, Baton Rouge, LA. January 2025.
- Ashbrook, A.R. What is the North American Termite Survey? LSU Winter Institute, Baton Rouge, LA. January 2025.
- Ashbrook, A.R. Louisiana Bed Bugs and Management. LSU Winter Institute, Baton Rouge, LA. January 2025.
- Ashbrook, A.R. Louisiana Cockroaches and Management. LSU Winter Institute, Baton Rouge, LA. January 2025.

Other Presentations

- Bed Bugs, Heat, and Humidity. Entomology Today. December 2025.
- Firefly Habitat Restoration at Jean Lafitte. Louisiana Radio Network. December 2025.
- Winter Weather and Pests. WWL News Radio Interview. December 2025.
- Kissing Bugs A Worry for Students? LSU's Tiger TV. October 2025.
- Kissing Bugs Story for Louisiana First News. August 2025.
- Mosquitoes in Louisiana, WWL News Radio Interview. August 2025.
- Myths and Concepts about Mosquitoes, HuffPost. July 2025.
- Mosquitoes in Louisiana, The Advocate. July 2025.
- Asian Needle Ant Found in Louisiana, Louisiana Radio Network. July 2025.

FACULTY ACTIVITIES

- Asian Needle Ant Found in Louisiana, WWL News Radio Interview. July 2025.
- Asian Needle Ant Found in Louisiana, Unfiltered with Kiran. July 2025.
- Asian Needle Ant Found in Louisiana, Times-Picayune. 2025.
- Termite Swarm Season Interview, KTBS. May 2025.
- Termite Swarm Season Interview, Louisiana Radio. May 2025.
- Termite Swarm Season Interview, WCBI-TV. May 2025.
- Termite Swarm Season Interview, The Advocate. May 2025.
- Bat Conservation, LSU Get It Growing Interview. May 2025.
- Ambrosia Beetle Management, Get It Growing Interview. May 2025.
- Termites in Raised Garden Beds, LSU Get it Growing Interview. May 2025
- Pollinator Conservation, LSU Get It Growing Interview. May 2025.
- Cockroaches and their attraction to cardboard, HuffPost Interview. April 2025.
- Stinging Caterpillar Interview, WWL Radio. April 2025.
- Buck Moth Interview, The Advocate. April 2025.
- Standing Water and Mosquitoes, Get It Growing Interview. March 2025.
- Fire Ant Management, Get It Growing Interview. March 2025.
- Interview on Outreach and Extension, Madeline Fryer, Undergraduate. February 2025.

New Committees

- Louisiana Mosquito Control Board. Member. 2025 to current.

New Collaborations

- Gerardo Guevara-Milla, joined my lab as an intern for his master's program, where he studied under Dr. Jerrod Penn in Agricultural Economics. During his internship he studied the disease vector's impact on tourism during a disease outbreak from an economic perspective. We collaborated to quantify the economic impact of the professional pest management industry in Louisiana.

New Grants & Contracts

- German cockroach aged insecticide residues on variable surfaces trial, \$13,000, 2025.
- Formosan subterranean termite tree foam trial, \$22,000, 2025.
- Bait station efficacy against Argentine ants, \$8,750. 2025.
- Efficacy testing of the bed bug trap in a field trial, \$4,000. 2025.
- American and German cockroach study on bait efficacy, \$5,250. 2025.
- Determining the infectivity of fungal entomopathogens on termites and cockroaches, \$9,300. 2025.
- Termite repellency trial on treated wood, \$6,000. 2025.
- German and American cockroach bait trial, \$10,500. 2025.

Outreach Activities

- BugFest. (duplicate event, same year and location). New Orleans Mosquito, Termite, and Rodent Control Board, New Orleans, LA. October 2025.
- Pollinator Mini-Series. I organized and hosted two outreach events on supporting pollinators while also effectively managing mosquitoes, and how both are compatible when done correctly. The second event was on bat conservation and how to support them, in addition to their disease risks.
- AgMagic. 2022 to current. I led the cricket spitting competition, where I hosted, announced, and led the contestants in the competition. Louisiana State University, Baton Rouge, LA. April 2025. This activity has gotten a lot of attention over the past few years. We have lots of people coming back each year to see if they can spit a cricket farther than the year prior. Additionally, we have people continue to try and beat the current record if they did not perform well.

Awards and Honors

- Hudnall, C. National Pest Management Association, PestWorld Internship. August 2025 (\$2,000).
- Guevara-Milla, G. National Pest Management Association, PestWorld Internship. August 2025 (\$2,000).

Hudnall, C. National Pest Management Foundation Sprague Scholarship. January 2025 (\$2,000).

FACULTY ACTIVITIES

Graduated Students

- Summer 2025 - Mohamed Sadiq Shaik. Master's degree.

Publications

- Ashbrook, A., Carlton, C., Baca, S., Bayless, V. Ground truthing of iNaturalist Submissions Reveals the Presence of Asian Needle Ants, *Brachyponera chinensis* (Emery), in Louisiana. MidSouth Entomologist. August 2025.
- Guevara-Milla, G., Fannin, M., Penn, J., Ashbrook, A. A Summary of the Economic Contribution of the Pest Management Industry in Louisiana - 2024. LSU AgCenter Publications. July 2025.
- Guevara-Milla, G., Fannin, M., Penn, J., Ashbrook, A. Economic Contribution of the Pest Management Industry in Louisiana. LSU AgCenter Publications. July 2025.
- Ashbrook, A., Carlton, C., Guevara-Milla, G., Baca, S., Bayless, V. Moving Lines on the Map: The Asian Needle Ant (*Brachyponera chinensis*) Found in Southern Louisiana. LSU AgCenter Publications. June 2025.
- Hudnall, C., Ashbrook, A., Healy, K. Pest Control Operator's Guide to Managing Disease Vectoring Arthropods While Safeguarding Pollinators. LSU AgCenter Publications. May 2025.
- Hudnall, C., Ashbrook, A., Healy, K. Homeowner's Guide to Managing Disease Vectoring Arthropods While Safeguarding Pollinators. LSU AgCenter Publications. May 2025.
- King, B., Ashbrook, A., Gambino, C., Protecting Pollinators while Managing Disease Vectors. LSU AgCenter Publications. May 2025.
- King, B., Ashbrook, A., Gambino, C., Bats in Our Ecosystem. LSU AgCenter Publications. May 2025.
- Reagan, T.E., Carlton, C., Ashbrook, A. The Louisiana Bug Biz Publication Series: An Education and Information Tool. Louisiana Agriculture. September 2025.

Stephen Baca

Invited Presentations

- Baca, S.M. Little beetles, big landscapes: Neotropical phylogeography of the aquatic beetle family Noteridae. Museum of Natural Sciences Seminar series, Louisiana State University. Oct. 3, 2025. Baton Rouge, LA.

- Baca, S.M. Diving into aquatic beetle diversity and evolution with an integrative approach. SHSU Biological Seminar Series, Sam Houston State University, April 2, 2025, Huntsville, TX.

Other Presentations

- Basic Insect Identification Training and Collection Making for AgCenter Extension Agents, Spring 2025 – Spring 2026. PI. Ashbrook. Co-PI: Baca, Bayless, Carlton, Gambino
- Light Trapping with the Louisiana State Arthropod Museum. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.
- Bugs and Lasers! Public outreach and engagement event with LSU Physics & Astronomy. Department of Physics & Astronomy. Ascension Parish Library, Gonzales, LA. January 18, 2025.

Student presentations

- Bethin, J., Baca, S.M. The aquatic beetle genus *Suphisellus* (Coleoptera: Noteridae) as a system for understanding New World biogeography. Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025. (Oral)
- Norton, R., Baca, S.M. Baseline Survey of Aquatic Coleoptera in Urban Lakes Undergoing Restoration in Louisiana. Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.

New Committees (outside of Departmental)

- Subject editor. Insect Systematics and Diversity. Entomological Society of America, Oxford University Press. 2025-present.
- NSF-DEB SBS proposal review panel (2025)

Visiting Scientists/Students

- Dr. Oliver Keller, University of Michigan (mosquito and Coleoptera specialist; hosted by LSAM)
- Dr. Brian Reily, Baton Rouge (Coleoptera specialist; hosted by LSAM)

New Collaborations (University, Industry, Other)

- Collaboration with Musah Lab, LSU Department of Chemistry, PI: Dr. Rabi Musah.
- Collaborative fieldwork to secure and ID forensically significant specimens of *Silphinae* (Coleoptera: Staphylinidae) for chemotaxonomy with metabolomics.

FACULTY ACTIVITIES

- Untargeted metabolomics for chemotaxonomy of blow fly pupae (Diptera: Calliphoridae) supported by DNA barcoding.

Press highlighting collaborative work, with noted field components:

- The Advocate: Among bones and maggots, LSU researchers are building a database to help solve crimes. Woodruff, E. Nov. 1, 2025. https://www.theadvocate.com/baton_rouge/news/lsu-forensic-bug-database/article_01353cf7-bca2-5320-93e8-59ec2cafa40.html
- Reprinted in The Advocate statewide, Forensic Magazine, others.
- USA Today: Crime-solving bugs? New tech has big aspirations. Trethan, P. Oct. 29, 2025. <https://www.usatoday.com/story/news/nation/2025/10/29/bugs-to-solve-murders/86725381007/>
- LSU Stories Blog: Insects' Chemical Signatures Speak for the Dead. Jarreau, P. Oct. 28, 2025, <https://www.lsu.edu/blog/2025/10/musah-forensic-entomology.php>

Graduated students

- Fall 2025 - Rylea Norton. B.S. Plant and Soil Systems, Concentration in Urban Entomology

Publications

- Ashbrook, A.R., Bayless, V., Baca, S.M., Guevara-Milla & Carlton, C.E. (2025). Ground Truthing of iNaturalist Submissions Confirms the Presence of Asian Needle Ants, *Brachyponera chinensis* (Emery) (Hymenoptera: Formicidae), in Louisiana, A New State Record. *Midsouth Entomologist*, 18: 47-50.
- Ashbrook, A., Carlton, C. V., Guevara-Milla, G., Baca, S., Bayless, V. Moving lines on the Map: The Asian Needle Ant (*Brachyponera chinensis*) Found in Southern Louisiana. LSU AgCenter Publications, June 2025.
- Baca, S.M., Gustafson, G.T., DeRaad, D.A., Alexander, A., Hime, P., & Short, A.E.Z. (2025). A shallow-scale phylogenomic approach reveals repeated patterns of diversification among sympatric lineages of cryptic Neotropical aquatic beetles (Coleoptera: Noteridae). *Systematic Entomology*, 1–20. Available from <https://doi.org/10.1111/syen.12643>

Extension publications

- Wilson, B.E., Villegas, J.E., Musgrove, T.R.T., Baca, S.M. (2025) Rice Delphacid Detected in Louisiana for the First Time in >70 years. LSU AgCenter Blogs:

Sept. 12, 2025. <https://www.lsuagcenter.com/articles/page1757699770343>

- Service report: Healy, K., Carlton, C., Baca, S.B. (2025). Forensic Entomology* Case Report. Louisiana State Police Crime Lab Case Number: SP-6791-25.

Morgan Christman

Invited Presentations

- Christman, M. 2025. Habitat restoration for pollinator communities. Jean Lafitte Habitat Restoration Project. 22 November. Oral presentations. Audience: 31 Master Gardeners and Master Foresters.
- Christman, M., J. Strange, and J. Koch. 2025. Investigating imperiled bumble bee species distributions and habitat associations. Entomological Society of America National Conference Contemporary Strategies for Studying Pollinator Conservation and Distribution in a Changing World Symposium. 11 November. Oral presentation. Audience: 60 entomologists.
- Christman, M. 2025. Quantifying pollinator interactions with odds ratios in R. Entomological Society of America National Conference Experimental Design and Analysis Workshop. 7 November. Audience: 15 entomologists.
- Christman, M. 2025. Seasonal honey bee foraging and contaminant exposure in Louisiana. Louisiana Beekeeper Association Field Day. 18 October. Oral presentation. Audience: 78 beekeepers.
- Christman, M. 2025. Pollinator ecology. Native Plant and Pollinator Field Day. 14 June. Oral presentation. Audience: 60 people from the general public.
- Christman, M. 2025. The buzz about bees: exploring health through foes and flowers. LSU AgCenter Pollinator Garden Workshop. 3 May. Oral presentation. Audience: 17 people from the general public.
- Christman, M., L. Sakulich, K. Perry, J. Strange, and C. Gratton. 2025. Invasion in the land of fire and ice: the impact of non-native plant-pollinator interactions on native bumble bees in Icelandic Highlands. Math and Ecological Synthesis Network. Lubbock, TX. 29 February. Poster presentation.

Other Presentations

- Christman, M. 2025. Seasonal honey bee foraging and contaminant exposure in Louisiana Agroecosystems. 9 September. Oral presentation. Audience: 50 beekeepers from the Capital Area Beekeepers Association

FACULTY ACTIVITIES

New Grants & Contracts

- USDA-NIFA. 2025. Investigating imperiled bumble bee species distributions and habitat associations. \$111,422.75 transfer from USDA-ARS to LSU.
- New Collaborations (University, Industry, Other): Nicholls State University, USDA-ARS Honey Bee Lab, Capital Area Beekeepers Association, Barataria-Terrebonne National Estuary, Louisiana Beekeepers Association

Jeff Davis

Presentations

- Bruno, J., J. Villegas, M. Stout, J. A. Davis, B. Tubana, S. Ranabhat, D. Barbosa, and E. O'Neal. 2025. Strengthening the plant, fighting the insect pests: does silicon soil amendments improve soybean resistance. 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17, 2025.
- Bruno, J., J. Villegas, M. Stout, J. A. Davis, B. Tubana, S. Ranabhat, L. Lopez, and E. O'Neal. 2025. Investigating the impact of soil-applied silicon on insect pests in soybean. Annual Meeting of the Entomological Society of America, Portland, OR. November 10, 2025.
- Davis, J. A. 2025. IPM strategies to reduce clean seed reinfection. 2025 LSU AgCenter Sweet Potato Research Station Grower Field Tour, Chase, LA. August 13, 2025. (Invited).
- Davis, J. A. 2025. Sustainable management strategies for stink bugs in midsouth soybeans. Symposium: A Multi-State Update on Stink Bug Invasions and Addressing the Growing Threat to Southeastern Agriculture. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 11, 2025. (Invited).
- Davis, J. A., C. M. Gonzalez, P. Munagala, C. E. Astete, and C. M. Sabliov. 2025. Nano-formulated deterrents for plant virus vector control. Annual Meeting of the Entomological Society of America, Portland, OR. November 11, 2025. (Invited).
- Davis, J. A., J. Villegas, and D. Kerns. 2025. Stink bug control in soybean in the absence of acephate. Louisiana Agricultural Technology & Management Conference, Marksville, LA. February 13, 2025. (Invited).
- Davis, J. A., R. Pablo, B. Romero, J. C. D. Gregorie, and I. Power. 2025. Protecting your clean seed with crop borders. 89th Annual Meeting of the Louisiana Sweet Potato Association, Winnsboro, LA. December 4, 2025. (Invited).
- Duwal, A. and Davis, J. A. 2025. *Podisus maculiventris* (Say) pest age-specific predator preference. Annual Meeting of the Entomological Society of America, Portland, OR. November 10, 2025.
- Duwal, A., and Davis, J. A. 2025. *Podisus maculiventris* (Say) pest age-specific predator preference. 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17, 2025..
- Duwal, A., and J. A. Davis. 2025. Feeding preferences of *Podisus maculiventris* (Say) predation on eggs of three stink bug species. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 10, 2025.
- Grijalva, I., S. Upadhyaya, and J. A. Davis. 2025. Automated detection of redbanded stink bugs in soybean using computer vision algorithms. AI in Agriculture, Raleigh, NC. December 2025.
- Grijalva, I., S. Upadhyaya, J. A. Davis, and B. McCornack. 2025. Machine learning vision for crop insect monitoring. Larry Larson Symposium: Responsible Crop Protection, a Journey of Innovation from Past to Future. Annual Meeting of the Entomological Society of America, Portland, OR. November 11, 2025. (Invited)
- Kerns, D., J. M. Villegas, J. A. Davis, and T. Towles. 2025. Threat of redbanded stink bug and other stink bug pests to Louisiana row crops. Symposium: A Multi-State Update on Stink Bug Invasions and Addressing the Growing Threat to Southeastern Agriculture. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 11, 2025. (Invited).
- Martinez, C., and J. A. Davis. 2025. Susceptibility of current commercial soybean cultivars to red banded stink bug (*Piezodorus guildinii*). 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 10, 2025.
- Mejia-Gonzalez, C., Astete, C., Sabliov, C., J. A. Davis. 2025. Can nano-delivered azadirachtin deter *Myzus persicae*? 2025. 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17th, 2025.
- Mejia-Gonzalez, C., C. Astete, C. Sabliov, and J. A. Davis. 2025. Can nano-delivered azadirachtin repel and deter *Myzus persicae*? 97th Annual Meeting of the

FACULTY ACTIVITIES

Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 10, 2025.

- Munagala, P. K., C. E. Astete, C. M. Sabliov, and J. A. Davis. 2025. Evaluating the impacts of lignin grafted PLGA copper sulfide nanoparticles (CuS LNPs) on plant defenses. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 10, 2025.
- Munagala, P. K., C. E. Astete, C. M. Sabliov, and J. A. Davis. 2025. Impact of biodegradable nanoparticles on sorghum and sugarcane aphid. 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17th, 2025.
- Pablo, R., B. Romero, and J. A. Davis. 2025. Integrated pest management of potyviruses: evaluating the effects of border crops and alternative controls in sweetpotato fields. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 10, 2025.
- Pablo, R., B. Romero, and J. A. Davis. 2025. Integrated pest management of potyviruses: evaluating the effects of border crops and alternative controls in sweetpotato fields. 49th Annual Meeting of the National Sweetpotato Collaborators Group, Irving, TX. January 31, 2025.
- Pablo, R., F. O'Hara, D. Swale, and J. A. Davis. 2025. Targeting the vector: evaluating chemistries to reduce potato virus Y (PVY) transmission. M.S. Student Oral Competition, 15th Annual Graduate Student Symposium, LSU Department of Entomology. Baton Rouge, LA. October 17, 2025.
- Patla, B., T. Silva, S. Lin, G. P. Head, F. P. F. Reay-Jones, X. Ni, L. Bernaola, S. Brown, D. Cook, J. Villegas, J. A. Davis, and F. Huang. 2025. Evaluating the susceptibility of *Helicoverpa zea* populations in the southeastern United States to eight common insecticides. 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17, 2025. (poster).
- Patla, B., T. Silva, S. Lin, J. A. Davis, G. Head, X. Ni, D. Cook, F. Reay-Jones, S. Brown, L. Bernaola, and F. Huang. 2025. Susceptibility of *Helicoverpa zea* populations in the southeastern United States to eight common insecticides. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 11, 2025. (poster).
- Romero, B., and J. A. Davis. 2025. Effects of kaolin clay on the probing behavior of *Aphis gossypii* Glover

(Hemiptera: Aphididae). 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 11, 2025.

- Saha, S., J. A. Davis, and H. Feng. 2025. Evaluating the insecticidal effects of plant soybean-derived miRNAs in the stink bug, *Nezara viridula*. 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17, 2025. (poster).
- Sibakwe, C. B., and J. A. Davis. 2025. Oviposition behavior of stink bug species on advanced soybean breeding selections. 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17, 2025.
- Sibakwe, C. B., and J. A. Davis. 2025. Population dynamics and reproductive success of the redbanded stink bug (*Piezodorus guildinii*) on six soybean breeding lines. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 10, 2025.
- Upadhyaya, S., J. A. Davis, K. Hoffseth, and I. Grijalva. 2025. Computer vision-based detection of redbanded stink bugs (*Piezodorus guildinii*) and associated damage in soybean seeds. 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17, 2025. (poster).

Awards

- Davis, J. A. LSU College of Agriculture Sedberry Award for Outstanding Graduate Teacher. December 15, 2025.
- Duwal, A. FY 2025-2026 Graduate Student Association Travel Award.
- Duwal, A., 1st Place, Ph.D. Student Oral Competition, 15th Annual Louisiana State University Department of Entomology Graduate Symposium, Baton Rouge, LA. October 17, 2025.
- Mejia-Gonzalez, C., 1st Place Master's Student Presentation Competition, 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 10, 2025.
- Mejia-Gonzalez, C., 2nd Place, M.S. Student Oral Competition, 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17th, 2025.

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- Munagala, P. K., 2nd Place, Master's Student Presentation Competition, 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 10, 2025.
- Pablo, R., 2nd Place, Master's Student Presentation Competition, 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 10, 2025.
- Pablo, R., 1st Place, M.S. Student Oral Competition, 15th Annual Graduate Student Symposium, LSU Department of Entomology. Baton Rouge, Louisiana. October 17, 2025.

Graduated Students

- Summer 2025 - Cristofer Martinez. Master's degree.

Retirements

- M. Jeff Murray, research associate, June 30, 2025.

Grants

- Louisiana Soybean and Grain Research and Promotion Board. "New Tools and Tactics for Soybean IPM." 2025-2026. J. A. Davis. \$75,000.
- Louisiana Soybean and Grain Research and Promotion Board. "Lignin-Based Nanoparticles to Protect Photolabile Pesticides for Soybean Treatment." 2025-2026. C. M. Sabliov (Lead PI), C. E. Astete, P. P. Price, V. Doyle, and J. A. Davis. \$30,000.
- Louisiana Soybean and Grain Research and Promotion Board. "Artificial Intelligence for Stink Bug Detection in Precision Pest Management." 2025-2026. I. Grijalva and J. A. Davis. \$39,624.
- United Soybean Board. "Developing a Resilient Soybean IPM Program for Stink Bugs." 2025-2026. J. A. Davis (Lead-PI) and F. Lin. \$97,780
- USDA AFRI EIP Program. "IPM Extension Implementation for Louisiana." 2025-2026. R. Singh (Lead PI), J. Villegas, T. Watson, A. Ashbrook, C. Webster, and J. A. Davis. \$281,116.
- USDA AFRI Competitive Grants Foundation Program. "Impact of Temperature and Endosymbionts on Stink Bug Populations in Soybean." 2025-2028. K. Tilmon (Lead PI) and J. A. Davis. \$392,000.

Publications

- Ali, M. P., J. E. Matsushima, N. Akhtar, A. I. V. Maia, F. Donnarumma, V. García-López, S. Navarro, Z. Liu, J. A. Davis, and M. J. Stout. 2025. Systemic accumulation and deterrent effects of ipomeamarone

in sweetpotato weevil-injured storage roots. *ACS Agric. Sci. Technol.* 5(12): 2439-2446. <https://doi.org/10.1021/acscagritech.5c00455>.

- Leede, A. E., and J. A. Davis. 2025. Life table analyses and feeding behaviors of cannabis aphid, cotton aphid, and green peach aphid (Hemiptera: Aphididae) on industrial hemp. *J. Econ. Entomol.* 118 (2): 707–712. <https://doi.org/10.1093/jee/toaf004>.
- Martinez, C. M., and J. A. Davis. 2025. Age-stage, two-sex life table, supercooling points, and phenology of *Euschistus quadrator* (Hemiptera: Pentatomidae) on soybean. *J. Econ. Entomol.* 119 (1): 254-262. <https://doi.org/10.1093/jee/toaf318>.
- Musser, F. R., S. A. Brown, T. Bryant, W. D. Crow, J. A. Davis, C. DiFonzo, C. Floyd, S. H. Graham J. K. Greene, K. A. Hamby, D. Kerns, J. Knodel, D. Owens, D. D. Reisig, P. M. Roberts, N. J. Seiter, A. J. Sisson, B. C. Thrash, K. J. Tilmon, and R. T. Villanueva. 2025. 2024 soybean insect losses in the United States. *Midsouth Entomol.* 18: 10-35. <https://www.midsouthentomologist.org.msstate.edu/>.
- Musser, F., S. A. Brown, T. Bryant, W. D. Crow, J. A. Davis, C. DiFonzo, C. Floyd, S. H. Graham J. K. Greene, K. A. Hamby, D. Kerns, J. Knodel, D. Owens, D. D. Reisig, P. M. Roberts, N. J. Seiter, A. J. Sisson, B. C. Thrash, K. J. Tilmon, and R. T. Villanueva. 2025. Soybean Invertebrate Loss Estimates from the United States – 2024. *Crop Protection Network*. CPN 1029-24. <https://cropprotectionnetwork.org/publications/soybean-invertebrate-loss-estimates-from-the-united-states-2024>.
- O'Hara, F. M., S. E. McComic, Z. Liu, A. Cremades, J. A. Davis, E. J. Norris, J. R. Bloomquist, and D. R. Swale. 2025. Characterization of N-aryl amide insecticides to control populations of the green peach aphid, *Myzus persicae*. *Pestic. Biochem. Physiol.* 212: 106459. <https://doi.org/10.1016/j.pestbp.2025.106459>.
- Pablo, R., B. Romero, and J. A. Davis. 2025. Integrated pest management of potyviruses: evaluating the effects of border crops and alternative controls in sweetpotato fields. *HortScience* 60 (2S). <https://doi.org/10.21273/HORTSCI.60.2S.S1>.
- Patla, B., T. Silva, S. Lin, G. P. Head, J. A. Davis, G. A. Sword, A. Miller, F. P. Reay-Jones, X. Ni, J. A. Qureshi, D. Carrillo, J. Villegas, D. R. Cook, C. Daves, B. Thrash, S. V. Paula-Moraes, and F. Huang. 2025. Areawide susceptibility of *Spodoptera frugiperda* to four common chemical insecticides in the southern

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U.S. Pest Manag. Sci. 82 (3): 2501-2512. <https://doi.org/10.1002/ps.70385>.

- Ulhoa, L. A., A. L. B. Júnior, J. A. Davis, and M. J. Stout. 2025. Influence of *arbuscular mycorrhizal* fungi and silicon on soybean growth and development in the field. J. Sustain. Agric. Environ. 4 (4): e70120. <https://doi.org/10.1002/sae2.70120>.

Extension Publications

- Davis, J. A., R. Pablo, and I. Power. 2025. Aphids, ever present vectors of sweetpotato viruses: a CleanSEED update. 2025 Summer Issue of our LSU AgCenter Sweet Potato Newsletter Vol. 20, No. 1.

Media/Press Release

- Grijalva, I., J. A. Davis, and K. Hoffseth. Artificial intelligence may be new tool in battle against pests. The Louisiana Soybean & Grain Research & Promotion Board. Article by Kylie Peveto. <https://www.lsuagcenter.com/articles/page1756391804829>. Sept. 15, 2025.
- Grijalva, I., M. J. Stout, and J. A. Davis. Is AI the key to simplified scouting and spraying? Delta FarmPress. Article by Raney Rapp. <https://www.farmprogress.com/crops/is-ai-the-key-to-simplified-scouting-and-spraying->. June 6, 2025.

Symposia Organized

- “Conservation Biological Control Through Habitat Management: Bridging Challenges and Innovations.” Organizers: Pragma Kiju, Anjana Duwal, and Kushal Naharki. PI-E Section Symposium of the Annual Meeting of the Entomological Society of America, Portland, OR, November 12, 2025.
- “Passionate About Pathogens: Bridging the Divide Between Mammal and Plant Disease Vectors.” Organizers: Berenice Romero, and Jeffrey A. Davis. PI-E and MUVE Member Symposium of the Annual Meeting of the Entomological Society of America, Portland, OR, November 11, 2025.
- “Conversations Between Entomologists and Plant Pathologists: Joining Forces to Control Pathogens.” Organizers: Berenice Romero, and Jeffrey A. Davis. PI-E Section Symposium of the Annual Meeting of the Entomological Society of America, Portland, OR, November 12, 2025.

Rodrigo Diaz

Presentations

- Ecology and spread of the Roseau cane scale in United States. Rodrigo Diaz, Ethan Doherty, Tanner Sparks, Leslie Aviles, Joshua Snook, Logan Herbert. Sixth Annual Roseau Cane Summit, Baton Rouge, Louisiana. January 8, 2025.
- Impact of *Phragmites australis* genetic diversity on coastal restoration in the Mississippi River Delta. Karina Nolasco, Josh Snook, Jonathan Richards, Rodrigo Diaz. Sixth Annual Roseau Cane Summit, Baton Rouge, Louisiana. January 8, 2025.
- Long-Term Monitoring of *Phragmites* Performance and Scale Insect Dynamics in the Mississippi River Delta. Logan Herbert, Joshua Snook, Karina Nolasco, Tanner Sparks, Rodrigo Diaz. Sixth Annual Roseau Cane Summit. Baton Rouge, Louisiana. January 8, 2025.
- Management of giant salvinia using biological control. Rodrigo Diaz. New Orleans Urban Pest Management Symposium. New Orleans, Louisiana. January 28, 2025.
- Integrating Remote Sensing and Biocontrol for Management of Giant Salvinia (*Salvinia molesta*) in Urban Wetlands. Victoria Ayala, Logan Herbert, Dane Shackelford, Rodrigo Diaz. Urban Pest Management Symposium. New Orleans, Louisiana. January 28, 2025.
- *Megamelus scutellaris*: A New Biological Control Agent for Early Season Management of Water Hyacinth in Louisiana. Amori Bieller, Rodrigo Diaz. New Orleans Urban Pest Management Symposium. New Orleans, Louisiana. January 28, 2025.
- Opportunities for improving biological control of aquatic weeds. Rodrigo Diaz, Dane Shackelford, Victoria Ayala, Amori Bieller, David Kinsler, Flaminia Mariani, Alex Gaffke, Ivan Grijalva, Mollie Davies, Nick DiLisi, Kevin Caillouet. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.
- Harnessing *Phragmites australis* genetic diversity to promote coastal restoration. Karina Nolasco, Jim Cronin, Jonathan Richards, Rodrigo Diaz, Blake Wilson. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.
- Latest research and new opportunities for biological control of giant salvinia. Logan Herbert, Victoria Ayala,

FACULTY ACTIVITIES

Aristide Takoukam Kamala, David Kinsler, Rodrigo Diaz. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.

- Herbivore Community on Invasive Chinese Privet in Forests of Baton Rouge, LA. Brandi Misiaszek, Victoria Bayless, Steven Baca, Amy Roda, Rodrigo Diaz. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.
- How real-time satellite monitoring can enhance the biological control of giant salvinia (*Salvinia molesta*) in Louisiana? Victoria Ayala, David Kinsler, Ivan Grijalva, Rodrigo Diaz. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.
- Augment or Die: How to optimize biological control of tropical weeds in subtropical and temperate regions. Rodrigo Diaz. University of Manitoba, Winnipeg, Canada. March 18, 2025.
- Biological control of tropical and subtropical aquatic weeds. Rodrigo Diaz. Guest Lecture. Nicholls State University, Thibodaux, Louisiana. March 26, 2025.
- Natural enemies of the invasive duckweed *Lemna minuta*: host specificity, impact, and potential for biological control in Europe. Flaminia Mariani, Paul Pratt, Rodrigo Diaz. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.
- Leveraging augmentation biological control for aquatic weed management. Rodrigo Diaz, Dane Shackelford, Victoria Ayala, Amori Bieller, David Kinsler, Flaminia Mariani, Alex Gaffke, Ivan Grijalva. Annapolis, Maryland. April 15, 2025.
- Real-time satellite monitoring for early detection of giant salvinia (*Salvinia molesta*) and optimization of biocontrol with the salvinia weevil. Victoria Ayala, David Kinsler, Ivan Grijalva, Rodrigo Diaz. 2025 National Forum on Biological Control Conference (Scholarship recipient). Annapolis, Maryland. April 16, 2025.
- Host Range of *Ligustrum* weevil, a potential biocontrol agent for invasive privet. Brandi Misiaszek, Amy Roda, Rodrigo Diaz. National Forum for Biological Control. Annapolis, Maryland. April 16, 2025.
- Abiotic and biotic factors influencing *Niphograptia alboguttalis* establishment in the southeastern U.S.: implications for water hyacinth biocontrol. Flaminia

Mariani, Paul Pratt, Rodrigo Diaz. National Forum on Biological Control. Annapolis, Maryland. April 2025.

- Intervene or Die: Use of New Strategies for the Management of *Salvinia molesta* in Subtropical Wetlands. Rodrigo Diaz, Dane Shackelford, Victoria Ayala, David Kinsler, Alex Gaffke, Ivan Grijalva. XI Congreso Argentino de Limnología. Corrientes, Argentina. July 29, 2025.
- How can a tiny weevil help with the management of giant salvinia? Victoria Ayala, Dane Shackelford, Rodrigo Diaz. Managing Invasive Species & Wildlife Impacts in Agriculture. Harrisonburg, Louisiana. August 14, 2025.
- How can a tiny weevil help with the management of giant salvinia? Victoria Ayala, Dane Shackelford, and Rodrigo Diaz. Managing Invasive Species & Wildlife Impacts in Agriculture. First Baptist Church in Harrisonburg, Louisiana. August 14, 2025.
- Augmentation biological control as a tool to improve aquatic plant management. Rodrigo Diaz. Guest Lecture. Kyungpook National University, Sangju. South Korea. September 4, 2025.
- Restoring the Equilibrium. Biological Control of Aquatic Weeds. Rodrigo Diaz. Virtual meeting with Ministry of Environment from El Salvador. Online meeting. September 9, 2025.
- From Marsh to Mission: Why the Bird's Foot Delta Needs You. Rodrigo Diaz, Karina Nolasco. Talk at Saturday Science, EBR Main Library. Baton Rouge, Louisiana. October 4, 2025.
- Integrating Remote Sensing and Augmentative Biological Control of *Megamelus scutellaris* for Water Hyacinth Management. Nahomi Lopez, Flaminia Mariani, Amori Bieller, Ivan Grijalva, Rodrigo Diaz. 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17, 2025.
- Linking *Phragmites australis* genetic diversity to restoration performance in the Mississippi River Delta. Karina Nolasco. 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17, 2025.
- Population dynamics of *Ochyromera ligustri*, a potential fortuitous biocontrol agent of Chinese privet in United States. Brandi Misiaszek, Amy Roda, Rodrigo Diaz. 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17, 2025.

FACULTY ACTIVITIES

- An Integrated Program for the management of invasive species in Cerron Grande reservoir: Green filters, the power of microphyte plants. Karina Nolasco. Ministry of Environment, San Salvador, El Salvador. October 23, 2025.
 - An Integrated Program for the management of invasive species in Cerron Grande reservoir. Rodrigo Diaz. Ministry of Environment, San Salvador, El Salvador. October 23, 2025.
 - Restoring aquatic ecosystems: biological control as a sustainable management strategy. Biological control and aquatic weed management Workshop – Lake Suchitlán, El Salvador. Nahomi Lopez, San Salvador, El Salvador. October 23, 2025.
 - Use of Geographic Information Systems (GIS) for early detection of algae and aquatic weeds. Victoria Ayala & David Kinsler. Workshop on Aquatic Weed Management to stakeholders at the Ministry of Environment and Natural Resources of El Salvador. San Salvador, El Salvador. October 23, 2025.
 - Invasive species threaten Louisiana's agriculture and natural resources. Rodrigo Diaz. Invasive Species Summit, LSU AgCenter, Alexandria, Louisiana. November 3, 2025.
 - Show Me Your Post: Spreading the Biocontrol Buzz Through Social Media. Rodrigo Diaz, Veronica Manrique, Maggie Keller. Biological Control Summit. North American Invasive Species Management Association, Online Meeting. November 4, 2025.
 - Enhancing Giant Salvinia (*Salvinia molesta*) biocontrol with real-time monitoring using Google Earth Engine. Victoria Ayala, David Kinsler, Ivan Grijalva, Rodrigo Diaz. Annual Meeting of the Entomological Society of America, Portland, OR. November 10, 2025.
 - Drivers of *Niphograpta albiguttalis* establishment in the southeastern U.S.: Insights for water hyacinth biocontrol. Flaminia Mariani, Paul Pratt, Rodrigo Diaz. Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.
 - Population dynamics and ecological drivers of the naturalized weevil *Ochyromera ligustri*: A potential biological control agent of invasive *Ligustrum sinense*. Brandi Misiaszek, Amy Roda, Rodrigo Diaz. Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.
 - Restoring aquatic ecosystems through biological control and GIS: early detection and sustainable management of aquatic weeds. Nahomi Lopez, Victoria Ayala. V Scientific Conference on Ecology and Paleontology and VII Workshop of the Physical Geography Group (CECOAL, CONICET – UNNE). Online. December 2, 2025.
 - Restoring aquatic ecosystems through biological control and GIS: early detection and sustainable management of aquatic weeds. Victoria Ayala & Nahomi Lopez. V Scientific Conference on Ecology and Paleontology and VII Workshop of the Physical Geography Group (CECOAL, CONICET–UNNE). Argentina (Online attendance). December 3, 2025.
 - Invasive Pests – A Growing Threat to Louisiana Agriculture and Natural Resources. Rodrigo Diaz. Louisiana Land-Grant Agriculture Summit, Baton Rouge. December 16, 2025.
 - Integrating Google Earth Engine for near-real-time monitoring of giant salvinia (*Salvinia molesta*) in wetlands. Victoria Ayala, Nahomi Lopez, David Kinsler, Ivan Grijalva, Rodrigo Diaz. Advance Earth and Space Science Annual Meeting. New Orleans, Louisiana. December 17, 2025.
- ### Awards & Honors
- 2025 LSU AgCenter G. & H. Seed Research Excellence Award. Rodrigo Diaz.
- ### New Committees
- Diaz is leading the development of the Mississippi River Invasive Species Consortium among Arkansas, Mississippi and Louisiana.
- ### New Grants & Contracts
- Grijalva I., & Diaz, R. Enhanced water hyacinth management through remote sensing and augmented biological control. Barataria-Terrebonne National Estuary Program. Funding: \$144,886.
- ### Visiting Scientists
- Diego Gallegos, Visiting Scholar. Water hyacinth team.
 - Nahomi Lopez, Visiting Scholar. Roseau cane team.
- ### New Collaborations
- Ministry of Environment and Natural Resources, El Salvador. Management of water lettuce in Lake Suchitlán.
 - New Orleans Mosquito, Termite & Rodent Control Board; and Sewerage & Water Board New Orleans. Development of Sustainable Aquatic Weed Management Program for New Orleans East.

FACULTY ACTIVITIES

- Zamorano University, Honduras. Implementation of biological control of water hyacinth in Honduras.

Publications

- Glassmire, A. E., Cronin, J. T., Diaz, R., DeSoto, A., Shapiro, E., Gaffke, A., Snook, J.S., Stout, M. 2026. Plant chemistry and enemy pressure shape within-stem distribution of the invasive scale *Nipponaclerda biwakoensis*. *Insects*, 17, 9. <https://doi.org/10.3390/insects17010009>
- Sparks, V., Kang, I., Carrere, M., Broadley, H., and Diaz, R. 2025. Differential oviposition timing of parasitoids of the invasive roseau cane scale (*Nipponaclerda biwakoensis*) as revealed by multiplex PCR assays. *Journal of Hymenoptera Research* 98: 1133-1152. <https://doi.org/10.3897/jhr.98.150721>
- Johnston, J., DeVries, A. E., Diaz, R., Doyle, V. P., Elsey-Quirk, T., Cronin, J. T. 2025 Competition and soil microbe-mediated interactions following dieback of a dominant wetland plant. *Ecosphere*, 16:10. <https://doi.org/10.1002/ecs2.70427>
- Pruett, K. N., Knight, I. A., Kang, I., Sparks, V. L. and R. Diaz. 2025. Species-specific PCR primers provide insights into spatial distributions and interspecific interactions of Roseau cane scale parasitoids in Louisiana. *Biocontrol Science and Technology*. <https://www.tandfonline.com/doi/full/10.1080/09583157.2025.2563728>
- Humair, L. F., Pessina, A., Rasmann, S., Diaz, R., Ngxande-Koza, S., Hill, M., and P.S.R. Weyl. 2025. Host selection of *Lysathia cilliersae* across increasing experimental complexity and ecological realism. *CABI Agriculture and Bioscience*. 6:1 0063. <https://doi.org/10.1079/ab.2025.0063>
- Brown, J.V., Kelso, W.E., Diaz, R., Wesley, D., Haley, B. and M. D. Kaller. 2025. Invasive species in the aquarium trade: survey of attitudes, behaviors, and knowledge among US participants. *Hydrobiologia* <https://doi.org/10.1007/s10750-025-05930-1>
- Woodley, S.E., Wahl, C. and R. Diaz. 2025. Performance of *Salvinia molesta* (Salvinia: Salviniaceae) and its biological control agent *Cyrtobagous salviniae* (Coleoptera: Curculionidae) in freshwater and saline environments. *Florida Entomologist* 108, 20250005. <https://doi.org/10.1515/flaent-2025-0005>
- Gaffke, A. M., Li, D., Manrique, V., Abbate, A. P., Wheeler, G. S., and R. Diaz. 2025. Tallow tree biological control and beekeeping: Assessing the misconceptions and possible resolutions to protect native ecosystems.

Biological Control 202. <https://doi.org/10.1016/j.biocontrol.2025.105720>

- Glassmire, A.E.; Salgado, A.L.; Diaz, R.; Johnston, J.; Meyerson, L.A.; Snook, J.S.; and Cronin, J.T. 2025. The Effects of anthropogenic stressors on above- and below ground phytochemical diversity of the wetland grass, *Phragmites australis*. *Plants* 13, 3133. <https://doi.org/10.3390/plants13223133>

Honglin Feng

Invited Presentations

- Feng H., MicroRNAs in plant-insect-microbe interactions, Department of Plant Pathology & Crop Physiology, October 8, 2025

Other Presentations

- Feng H., Targeting plant-aphid-microbe interactions for aphid control. Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.

Posters

- Tiago Silva, Honglin Feng, Fangneng Huang, Laboratory selection of Bt-resistant fall armyworm (*Spodoptera frugiperda*): Investigating epigenetic mechanisms and their role in resistance development and management. Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.
- Srabani Saha and Honglin Feng, Functional Characterization of Acetyl-CoA Carboxylase in Physiology and Development of the Green Peach Aphid, *Myzus persicae*. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.
- Srabani Saha, Jeffrey A. Davis, and Honglin Feng, Evaluating the insecticidal effects of soybean-derived microRNAs in the Southern green stink bug, *Nezara viridula*. 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17, 2025.
- Yaping Ding and Honglin Feng, Cross-kingdom translocation of aphid miRNAs into endosymbiont *Buchnera*. 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17, 2025.

FACULTY ACTIVITIES

- Yaping Ding, Leighton Flanagan, and Honglin Feng, Functional Analysis of the Ultrabithorax Gene in *Myzus persicae* through Plant-mediated Virus Induced Gene Silencing. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.
- Norton A.J.*, Powell A.F., Feng H., Wang F., Jander G., Assessment of candidate genes for the incorporation of cysteine into *Asclepias* cardiac glycosides. The Annual Plant Biology Meeting, Milwaukee, WI, 2025 (*REU student)

New Grants & Contracts

- 2025-2026: Maximum-stacking RNA interference for full control of insect pests. LSU AgCenter, Center of Research Excellence in Plant Biotechnology and Crop Development (COE), 2026, \$30,000, Role: PI

New Collaborations

- Zhi-Yuan Chen, Department of Plant Pathology and Crop Physiology, LSU AgCenter
- Anastasios Vourekas, Department of Biological Sciences, Louisiana State University
- Kristin Stair, Department of Agricultural and Extension Education and Evaluation Department, LSU AgCenter

Publications

- Abdukerim R., Li X., Cao Y., Zhang S., Yin J., Feng H. *, and Li K. *, Evaluation of binary semiochemical formulations for attracting *Holotrichia parallela* (Coleoptera: Scarabaeidae), Pest Management Science, Under Review.
- Diaz AAG, Wang F., and Feng H. *, Aphid management: current strategies and future perspectives. Agriculture, Under Review. Osman I., Wang Z., Li E., Feng H., Yin J., Liang G., Liu Z., Ning D., Li K., Xie Y., Host egg preference and density-dependent parasitism of *Telenomus remus* in *Spodoptera litura* and *Spodoptera frugiperda* eggs, Neotropical Entomology, 54(1), 1-10
- Osman I., Wang Z., Li H., Li E., Feng H., Yin J., Liang G., Liu Z., Ning D., Li K., Xie Y., Attraction of *Telenomus remus* to egg volatiles of *Spodoptera litura* and oviposition-induced plant volatiles from tobacco (*Nicotiana tabacum*), Ecology and Evolution, 15(9), e72012
- Feng H., Zhang J., Powell A.F., Buttelmann G.L., Yang L., Yan E., Wang F., Broyles S.B, Jander G., Genome and tissue-specific transcriptome of the tropical

milkweed (*Asclepias curassavica*), Plant Direct, 9(3), e70031.

Ivan Grijalva

Invited Presentations

- Grijalva, I. Applying computer vision for site-specific management in Louisiana agroecosystems. Louisiana Land-Grant Agriculture Summit. Baton Rouge, LA, U.S. Dec. 2025.
- Grijalva, I. Applying computer vision for site-specific management in Louisiana agroecosystems. Louisiana Mosquito Control Association. Baton Rouge, LA, U.S. – Invited presentation. Nov. 2025.
- Grijalva, I. Machine learning vision for insect monitoring and site-specific management. Cornell University. Remotely. Nov. 2025.
- Grijalva, I. Applying computer vision for site-specific management in Louisiana agroecosystems. American Society of Agricultural and Biological Engineers (ASABE). Alexandria, LA, U.S. Nov. 2025.
- Grijalva, I., Upadhyaya S., Davis, J. A., & McCornack, B. Machine learning vision for crop insect monitoring. Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.
- Grijalva, I. Machine learning vision for crop insect monitoring. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.
- Grijalva I., Gentimis, T. Introduction to cloud-based tools for labeling and training object detection models. 2025 AI in Agriculture and Natural Resources Conference, Mississippi State University. Starkville, MS, U.S. March 2025
- Grijalva, I. Machine learning for crop insect monitoring. Louisiana Agricultural Consultants Association (LACA). Marksville, LA, U.S. Feb. 2025.

Other Presentations

- Victoria, A., Kinsler, D., Grijalva, I., & Diaz, R. Integrating Google Earth Engine for near-real-time monitoring of giant salvinia (*Salvinia molesta*) in wetlands. American Geophysical Union, Annual Meeting. New Orleans, LA, U.S. – Research poster. Dec. 2025.
- Grijalva, I. Applying computer vision for site-specific management in Louisiana agroecosystems. Precision Agricultural Summit. Alexandria, LA, U.S. Dec. 2025.

FACULTY ACTIVITIES

- Choton, J., Margapuri, V., Grijalva, I., Spiesman, B., & Hsu, W. Self-supervised component segmentation to improve object detection and classification for bumblebee identification. AI Symposium, Kansas State University. Manhattan, KS, U.S. – Research poster. Nov. 2025
- Broussard, J., Diaz R., & Grijalva, I. Automating count of roseau cane scale using computer vision. Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.
- Ayala, V., Kinsler, D., Grijalva, I., & Diaz, R. Enhancing giant salvinia (*Salvinia molesta*) biocontrol with real-time monitoring using google earth engine. Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.
- Ranabhat, S., Gentimis, T., Grijalva, I., Kerns, D., & Villegas, J. Forecasting population of corn earworm (*Helicoverpa zea*) using classical and machine learning-based time series models. Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.
- Ranabhat, S., Grijalva, I., Gentimis, T., Kerns, D., & Villegas, J. Forecasting population of corn earworm (*Helicoverpa zea*) using machine learning models. Purdue Symposium of Digital Agriculture – Research poster. Oct. 2025.
- Upadhyaya, S., Davis, J. A., Hoffseth, K., & Grijalva, I. Computer vision-based detection of red banded stink bugs (*Piezodorus guildinii*) and associated damage in soybean seeds. 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17, 2025.
- Mohammed, U., Prashant, J., & Grijalva, I. Multispectral Imaging for detection of palmer amaranth (*Amaranthus palmeri*) in soybean. 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17, 2025.
- Broussard, J., Diaz, R., & Grijalva, I. Automatic Counting of Roseau cane scale (*Nipponaclerda biwakoensis*) using computer Vision. 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17, 2025.
- Victoria, A., Shackelford, D., Kinsler, D., Grijalva, I., & Diaz, R. Enhancing giant salvinia (*Salvinia molesta*) biocontrol with real-time monitoring using Google Earth Engine and drone imagery. 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17, 2025.
- Lopez, N., Mariani, F., Bieller, A., Grijalva, I., & Diaz, R. Integrating remote sensing and augmentative biological control of *Megamelus scutellaris* for water hyacinth management. 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17, 2025.
- Grijalva, I., Davis, J. A., & Hoffseth. Artificial intelligence may be new tool in battle against pests. The Louisiana Soybean & Grain Research & Promotion Board. Article by Kylie Peveto. <https://www.lsuagcenter.com/articles/page1756391804829>. – Press release. Sept 15, 2025
- Grijalva, I., Stout, M. J., & Davis, J. A. Is AI the key to simplified scouting and spraying? Delta FarmPress. Article by Raney Rapp. <https://www.farmprogress.com/crops/is-ai-the-key-to-simplified-scouting-and-spraying->. – Press release. June 6, 2025.
- Grijalva, I., & Fu, P. Two new professors look to improve farming with research, technology. LSUAgcenter. Article by Anthony Bailey. <https://www.lsuagcenter.com/articles/page1749561611586>. – Press release. June 10, 2025.
- Diaz, R., Shackelford, D., Ayala, V., Bieller, A., Kinsler, D., Mariani, F., Gaffke A., Grijalva, I., Davies, M., Dilisi, N., Caillouet, K. Opportunities for improving biological control of aquatic weeds. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.
- Broussard, J., Diaz, R., & Grijalva, I. Automatic detection of roseau cane scale using machine learning approaches. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.
- Ayala, V., Kinsler, D., Grijalva, I., & Diaz, R. How real-time satellite monitoring can enhance the biological control of giant salvinia (*Salvinia molesta*) in Louisiana. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.
- Broussard, J., Diaz, R., & Grijalva, I. Automatic Counting of Roseau cane scale (*Nipponaclerda biwakoensis*) using computer Vision. The 7th Annual Roseau Cane Research Summit, Louisiana State University. Baton Rouge, LA, U.S. – Research poster. Feb. 2025.

Awards & Honors

- Upadhyaya, S., 3rd Place, Poster Presentation, 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17, 2025.

FACULTY ACTIVITIES

- Victoria Ayala (MSc. student-Committee member) received a \$4,000 travel award to attend the XVII International Symposium on Biological Control of Weeds in New Zealand.

New Grants & Contracts

- Grijalva I., & Diaz, R. Enhanced water hyacinth management through remote sensing and augmented biological control. Barataria-Terrebonne National Estuary Program. Funding: \$144,886
- Grijalva, I., & Davis, J. Artificial intelligence for stink bug detection in precision pest management. Louisiana soybean and feed grains research & promotion board. Funding: \$39,624
- Grijalva, I., & Hoffseth, K. Detecting insect-damaged soybeans with artificial intelligence solutions. Louisiana soybean and feed grains research & promotion board. Funding: \$39,624
- Dalla Lana F., Angira B., Famoso A., & Grijalva, I. Development and validation of disease phenotyping protocols to improve breeding selection and pathology research. Louisiana soybean and feed grains research & promotion board. Funding: \$40,000
- Prashant J., Stephenson D., Miller D., & Grijalva, I. Integrated weed management solutions in the absence of dicamba for mitigating herbicide resistance in Louisiana soybean and grain crops. Louisiana soybean and feed grains research & promotion board. Funding: \$42,362
- Cronin J., Doyle V., Grijalva, I., & Diaz, R. Roseau cane die-off research support. United States Department of Agriculture, Animal and Plant Health Inspection Service. 2025-2026. Funding: \$701,673. Co-PI Grijalva portion \$80,557.

Visiting Scientists/Students

- Usman Mohammed, University of Florida.

New Collaborations

- Dr. Venkat Margapuri, Department of Computing Sciences, Villanova University, Villanova, PA.
- Dr. Brian Spiesman, Department of Entomology, Kansas State University, Manhattan, KS.
- Dr. William Shu, Department of Computer Science, Kansas State University, Manhattan, KS.

Publications

- Grijalva, I., Adams, H. B., & McCornack, B. (2025). A fine-tuned deep learning model for detecting

Japanese beetles in soybeans using unmanned aircraft systems (UAS) and mobile imaging. *Machine Learning with Applications*, 21, 00711. <https://doi.org/10.1016/j.mlwa.2025.100711> (Impact Factor: 4.9)

Kristen Healy

Invited Presentations

- Healy, K. Controlling Bees and Wasps. Pesticide Institute. Baton Rouge, LA. Jan 2025.
- Healy, K. forensic entomology as a teaching tool. American Mosquito Control Association Annual Meeting. Puerto Rico. Feb 2025.
- Healy, K. Impacts of pesticides to bees. Texas Tech University's Bridging Math and Science Workshop. Lubbock, TX. April 2025.
- Healy, K. Controlling Bees and Wasps. Loyola University Guest Lecture. New Orleans, LA. Apr 2025.
- Healy, K. Tick Identification. Louisiana Mosquito Control Association, Quarterly Biologist Roundtable. St. Tammany, LA. May 2025.
- Healy, K. Welcome and things to know about the Washington Conference. American Mosquito Control Association, Washington Days. Washington, DC. May 2025.
- Healy, K. Impacts of pesticides to bees. Pollinator event at LaHouse. Baton Rouge, LA. May 2025.
- Healy, K. Ectoparasites impacting pets. Animal Welfare Committee conference to Veterinarians. Lafayette, LA. Sept 2025.
- Healy, K. Ectoparasites impacting pets. Louisiana Veterinarian's Association monthly meeting. Lafayette, LA. Sept 2025.
- Healy, K. Impacts of pesticides to bees. South Carolina Mosquito control meeting. Hilton Head, SC. Oct 2025.
- Healy, K. Ai in mosquito control. Louisiana Mosquito Control Association's annual meeting. Baton Rouge, LA. Dec 2025.

New Committees

- Faculty Senate Executive committee
- American Mosquito Control Association Public Relations committee chair

New Collaborations

- LSU Health New Orleans & Loyola University

FACULTY ACTIVITIES

Fangneng Huang

Invited Presentations

- Silva, T., B. Plata, F. Huang. 2025 Susceptibility/ resistance status of *Spodoptera frugiperda* to Bt and chemical insecticides in the southern U.S. Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.
- Huang, F. 2025. The success of Bt corn for sugarcane borer management in the U.S.: Is it a good indication for a stainable use of the biotech sugarcane to control the pest in South America? Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.
- Huang, F. 2025. Lessons and prospects from three decades of global IRM for Bt crops. 5th Annual Congress on Plant Science and Biosecurity. June 23 – 24 at Prague, Czech Republic (on-line).
- Roy R., D. Kerns, F. Huang, F. Yang, D. Kerns and J.L. Jurat-Fuentes. 2025. Diverse mechanisms of Vip3Aa resistance in fall armyworm: A tale of two strains. SIP Annual Conference, August 3-7. Puerto Varas, Chile.

Other Presentations

- Lin, S., G. Head, T. Silva, B. Patla, and F. Huang. 2025. Backcrossed populations reduced confound effects of heterosis on the measurements of fitness costs and dominance levels of Bt resistance in *Helicoverpa zea*. Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.
- Tiago, S., S. Lin, B. Patla, H. Feng, G. Head, and F. Huang. 2025. Laboratory selection of Bt-resistant fall armyworm (*Spodoptera frugiperda*): investigating epigenetic mechanisms and their role in resistance development and management. Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.
- Patla, B., T. Silva, S. Lin, G.P. Head, F.P.F. Reay-Jones, X. Ni, L. Bernaola, S. Brown, D. Cook, J. Villegas, J.A. Davis, and F. Huang. 2025. Susceptibility of *Helicoverpa zea* to eight common chemical insecticides in the southeastern United States. Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.
- Lin, S., G. Head, T. Silva, B. Patla, and F. Huang. 2025. Non-backcrossed populations result in a considerable underestimation of fitness costs and overestimation of dominance levels of Bt resistance in *Helicoverpa zea*. 97th Annual Meeting of the Entomological Society of

America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.

- Patla, B., T. Silva, S. Lin, J. Davis, G. Head, X. Ni, D. Cook, F. Reay-Jones, S. Brown, L. Bernaola, and F. Huang. 2025. Susceptibility of *Helicoverpa zea* populations in the southeastern United States to eight common insecticides. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.

New Grants & Contracts

- Development and implementation of a practical IRM program for the Bt-sugarcane and sugarcane borer systems in Brazil. (\$157,551 CTC- Centro de Tecnologia Canavieira, Brazil).
- Documentation of the necessity of cannibalism and presence of host plants for long-term rearing and maintenance of *Helicoverpa zea* in the laboratory (\$72,480, Bayer CropScience)

Publications

- Chan, W-P, I. Daszak, G.D. Buntin, D. Cook, W. Crow, F. Huang, A. Huseeth, K. Kesheimer, D. Ludwick, S. Paula-Moraes, D. Reisig, and A.C.S. Owens. 2025. Historical behavioural data disentangle evolutionary and environmental drivers of recent declines in insect attraction to light. *Proc. R. Soc. B* 292: 20252319. <https://doi.org/10.1098/rspb.2025.2319>.
- Patla, B., T. Silva, S. Lin, G.P. Head, J.A. Davis, G.A. Sword, A. Miller, F.P. F. ReayJones, X. Ni, J.A. Qureshi, D. Carrillo, J. Villegas, D.R. Cook, C. Daves, B. Thrash, S.V. Paula-Moraes, and F. Huang. 2025. Areawide susceptibility of *Spodoptera frugiperda* to four common chemical insecticides in the southern U.S. *Pest Manag. Sci.* DOI 10.1002/ps.70385.
- Roy R., D. Kerns, H. Abdelgaffar, M. Huff, M. Staton, F. Yang, F. Huang, and J.L. Jurat-Fuentes. 2025. Reduced processing and toxin binding associated with resistance to Vip3Aa in a resistant strain of fall armyworm (*Spodoptera frugiperda*) from Louisiana. *Pest Manag. Sci.* 81: 4097–4107.
- Rodrigues, G.J., C.I.R. Sakuno, F.J.B. Francischini, K.M.A. Komadaa, and F. Huang. 2025. Inheritance and fitness costs of Cry1Ab and Cry1Ac resistance in Brazilian populations of *Diatraea saccharalis* (Lepidoptera: Crambidae). *Crop Prot.* 194 (2025) 107216.
- Huang F., W. Yu, G.P. Head, Y. Niu, and C. Sakuno, S.

FACULTY ACTIVITIES

Lin, T. Silva, B. Patla. 2025. Inheritance of Cry2Ab2 resistance in two *Helicoverpa zea* (Lepidoptera: Noctuidae) populations resistant to single- and dual-*Bacillus thuringiensis* proteins. *J. Invertebr. Pathol.* 208 (2025) 108237.

- Silva, T., G.A. Sword, A. Miller, J.A. Qureshi, G.P. Head, D.D. Kerns, J-L. Jurat-Fuentes, J. Villegas, T.B. Towles, X. Ni, F.P. F. Reay-Jones, D. Carrillo, D.R. Cook, C. Daves, M. J. Stout, B. Thrash, S. V. Paula-Moraes, S. Lin, B. Patla, Y. Niu, C. I.R. Sakuno, and F. Huang. 2025. Reversal of practical resistance in fall armyworm to Cry1F maize: A case report on the resistance to susceptibility in Bt crops from the southeastern United States. *J. Pest. Sci.* 98:1019–1019.

Claudia Husseneder

Invited Presentations (all virtual talks)

- Husseneder C. 2025. Invasion biology of the Formosan subterranean termite. *Corteva Symposium*
- Husseneder, C., Setia, G. and Schlub, R. 2025. Are termites vectors of bacteria linked to ironwood tree decline in Guam? Mariana Islands Conservation Conference. Guam, U.S. Territory.
- Husseneder C. 2025. Tales of termite trails: How did the Formosan subterranean termite get here. Keynote address at the North American Termite Survey Webinar “Distribution, Status, and Management of Native and Invasive Termites”.

Other Presentations

- Martin-Ewert, A., McMenamin, A., Adjaye, D., Rainey, V., Husseneder, C., Ricigliano, V. 2025. Enhancing honey bee immunity with microalgal feed additives. American Bee Research Conference (ABRC). Reno, NV.
- Martin-Ewert, A., McMenamin, A., Adjaye, D., Rainey, V., Husseneder, C., Ricigliano, V. 2025. Enhancing honey bee immunity with microalgal feed additives. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.
- Martin-Ewert, A., McMenamin, A., Daisley, B., Avalos, A., Simone-Finstrom, M., Husseneder, C. and Ricigliano V. 2025. Honey bee stock mediates the gut microbiome response to diet. Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.

Awards & Honors

- Third place in the Mississippi State University BugFest 2025 Photo Competition
- Honorable Mention in the Mississippi State University BugFest 2025 Photo Competition.

Graduated students

- Fall 2025 - Allyson Martin Ewert. Ph.D.

Publications

- Iniguez, E. Rodriguez, F., Husseneder, C., Foil, L., Maldonado, R. 2025. Ligand-lytic peptides for specific targeting of *Leishmania major* and *Trypanosoma cruzi* parasites. *Frontiers in Cellular and Infection Microbiology Sec. Parasite and Host*, Volume 15 - 2025. <https://doi.org/10.3389/fcimb.2025.1595333>. Impact Factor 4.0
- Guice, J., Page, R., Raggio, A.M., Malbrue, R., Wise, J.T.F., Husseneder, C., Carvajal-Aldaz, D.G., Stout, R.W., Coulon, D. & Keenan, M. 2025. Dermatitis in Lean Zucker Diabetic Fatty Rats. *Laboratory Animal Science Professional*. LAS Pro January/February:14-18.

Todd Johnson

Invited Presentations

- T.D. Johnson, C. Kuetsinya, D. Debutts, V. Jindal, W. Sheline, M. Pandey, J. McKenny, J.R. Meeker, T. Schowalter. 2025. Does variation in the phytochemical landscape structure interactions between insects and their hosts in southeastern forest ecosystems? In: *The Science of Scents: Recent Advances in Chemical Ecology in Sustainable Insect Pest Management*. Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.
- T.D. Johnson. 2025. Characterizing and harnessing natural variation to optimize the conservation and health of forests in the Southeastern United States. University of Arkansas, Department of Entomology and Plant Pathology, Fayetteville, AR.
- T.D. Johnson, A. Sanford, R. Graugnard, C.W. Johnson. 2025. Hurry before its history—generating baseline data on ash associated arthropods prior to invasion by the emerald ash borer in subtropical southeastern Louisiana. In: *Cascading Impacts of Invasive Species*. USDA Interagency Forum on Invasive Species, Annapolis, MD.
- T.D. Johnson, E. Grossman, C. Butler, T. Sparks, V.

FACULTY ACTIVITIES

Bayless, J. Richards, R. Diaz. 2025. What we know about *Chlorophorus signaticollis*, a new and potentially damaging longhorned beetle detected in New Orleans, LA. In: Invasive and Woodboring Bark Beetles. USDA Interagency Forum on Invasive Species, Annapolis, MD.

- T.D. Johnson. 2025. Assessing and enhancing the suppression of native and non-native populations of woodboring beetles in forest ecosystems. USDA-ARS Beneficial Insect Introduction Research Unit, Newark, DE.

Contributed Presentations

- T.D. Johnson, D. Debutts, L. Gaston, W. Sheline, V. Jindal. 2025. Impact of soil type and drought on the growth and volatile production of loblolly (*Pinus taeda* L.) and longleaf pine (*Pinus palustris* Mill.), two hosts of southern pine beetle (*Dendroctonus frontalis* Zimmermann), Southern Forest Insect Work Conference, Tulsa, OK.
- T.D. Johnson, E. Grossman, W. Sheline, C. Sharma, J. Macias, B. Setter. 2025. Impact of trap type and lure on the collection of longhorned beetles in two forest ecosystems in southeastern Louisiana. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.

Student Oral Presentations

- C. Sharma, W. Sheline, E. Grossman, J. Macias, B. Setter, T.D. Johnson. 2025. Impact of trap type, fluon treatment, and lure on the collection of longhorned beetles (Coleoptera: Cerambycidae) in two forest ecosystems in subtropical southeastern Louisiana. Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.
- Jindal, V., R. Diaz, T.D. Johnson. 2025. Reproductive and behavioral consequences of nutritional stress on two braconid classical biological control agents of the emerald ash borer. Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.
- C. Sharma, E. Grossman, W. Sheline, J. Macias, B. Setter, T.D. Johnson. 2025. Impact of trap type and lure on the collection of longhorned beetles (Coleoptera: Cerambycidae) in two forest ecosystems in southeastern Louisiana, Southern Forest Health Work Conference, Tulsa, OK.
- Jindal, V., R. Diaz, K. Meher, T.D. Johnson. 2025. Nutritional stress alters the physiology and host-location behavior of two classical biocontrol agents

of the emerald ash borer, In: Let the good bugs crawl: beneficial forest insects, Southern Forest Health Conference, Tulsa, OK.

- Graugnard, R, A. Sanford, T.D. Johnson. 2025. Characterizing true bug (Hemiptera) diversity associated with three species of ash (Oleaceae: *Fraxinus*) in Southeastern Louisiana. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.
- Jindal, V., T.D. Johnson. 2025. Does insect physiology predict the behavioral responses of two biological control agents of the emerald ash borer? 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.

Student Poster Presentations

- Grossman, E., W. Sheline, T. Hagerty, J.J. Duan, T.D. Johnson. Ovipositional behavior, phenology, and natural enemy response of the flatheaded hackberry borer (Coleoptera: Buprestidae: *Agrilus macer*), a secondary pest of sugarberry (Cannabaceae: *Celtis laevigata*), in southeastern Louisiana. 2025. USDA Interagency Forum on Invasive Species, Annapolis, MD.

Symposia Organized

- E. Althoff, K. Perry, T.D. Johnson. 2025. From the Roots to the Shoots: Impacts of Human and Ecological Legacies on Forest Ecosystems. Section Symposium, Entomological Society of America National Meeting, Portland, OR. Speakers: Patrick Tobin (Univ. Washington), Kier Klepzig (Jones Center), Shealyn Malone (Univ. Minnesota), John Coutre (Purdue), Jackson Audley (Univ. California Davis), Michael Howe (Utah State University).

Awards & Honors

- Jindal, V., 3rd Place, Masters 1. 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17, 2025.
- Sharma, C., 3rd Place, Masters 2. 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17, 2025.
- Vanshika Jindal, Boethel Graduate Student Scholarship (Master's)
- Sharma, Chiranjivi, Roussel Graduate Student Scholarship (Master's)

FACULTY ACTIVITIES

New Grants & Contracts

- 2025-2026 LSU Libraries Special Collection Fellowship (\$2,500)
- 2025-2026: USDA APHIS PPA7721. Measuring the impact of egg parasitoids on emerald ash borer and other *Agilus* pests in the U.S., with Jian J. Duan (USDA-ARS), Jeremy Andersen (University of Massachusetts Amherst), Kamal JK Gandhi (University of Georgia), Toby Petrice (USDA Forest Service), Claire Rutledge (Connecticut Agricultural Experiment Station) \$224,214 (T.D. Johnson subaward = \$22,978)
- 2025-2028: US EPA Lake Pontchartrain Basin Restoration Program. Chinese Tallow Removal and Coastal Wetland Restoration, with Mohammad Bataineh (USDA FS SRS), JT Vogt (USDA FS SRS), Daniel Saenz (USDA FS SRS), Christopher Schalk (USDA FS SRS), Lauren Pile Knapp (USDA FS NRS), Jacob Fraser (USDA FS NRS), Qinfeng Guo (USDA FS Eastern Forest Environmental Threat Assessment Center), Matthew Sieja (US FWS), Emily Martin (US FWS), Matt Cleland (USDA Wildlife Services), Veronica Manrique (Southern University), Eric Baka (LDWF) \$854,490 (T.D. Johnson subaward = \$438,260)

Students Graduated

- Fall 2025 - Chiranjivi Sharma. Master's degree.
- Fall 2025 – Vanshika Jindal. Master's degree

Editorial Contributions

- Associate Editor, Agricultural and Forest Entomology

Dawson Kerns

Invited Presentations

- D.D. Kerns. Mechanism of Vip Resistance in Cotton Bollworm. Texas Plant Protection Association. December 10, 2025. Bryan, TX.
- D.D. Kerns. Redbanded Stink Bug Management in Soybeans. Texas Plant Protection Conference. December 10, 2025. Bryan, TX
- D.D. Kerns. J. Villegas, J. Davis, T. Towles, N. Arey, S. Brown. Threat of Redbanded Stink Bug and Other Stink Bug Pests to Louisiana Row Crops. A Multi-State Update on Stink Bug Invasions and Addressing the Growing Threat to Southeastern Agriculture (symposium). 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.

- D.D. Kerns. Entomologist Panel Discussion. Mid-South Solution Summit, Memphis, TN. February 27, 2025.
- D.D. Kerns. Intrusion of the Corn Leafhopper into the US. Louisiana Agricultural Technology & Management Conference, Marksville, LA. February 14, 2025.
- D.D. Kerns. Incorporating Plinazolin into Cotton Insect Management Systems. Louisiana Agricultural Technology & Management Conference, Marksville, LA. February 13, 2025.
- D.D. Kerns, D.L. Kerns, F. Yang, J.L. Jurat-Fuentes, H. Abdelgaffar. Characterization of Cry and Vip3Aa resistance in *Helicoverpa zea*. Beltwide Bt Resistance Meeting. Beltwide Cotton Conference, New Orleans, LA. January 14, 2025.
- D.D. Kerns. Insecticide applications in Louisiana agriculture. Louisiana Agriculture Aviation Association Convention, Lake Charles, LA. January 8, 2025.

Other Presentations

- Fuhr, F.M., H. Kennedy, J. Santiago-Gonzalez, P. Porter, W. Xu, D.D. Kerns, J.L. Jurat-Fuentes, D. Kerns. Resurgence of an old threat: Evolution of *Diatraea grandiosella* (Lepidoptera: Crambidae) resistance to *Bacillus thuringiensis* (Bacillales: Bacillaceae) proteins in New Mexico. Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.
- Kerns, D., D.L. Kerns, F. Yang, J.L. Jurat-Fuentes, H. Abdelgaffar. Characterization of Cry and Vip3Aa resistance in *Helicoverpa zea*. Beltwide Cotton Conference, New Orleans, LA. January 2025.
- Fuhr, F.M., H. Kennedy, D.L. Kerns, D.D. Kerns, J.L. Jurat-Fuentes. Is Resistance to Bt Proteins Occurring in Populations of Southwestern Corn Borer (*Diatraea grandiosella*) From New Mexico? Beltwide Cotton Conference, New Orleans, LA. January 2025.
- Towles, T., D. Cook, W.D. Crow, B. Thrash, G. Studebaker, N. Bateman, S. Brown, C. Floyd, D.L. Kerns, D.D. Kerns. Bollworms: Midsouthern Corn and Cotton Management. Beltwide Cotton Conference, New Orleans, LA. January 2025.
- Cook, D., T. Towles, W.D. Crow, S. Brown, B. Thrash, D.L. Kerns, C. Floyd, G. Studebaker, J. Villegas, D.D. Kerns, N. Bateman. Management of Thrips in Mid-South Cotton. Beltwide Cotton Conference, New Orleans, LA. January 2025.
- Reisig, D., E. Goldsworthy, D.D. Kerns, S. Paula-Moraes, J.L. Jurat-Fuentes. First characterization of Vip3Aa

FACULTY ACTIVITIES

Resistance in Beet Armyworm, *Spodoptera exigua* (Hübner), Collected from Bollgard 3 Cotton. Beltwide Cotton Conference, New Orleans, LA. January 2025.

Extension Presentations

- Kerns, D.D. 2025. Corn Leafhopper and the Red Stunt Disease Complex. Invasive Species Workshop. Alexandria, LA. December 3.
- Kerns, D.D. 2025. Invasive Insect Pests in Louisiana. Pesticide Applicator Recertification Meeting. Lake Providence, LA. December 2.
- Kerns, D.D. 2025. Garden Entomology. Master Gardeners Training. St. Joseph, LA. November 12.
- Kerns, D.D. 2025. Insecticide Applications in Louisiana Field Crops. Pesticide Applicator Recertification Meeting. Alexandria, LA. November 6.
- Kerns, D.D. 2025. Bermudagrass Stem Maggot and Fall Armyworm Management in Pastures. Northeast Louisiana Beef and Forage Field Day. September 18.
- Kerns, D.D. 2025. Soybean Insect IPM. ANR Agent Soybean Training. Winnsboro, LA. September 4.
- Kerns, D.D. 2025. Corn Leafhopper in Louisiana. Northeast Region Corn Field Day. Winnsboro, LA. September 4.
- Kerns, D.D. 2025. Cotton Insect Identification and Damage. Insect Scout School. Alexandria, LA. June 9.
- Kerns, D.D. 2025. Cotton Insect Identification and Damage. Insect Scout School. Winnsboro, LA. June 3.
- Kerns, D.D. 2025. Fall Armyworms in Millet. Wildlife Forum and Field Day. St. Joseph, LA. May 9.
- Kerns, D.D. 2025. Entomology/Hessian Fly Update. Wheat and Oat Field Day. Winnsboro, LA. April 22.
- Kerns, D.D. 2025. Insecticide Applications in Louisiana Field Crops. Pesticide Applicator Recertification Meeting. Columbia, LA. February 19.
- Kerns, D.D. 2025. Insecticide Applications in Louisiana Field Crops. Pesticide Applicator Recertification Meeting. Delhi, LA. January 22.

Electronic Media

- “New Rice Pest Could Cause Big Problems For Growers”. LSU AgCenter. October 30, 2025. <https://www.youtube.com/watch?v=eDSRA7aZCFg>
- “2025 Corn Field Day at Macon Ridge Research Station: Insect Issues”. LSU AgCenter. September 4, 2025. <https://www.youtube.com/watch?v=eXYnA7U1UzA>

Radio

- “Cotton Report: Cotton Jassid”. The Voice of Louisiana Agriculture Radio Network. October 17, 2025.
- “Cotton Report: Cotton Jassid”. The Voice of Louisiana Agriculture Radio Network. October 14, 2025.
- “Cotton Report: Cotton Jassid”. The Voice of Louisiana Agriculture Radio Network. October 13, 2025.

Web articles

- “Bt genes are losing efficacy, consider a new approach” Delta FarmPress. February 12, 2025. <https://www.farmprogress.com/cotton/bt-genes-are-losing-efficacy-consider-a-new-approach>

Newsletter articles

- “Cotton Jassid Update-October 2025”. Louisiana Crops Newsletter. October 2025. <https://www.lsuagcenter.com/articles/page1761079774118>
- “Cotton Jassid Detected in Louisiana: Monitoring Intensifies as Pest Spreads Across Southeast”. LSU AgCenter. September 15, 2025. Cotton Jassid Detected in Louisiana: Monitoring Intensifies as Pest Spreads Across the Southeast
- “Looper and Corn Earworm Management in Soybeans”. Louisiana Crops Newsletter. August 2025. <https://www.lsuagcenter.com/articles/page1754578366362>
- “Tarnished Plant Bug Management in Blooming Cotton”. Louisiana Crops Newsletter. June 2025. <https://www.lsuagcenter.com/articles/page1749581044187>
- “Tarnished Plant Bug Management in Pre-bloom Cotton”. Louisiana Crops Newsletter. May 2025. <https://www.lsuagcenter.com/articles/page1746714816961>
- “Early Season Management Considerations for Thrips in Cotton”. Louisiana Crops Newsletter. April 2025. <https://www.lsuagcenter.com/articles/page1743632803683>

New Grants & Contracts

- Louisiana Soybean & Grains Research and Promotion Board. 2025: “Monitoring and Management of Stink Bugs on Non-Crop Hosts and Soybean” - \$70,001
- Louisiana Soybean & Grains Research and Promotion Board. 2025: “Insecticide Application Strategies for Stink Bugs in Soybean” - \$66,000

FACULTY ACTIVITIES

- Louisiana Soybean & Grains Research and Promotion Board. 2025: "Enhancing Soybean Insect Pest Management Strategies for Northeast Louisiana" -\$15,001
- Louisiana Cotton State Support Committee. 2025: "Economic Value of Bt Cotton Traits and Insecticides in Louisiana" -\$13,000
- Cotton Foundation. 2025: "Effects of Proposed Field Border Pesticide Drift and Runoff Mitigations on Tarnished Plant Bug Infestations in Cotton" -\$22,505
- Industry Contracts- \$65,549

New Collaborations:

- Rice Delphacid Working Group, Insecticide Resistance Management

Publications

- Reisig, D., E. Goldsworthy, D. Kerns, S. Paula-Moraes, J.L. Jurat-Fuentes. 2025. First characterization of Vip3Aa resistance in beet armyworm (Lepidoptera: Noctuidae) collected from cotton expressing Vip3Aa19. *Journal of Economic Entomology*. toaf303.
- Heu, C.C., I.X. Schutze, DM. LeRoy, Y.H. Wang, B.A. DeGain, D.D. Kerns, et al. 2025. Knockout of chitin synthase gene confers resistance to Bt toxin Vip3Aa in *Helicoverpa zea*. *Pest Management Science*. 82 (1): 911-919.
- Roy, R., D. Kerns, J.L. Jurat-Fuentes. 2025. Resistance to Vip3Aa: A growing threat with unclear mechanisms and management implications. *Insects*. 16 (8): 820.
- Roy, R., H. Abdelgaffar, D. Kerns, M. Huff, M. Staton, F. Yang, F. Huang, J.L. Jurat-Fuentes. 2025. Reduced processing and toxin binding associated with resistance to Vip3Aa in a strain of fall armyworm (*Spodoptera frugiperda*) from Louisiana. *Pest Management Science*. 81 (7): 4097-4107.
- Ross, S., F. Yang, J.C. Santiago-González, H. Abdelgaffar, D.D. Kerns, et al. 2025. Evaluation of GS-omega/kappa-Htx-Hv1a and Bt toxins against Bt-resistant and -susceptible strains of *Helicoverpa zea* (Boddie) and *Spodoptera frugiperda* (J.E. Smith). *Pest Management Science*. 81 (7): 3565-3572.

Michael Stout

Invited Presentations

- Stout, M.J., J. Sharma, E. Valdez. 2025. Strategies for managing invasive fall armyworm in rice. (15-minute

talk; Member Symposium: "Fall-ing into action: strategies for managing fall armyworm (*Spodoptera frugiperda*)"). Annual Meeting of the Entomological Society of America, Portland, OR. November 9, 2025.

- Sharma, J., C. Chaudhary, R. Pruthi, A. Gaffke, T. Tai, M.J. Stout. 2025. Integrated genomic and transcriptomic profiling provide insights into silicon-mediated resistance to the fall armyworm. (Invited talk, Symposium, "Advances in entomological techniques: bridging Basic and innovative approaches"). Annual Meeting of the Entomological Society of America, Portland, OR. November 9, 2025.

Other presentations

- Gambino C.E., B.E. Wilson, and M.J. Stout. 2025. Evaluation of Insect Pest Complexes in Rice Following Winter Planted Cover Crops. (10-minute talk). Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.
- Gambino, C.E., B.E. Wilson, M.J. Stout. 2025. Cover Crops Reduce Yields but Not Pest Populations in the First Year of Rice Production. 40th Rice Technical Working Group meeting. Student Poster Competition: Plant Protection Panel. New Orleans, LA. February 2025.
- Khan, M.D., M.J. Stout, B.E. Wilson. 2025. Influence of plant ontogeny on susceptibility of rice to stem borers (12-minute talk). Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.
- Khan, M.D., M.J. Stout, B.E. Wilson. 2025. Influence of plant ontogeny on susceptibility of rice to stem borers. 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17, 2025.
- Khan, M.D., M.J. Stout, B.E. Wilson. 2025. Compatibility of insecticidal seed treatment and host plant resistance in management of stem borers in rice (12-minute talk). 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.
- Khan, M.D., M.J. Stout, B.E. Wilson. 2025. Compatibility of insecticidal seed treatment and host plant resistance in management of stem borers in rice (12-minute talk). 40th Rice Technical Working Group meeting, New Orleans, LA, February 17-20, 2025.
- Santos, L., A. Glassmire, A., M.J. Stout. 2025. Elucidating the key volatiles involved in Rice - Rice

FACULTY ACTIVITIES

Stink Bug interactions. Student poster competition. 40th Rice Technical Working Group meeting, New Orleans LA, February 17-20, 2025.

- Santos, L., B.E. Wilson, M.J. Stout. 2025. Elucidating the key volatiles involved in rice-rice stink bug interactions. Masters Ten Minute Paper Competition. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.
- Santos, L., B.E. Wilson, M.J. Stout. 2025. Investigating the role of plant volatiles in interactions between *Oryza sativa* and *Oebalus pugnax* (Hemiptera: Pentatomidae). 15th Annual LSU Entomology Department Graduate Student Symposium, Baton Rouge, LA. October 17, 2025.
- Santos, L., B.E. Wilson, M.J. Stout. 2025. Investigating the role of plant volatiles in interactions between *Oryza sativa* and *Oebalus pugnax* (Hemiptera: Pentatomidae). Masters Ten Minute Paper Competition. Annual Meeting of the Entomological Society of America, Portland, OR. November 10-13, 2025.
- Sharma, J., C. Chaudhary, R. Pruthi, T. Tai, M.J. Stout. 2025. Transcriptome analysis and whole genome sequencing provide insights into silicon-mediated resistance to the fall armyworm, 9th International Conference on Silicon in Agriculture, Serbia (Oral).
- Sharma, J., M.J. Stout. 2025. Performance of four fall armyworm populations on three host plants (Ph.D. Poster Competition, 1st place). 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 9-12, 2025.
- Sharma, J., T. Tai, M.J. Stout. 2025. Investigating the Effect of Silicon on the Occurrence of Rice Insect Pests using OsLsi1 Rice Mutants under Field Conditions. Rice Technical Working Group meeting, New Orleans LA. February 17-20, 2025 (Poster).

Awards & Honors

- Khan, M.D., Boethel Graduate Student Scholarship (Ph.D.)
- Khan, M.D., 1st place, Poster Presentation, 11th Annual LSU International Research Fair
- Sharma, J., 1st Place, Poster Presentation, 15th Annual LSU Entomology Department Graduate Student Symposium, October 17, 2025. Baton Rouge, LA.
- Sharma, J., 1st Place, Poster Presentation (PI-E Section), 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, March 9-12,

2025. Baton Rouge, LA.

- Sharma, J., 2nd place, Three Minute Thesis competition, Pinkie Gordon Lane Graduate School

Visting Scientists/Students

- Antunes, Ana Paula Ananias, Universidade Federal de Lavras; Ph.D. "Sandwich" doctorate scholarship, Brazilian Federal Foundation for Support and Evaluation of Graduate Education – CAPES Foundation

New collaborations

- Dr. Rabi Musah, Department of Chemistry, Louisiana State University

Publications

- Ali, P., J. Matsushima, N. Akhtar, F. Maia, V. Garcia-Lopez, S. Navarro, Z. Liu, J.A. Davis, M.J. Stout. 2025. Systemic accumulation and deterrent effects of ipomeamarone in sweetpotato weevil-injured storage roots. *ACS Agricultural Sciences & Technology*, doi:10.1021/acsagritech.5c00455.
- Stout, M.J., L. Bernaola, J.M. Villegas, and E.C. Kraus. 2025. Exploiting plant phenotypic plasticity in promoting crop resistance to insect pests. In: Glare, T. and J. Jehle (eds.), *Advances in biocontrol of crop insect pests*. Burleigh Dodds Science Publishing, Cambridge, UK. Glare, T. and Jehle, J. A. (ed.), *Advances in biocontrol of crop insect pests*, Burleigh Dodds Science Publishing, Cambridge, UK, 2025, (ISBN: 978 1 80146 839 8; www.bdspublishing.com).
- Ulhoa, L.A., J.A. Davis, and M.J. Stout. 2025. Influence of arbuscular mycorrhizal fungi and silicon on soybean growth and development in the field. *Journal of Sustainable Agriculture and Environment*, 4:e70120.
- Villegas, J.M., M.D. Khan, B.E. Wilson, and M.J. Stout. 2025. Impact of planting date on rice water weevil (Coleoptera: Curculionidae) and stemborer (Lepidoptera: Crambidae) infestations in drill-seeded rice. *Environmental Entomology*, nvafo43 <https://doi.org/10.1093/ee/nvaf043>

Non-refereed publications

- Guardado, K., J. Wang, C. Gambino, M. J. Stout, P. Subudhi. 2025. Impact of mixed cover crop cultivation and nitrogen application on soil health parameters in a Louisiana rice production system. *Proceedings of the 40th Rice Technical Working Group Meeting*, February 17, 2025, New Orleans, LA. 40th RTWG Proceedings - 2025.pdf

FACULTY ACTIVITIES

- Khan, M. D., M. J. Stout, Blake E. Wilson. 2025. Compatibility of insecticidal seed treatment and host plant resistance in management of stem borers in rice. Proceedings of the 40th Rice Technical Working Group, February 17-20, 2025, New Orleans, LA. 40th RTWG Proceedings - 2025.pdf
- Santos, L., M.J. Stout, A. Glassmire. 2025. Elucidating the key volatiles involved in rice-rice stink bug interactions. Proceedings of the 40th Rice Technical Working Group, February 17-20, 2025, New Orleans, LA. 40th RTWG Proceedings - 2025.pdf
- Sharma, J., T. Tai, M. J. Stout (2025). Investigating the Effect of Silicon on the Occurrence of Rice Insect Pests using OsLsi1 Rice Mutants under Field Conditions. Rice technical working group. Proceedings of the 40th Rice Technical Working Group, February 17-20, 2025, New Orleans, LA. 40th RTWG Proceedings - 2025.pdf.
- Sharma J., C. Chaudhary, R. Pruthi, T. Tai, M. J. Stout. 2025. Transcriptome analysis and whole genome sequencing provide insights into silicon-mediated resistance to the fall armyworm. Published abstract, 9th International conference on Silicon in Agriculture, September 15-19, 2025, Belgrade, Serbia. ICSA2025A.pdf

Qian “Karen” Sun

Invited Presentations

- Sun Q. 2025. Chemical communication in termites. The International Termite Course, Fort Lauderdale, FL
- Sun Q. 2025. Corpse management and policing in termite colonies. The International Termite Course, Fort Lauderdale, FL
- Sun Q. 2025. Behavior, ecology, and management of termites. Louisiana Department of Agriculture and Forestry, Structural Pest Control Research Committee Meeting, Baton Rouge, LA

Other Presentations

- Khadka A, Hakanoglu H, Lee S-B, Sun Q. 2025. Molecular regulation of age polytheism in the Formosan subterranean termite, *Coptotermes formosanus*. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, March 9-12, 2025. Baton Rouge, LA.
- Hakanoglu H (invited speaker), Slater H, Sun Q, Ihle K, Avalos A. 2025. Exploring honey bee vitellogenin

variants in the United States. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, March 9-12, 2025. Baton Rouge, LA.

- McKay A, Sun Q. 2025. Physiological, behavioral, and molecular responses to water stress in the Formosan subterranean termite (*Coptotermes formosanus*). 15th Annual LSU Entomology Department Graduate Student Symposium, March 9-12, 2025. Baton Rouge, LA.
- Hakanoglu H, Slater H, Sun Q, Ihle K, Avalos A. Exploring vitellogenin variants in U.S. commercial honey bee (*Apis mellifera*) stocks. The 15th Annual LSU Entomology Department Graduate Student Symposium, March 9-12, 2025. Baton Rouge, LA.
- Wang Y, Chouvenec T, Sun Q. 2025. Plasticity in desiccation resistance and cuticular hydrocarbon production in subterranean termites. Annual Meeting of the Entomological Society of America, November 10-13, 2025. Portland, OR.
- Hakanoglu H, Slater H, Sun Q, Ihle K, Avalos A. 2025. Uncovering vitellogenin diversity across managed U.S. honey bee stocks (poster). Annual Meeting of the Entomological Society of America, November 10-13, 2025. Portland, OR.
- Hakanoglu H (invited speaker), Slater H, Sun Q, Ihle K, Avalos A. 2025. Exploring vitellogenin variants in U.S. commercial honey bee (*Apis mellifera*) stocks. Annual Meeting of the Entomological Society of America, November 10-13, 2025. Portland, OR.

Awards & Honors

- Hakanoglu, Hasim, Roussel Graduate Student Award (Ph.D. program)
- Hakanoglu, H., 1st Place, 10-Minute Oral Presentation, 15th Annual LSU Entomology Department Graduate Student Symposium, October 17, 2025. Baton Rouge, LA.
- Hakanoglu, H., 2nd Place, PBT Poster Presentation, Annual Meeting of the Entomological Society of America, November 10-13, 2025. Portland, OR.

New Grants & Contracts

- Louisiana Department of Agriculture and Forestry, Structural Pest Research, July 2025 - June 2026, \$50,000. PI: Qian Sun (contract)
- Donation from Louisiana Pest Management Association in 2025, \$2,100

FACULTY ACTIVITIES

New Collaborations

- Thomas Chouvenc, University of Florida

Graduated Students

- Summer 2025 – Arjun Khadka. Ph.D. degree.

Invited Publications

- Doherty E, Camano-Flores N, Sun Q, Wilson B. 2025. Examining factors influencing varietal resistance to *Rhyzopertha dominica* (F.) in stored rice. Crop Protection 190: 107087.

Blake Wilson

Invited Presentations

- Wilson, B.E. 2025. Rice insect update. Southwest Louisiana Rice Advisory Meeting, Jennings, LA. 5 Nov 2025.
- Wilson, B.E. 2025. Rice insect update. Acadia Parish Rice Advisory Meeting, Crowley, LA. 4 Nov 2025.
- Wilson, B.E. 2025. Invasive threats to Louisiana rice production. Invasive pest workshop, Alexandria, LA. 3 December 2025.
- Wilson, B.E. 2025. Stored rice insects. Rice Production School, Crowley, LA. 13 October 2025.
- Wilson, B.E. 2025. Sugarcane insects update. St. Martin/Lafayette sugarcane production meeting, St. Martinville, LA. 25 July 2025.
- Wilson, B.E. 2025. Sugarcane insects update. Assumption sugarcane production meeting, Napoleonville, LA. 22 July 2025.
- Wilson, B.E. 2025. The Sugarcane Entomology Program. LSU AgCenter Sugarcane Research Station Field Day, St. Gabriel, LA. 16 July 2024.
- Wilson, B.E. 2025. Rice insect management. Rice Production School, Crowley, LA. 15 July 2025.
- Wilson, B.E. 2025. Principles of entomology. Rice Production School, Crowley, LA. 15 July 2025.
- Wilson, B.E. 2025. Insect Scouting Methods: On-Farm Demonstration. Rice Production School, Crowley, LA. 15 July 2025.
- Wilson, B.E. 2025. Sugarcane insects update. Rapides/Avoyelles sugarcane meeting. Alexandria, LA. 8 July 2024.
- Wilson, B.E. 2025. Rice entomology research. Rice Research Station Field Day, Crowley, LA. 24 June 2025.
- Wilson, B.E. 2025. Rice insect update. South Farm Field Day, Crowley, LA, 11 June 2025.
- Wilson, B.E. 2025. Sugarcane and rice insect overview. Scout School, Alexandria, LA, 9 June 2025.
- Wilson, B.E. 2025. Rice entomology research. Brazilian stakeholder visit, Crowley, LA, 9 June 2025.
- Wilson, B.E. 2025. Rice insect update. Bieber Farms Field Day, Mamou, LA. 29 May 2025.
- Wilson, B.E. 2025. Rice insect update. McNeese Farm Field Day, Lake Charles, LA. 28 May 2025.
- Wilson, B.E. 2025. Early season pests of sugarcane. Sugarcane Research/Extension Meeting Donaldsonville, LA. 14 May 2025.
- Wilson, B.E. 2025. Managing apple snails in crawfish/rice production systems. Rice Production School, Crowley, LA. 13 May 2025.
- Wilson, B.E. 2025. Managing insect pests of stored grain. Pesticide Recertification Training, Alexandria, LA. 8 May 2025.
- Wilson, B.E. 2025. Insecticidal seed treatments in rice. Pesticide Recertification Training, Alexandria, LA. 8 May 2025.
- Wilson, B.E. 2025. Sugarcane insect update. Iberville Sugarcane Production Meeting, Plaquemine, LA. 25 Feb 2025.
- Wilson, B.E. 2025. Rice insect management update. Avoyelles/Rapides Parish Rice Meeting, Mansura, La. 6 Feb 2025.
- Wilson, B.E. 2025. Sugarcane pest management. Pointe Coupee/WBR Sugarcane Production Meeting. 3 Feb 2025.
- Wilson, B.E. 2025. Sugarcane/Rice/Crawfish Pest Management. St. Landry Field Crops Production Meeting, Opelousas, LA Sugarcane Growers Meeting, Napoleonville, LA. 28 Jan 2025.
- Wilson, B.E. 2025. Rice insect management update. Acadia Parish Rice Meeting, Crowley, LA. 9 Jan 2025.
- Wilson, B.E. 2025. Rice insect management update. Evangeline Parish Rice School, Mamou, LA. Jan 8, 2025.
- Wilson, B.E. 2025. Rice insect management update. Southwest Louisiana Rice School, Welsh, LA. 7 Jan 2025.

FACULTY ACTIVITIES

Conference Presentations

- Wilson, B.E. 2025. Insecticidal control of the rice delphacid. Rice Outlook, New Orleans, LA. 9 December 2025.
- Wilson, B.E. 2025. Optimizing integrated controls for sugarcane stem borer management in Louisiana, USA. Annual Meeting of the Entomological Society of America, Portland, OR. November 12, 2025.
- Penn, H.A. and B.E. Wilson. 2025. Associations of sugarcane borer damage with prior damage, cultivar, and crop year. Annual Meeting of the Entomological Society of America, Portland, OR. November 12, 2025.
- Khan, M.D., M.J. Stout, and B.E. Wilson. 2025. Influence of plant ontogeny on rice susceptibility to Lepidopteran stem borers. Annual Meeting of the Entomological Society of America, Portland, OR. November 12, 2025.
- Rivera, C and B.E. Wilson. 2025. Population dynamics and management of apple snails (*Pomacea maculata*) in Louisiana crawfish (*Procambarus clarkii*) aquaculture. Entomol. Soc. Amer. Annual Meeting, Portland, OR. 10 November 2025.
- Thibodaux, S.L. and B.E. Wilson. 2025. Mapping the infestation: Spatial dynamics of *Eoreuma loftini* (Dyar) in sugarcane. Annual Meeting of the Entomological Society of America, Portland, OR. November 10, 2025.
- Musgrove, T.R.T., B.E. Wilson, T. LaGrange, L. Bernaola, and M.J. Stout. 2025. Impact of plant seeding rate on stem borer (Family: Crambidae) injury in drill-seeded rice (*Oryza sativa* L) in Louisiana. Annual Meeting of the Entomological Society of America, Portland, OR. November 9, 2025.
- Wilson, B.E. 2025. Inconsistent performance of insecticidal seed treatments in Louisiana rice. Corteva Field Crops Entomology Retreat, Burras, LA. 8 September 2025.
- Wilson, B.E. 2025. Incorporating cultivar resistance into integrated management of sugarcane stem borers in Louisiana, USA. International Society of Sugarcane Technologists XXXII Congress, Cali, Colombia. 25 August 2025.
- Wilson, B.E. 2025. Managing invasive apple snails in Louisiana rice and crawfish production systems. Invasive Gastropods in Agriculture Working Group. Featured speaker, virtual meeting. 10 July 2025.
- Thibodaux, S.L. and B.E. Wilson. 2025. Effects of fall and spring defoliation on plant cane growth. Amer. Soc. Sugarcane Tech. Joint Annual Meeting, Charlotte Harbor, FL. 25 June 2025.
- Wilson, B.E. and M.J. Stout. 2025. Refining rice stinkbug thresholds in the Mid-South. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 11, 2025. Invited symposium participant.
- Thibodaux, S.L. and B.E. Wilson. 2025. Effects of fall and spring defoliation on plant cane growth. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 11, 2025.
- Khan, M.D., M.J. Stout, and B.E. Wilson. 2025. Compatibility of insecticidal seed treatment and host plant resistance in management of stem borers. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 11, 2025.
- Stout, M.J., B.E. Wilson, L.A. Santos, and S. Bhavanam. 2025. Harnessing chemical ecology to improve management of the rice stink bug. 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 11, 2025.
- Musgrove, T.R.T., Villegas J.M., Stout M.J., Bateman, N., Cook, D., Floyd, C., and B.E. Wilson. 2025. Determining the impact of cultivar resistance against the rice billbug (*Sphenophorus pertinax* Olivier) in furrow-irrigated rice (*Oryza sativa* L). 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 10, 2025.
- Wilson, B.E. 2025. Optimizing integrated controls for sugarcane stem borers in Louisiana, USA. International IPM Symposium, San Diego, CA. 5 March 2025.
- Wilson, B.E. 2025. Reduced efficacy of insecticidal seed treatments in Louisiana rice. Rice Tech. Working Grp. New Orleans, LA. 19 Feb 2025.
- Musgrove, T.R.T., Villegas J.M., Stout M.J., Bateman, N., Cook, D., Floyd, C., and Wilson B.E. 2025. Determining the impact of cultivar resistance against the rice billbug (*Sphenophorus pertinax* Olivier) in furrow-irrigated rice (*Oryza sativa* L). Rice Tech. Working Grp. New Orleans, LA. 18 Feb 2025.
- Wilson, B.E. 2025. Invasive and emerging invertebrate pests of U.S. rice. Rice Tech. Working Grp. New Orleans, LA. 17 Feb 2025. Invited symposium participant.

FACULTY ACTIVITIES



Planting Sweetpotato at St. Joseph

From left to right, Reuel Pablo, Chancy Sibakwe, Anjana Duwal, and Sara Navarro. Photo by Jeff Davis

- Wilson, B.E. 2025. Enhancing the role of cultivar resistance in sugarcane stem borer IPM. Louisiana Agriculture Tech. and Manag. Conference. Marksville, LA. 13 Feb 2025.
- Wilson, B.E. 2025. Rice stem borer ecology and management: What we've learned in 25 years of research. Louisiana Agriculture Tech. and Manag. Conference. Marksville, LA. 13 Feb 2025.
- Wilson, B.E. 2025. Lessons from a decade of managing Mexican rice borer in Louisiana sugarcane. Amer. Soc. Sugar Cane Tech. LA. Division. Baton Rouge, LA. 5 Feb 2025.
- Musgrove, T.R.T. and B.E. Wilson. 2025. Reduced efficacy of insecticidal seed treatments against rice water weevil. Louisiana Agriculture Tech. and Manag. Conference. Marksville, LA. 13 Feb 2025.

Awards & Honors

- Musgrove, T., 2nd Place, Ph.D. Student 10-min Paper Competition, 97th Annual Meeting of the Entomological Society of America Southeastern Branch Meeting, Baton Rouge LA. March 10, 2025.

Visiting Scholars/students

- Rosa Brizzio (visiting intern)

Graduated Students

- Fall 2025 - Tyler Ray T. Musgrove. Ph.D.

Publications

- Angira, B., A. Famoso, S. Linscombe, R. Zaunbrecher, V. Dartez, M. Kongchum, F. Dalla Lana, C. Webster, and B.E. Wilson. 2025. Registration or 'CLL19' rice.

FACULTY ACTIVITIES



“Get in loser, we’re going to the field”

Abby. Photo by Stephen Baca



Davis Lab ready to harvest Sweetpotato

Left to right, Anjana Duwal, Celeste Mejia Gonzalez, Poorna Munagala, Chancy Sibakwe and Reuel Pablo.

Photo by Jeff Davis

- Villegas, J.M., D.M. Khan, B.E. Wilson, and M.J. Stout. 2025. Impact of planting date on rice water weevil (Coleoptera: Curculionidae) and stemborer (Lepidoptera: Crambidae) infestations in drill seeded rice. *Environ. Entomol.* 54: 828–834.
- Wilson, B.E. and T.M. Musgrove. 2025. The value of insecticidal seed treatments for US rice farmers. *J. Integrated Pest Manag.* 16(1): 13.
- *Doherty, E.M., N. Camano-Flores, Q. Sun, and B.E. Wilson. 2025. Examining factors influencing varietal resistance to *R. dominica* in stored rice. *Crop Prot.* 190: 107087.
- Angira, B., C. Webster, M. Kongchum, F. Dalla Lana, B.E. Wilson, R. Zaunbrecher, V. Dartez, B. Williams, B. Theunissen, and A. Famoso. 2025. Registration of ‘Addi Jo’ rice. *J. Plant Reg.* 19: e20406.
- Angira, B., S. Linscombe, C. Webster, M. Kongchum, F. Dalla Lana, B.E. Wilson, R. Zaunbrecher, V. Dartez, B. Williams, B. Theunissen, and A. Famoso. 2025. Registration of ‘Avant’ rice. *J. Plant Reg.* 19: e20411.

FACULTY ACTIVITIES



Standing over caged remains of decomposing black bear at Idlewild Research Station

From left to right, Alexa Figueroa (Ph.D. Candidate, LSU Chemistry, Musah Lab), Dr. Rabi Musah (LSU Chemistry, Patrick F. Taylor Endowed Chair in Environmental Chemistry), Dr. Stephen Baca, Will Forbes, Research associate coordinator at Bob R. Jones Idlewild Research Station.

The team is sampling the bear and other carcasses for forensically significant species to establish chemical classification data. Collaborative effort with Musah Lab, LSU Entomology (Baca lab) and LSU AgCenter leading field coordination and insect identification.

Photo by Javier Gallegos



Sampling from a bear carcass for forensically significant species

From left to right, Dr. Stephen Baca, Alexa Figueroa (Ph.D. candidate LSU Chemistry, Musah Lab). Collaboration between Baca and Musah Labs. Photo by Paige Jarreau



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