PPCP news

LSU AgCenter
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LSU
College of Agriculture

January 2024

Department of Plant Pathology and Crop Physiology

FROM THE DEPARTMENT HEAD

Lawrence E. Datnoff

Happy 2024!

The department is doing well, and we are still going through several personnel changes. Dr. Jeff Hoy retired in August, and the newly hired sugarcane pathologist is Dr. André Gama. Another new hire for the department was in plant immunity, and Dr. Chien-Yu Huang started in May.

Last year, faculty and students published several refereed manuscripts and extension articles; gave many presentations, locally, regionally, nationally and internationally; and competed for grants to support their research and outreach. They also won prestigious recognition for their efforts that include the LSU AgCenter's G&H Seed Research Excellence Award (**Jong Ham**), the American Horticultural Society's HortScholar Award (**Hamilton Crockett**), and the inaugural Schneider Student Travel Fund Award (**David Galo**). Our M.S. and Ph.D. graduate students were highly engaged, and their efforts and outstanding contributions continue to

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LSU AGCENTER'S PPCP AND GLOBAL NETWORKS VISIT THE UNIVERSIDADE FEDERAL DE VICOSA, BRAZIL

LSU AgCenter personnel meet with faculty from the Universidade Federal de Vicosa during a March trip to UFV in Brazil.

Drs. Wade Baumgartner, Lawrence E. Datnoff and Jonathan Richards along with Rocio Lopez and Jacob Searight from the Department of Plant Pathology and Crop Physiology (PPCP) and Global Networks visited the Phytopathology Graduate Program (PPG) at the Universidade Federal de Vicosa (UFV) in Brazil from March 27-30. They went to UFV to strengthen the memorandum of understanding which was first signed between the Department of Phytopathology at UFV and PPCP in February 2009. During the time that this memorandum has been in place, 10 UFV-PPG students have either completed internships or M.S./Ph.D. programs in the PPCP department.

The group was hosted by Dr. Fabrício A. Rodrigues, who completed his Ph.D. with Datnoff. While there, Datnoff provided an overview of the PPCP department's academic and professional accomplishments along with current research programs of excellence. Richards and Searight provided seminars on their current research entitled "A genetic and genomic approach to clone the major narrow brown leaf spot resistance gene CRSP2.1 in rice" and "Exploring

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infuse the department with vitality and enthusiasm, while helping to answer basic scientific questions along with solving plant disease problems of importance to the clientele of Louisiana.

In this current newsletter, you'll see for yourself these wonderful activities and achievements of our faculty, postdocs and students and their profound effects on the University and AgCenter's missions, Louisiana agriculture and beyond.

Happy Reading!

Continued from Page 1 | Department of PPCP and Global Networks visit the Universidade Federal de Vicosa, Brazil

the population structure, genome evolution, and virulence mechanisms of *Cercospora janseana* on rice," respectively. Baumgartner and Lopez explored research opportunities with the graduate programs in animal and equine sciences as well as the possibility of UFV participating in the LSU AgCenter's International Summer School or other student exchange opportunities. In addition, the group also had the opportunity to visit the plant diagnostic lab, field research plots, greenhouse complexes and other university support services including UFV International programs.

Jonathan Richards presents his research during a seminar at the Universidade Federal de Vicosa in Brazil.

Another important purpose of this trip to UFV was to arrange for Searight to conduct a portion of his Ph.D. research at the Plant-Pathogen Interaction Laboratory under the guidance of Rodrigues. He studied the infection process of *C. janseana* on rice. Resistance to infection in rice leaves and sheaths appears to function by different mechanisms and a thorough characterization of the pathogen infection biology has not been previously conducted. Through this exchange, Rodrigues shared his world-renowned expertise in scanning electron microscopy which led to fundamental discoveries related to host-pathogen interactions in this economically important pathosystem. Additionally, this research translated into improved management tactics to utilize host resistance and develop novel control targets more effectively. This was the first time in the history of the PPCP department to have a Ph.D. student conduct a portion of their research overseas and the first time in the history of UFV to receive an American Ph.D. student to do so. Finally, an exchange that was reciprocal and, clearly, a historic moment for both institutions.

Jacob Searight presents a portion of his Ph.D. research at the Universidade Federal de Vicosa in Brazil.

VISITING STUDENT SCHOLARS, POSTDOCTORATES AND SCIENTIST

Student Scholars

Francisco Calix is from Honduras and received his undergraduate degree from Universidad Nacional de Agricultura in Honduras. He completed an internship in **Dr. Tristan Watson**'s nematology laboratory from June to August 2023. Calix worked on monitoring nematicide efficacy field trials on cotton.

Dr. Zhi-yuan Chen hosted an intern Ph.D. student, **Henry Bueso Castro**, from Universidade Federal de Lavras, Brazil. Castro has worked in Chen's breeding effort to produce homozygous transgenic maize lines with enhanced aflatoxin resistance. He also has helped with pollinating, harvesting and processing for aflatoxin analysis.

Gustavo Escobar, a visiting scholar from the Zamorano Pan-American Agricultural School, Francisco Morazán, Honduras, visited **Dr. Ely Oliveira-Garcia**'s laboratory from August to November 2023. During his visit, Escobar was involved in enhancing rice resistance to blast disease through various molecular approaches. He helped to functionally characterize effector genes of *Magnaporthe oryzae*. He worked with Oliveira-Garcia, and undergraduate student Allison Jane Hamilton to learn various techniques in the fields of microbiology and molecular biology, such as cloning and microbial transformation.

Natalia Freitas is from Brazil and received her undergraduate degree from the Federal University of Uberlândia and is now working on her Master of Science degree in nanotechnology from the same institution. She is currently completing an internship in **Dr. Tristan Watson**'s nematology laboratory since November 2023. Freitas is working on monitoring nematode population dynamics in a sugarcane field and establishing various greenhouse trials.

Karla Guardado is from Honduras and received her undergraduate degree from Universidad Nacional de Agricultura in Honduras. She completed an internship in **Dr. Tristan Watson**'s nematology laboratory from June to November 2023. Guardado worked on evaluating new nematode resistant cotton cultivars for nematode management in Louisiana.

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HELP US TO ENSURE EXCELLENCE IN PLANT PATHOLOGY AND CROP PHYSIOLOGY

While the department receives monetary support for core research/extension programs (LSU AgCenter) and its teaching program (LSU College of Agriculture), these funds are not sufficient to provide the resources to move our programs to the next level of performance.

Private financial support is becoming a vital resource to enhance existing programs and begin new initiatives. Please consider contributing to help support our programs.

You may help to support the Plant Pathology and Crop Physiology Department by donating to one of the below listed funds:

#106098 – The Max and Leah Cohn Invited Lecture Endowment Fund
#100250 – Plant Pathology and Crop Physiology Excellence Fund
#100246 – Dr. C.W. Edgerton Memorial Fund
#100247 – Dr. Weston J. Martin Fellowship Fund
#105458 – M.C. "Chuck" Rush Plant Pathology Teaching Laboratory Fund
#106771 – Raymond W. Schneider Student Travel Fund
#104814 – Don Ferrin Student Teaching Fund

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:

Department of Plant Pathology
and Crop Physiology
302 Life Sciences Building
LSU Campus
Baton Rouge, LA 70803

For more information contact: Lawrence E. Datnoff
Professor and Department Head
ldatnoff@agcenter.lsu.edu
or 225-578-1366

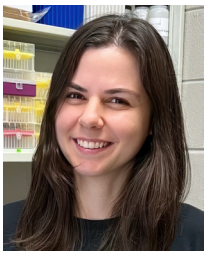
Daneri Herrera, a visiting scholar from the Universidad Nacional de Agricultura, Honduras, visited **Dr. Ely Oliveira-Garcia**'s laboratory from April to October 2023. During his visit, Herrera was involved in the development of biological control strategies against aflatoxin contamination in corn. He also took an active part in assessing the population structure of *Fusarium* species associated with Fusarium head blight on wheat in Louisiana. His research will help the development of new wheat varieties resistant to a broad spectrum of *Fusarium* species.

Jarrett Kirby, an undergraduate student from Southern University majoring in urban forestry, interned in **Dr. Sara Thomas-Sharma**'s Field Crop Pathology Lab in fall 2023. He worked under the supervision of **Stephanie Ramos** assisting in a project to study variability of fungicide resistance in soybean.

Kateřina Kuchaříková, from Mendel University, Brno, Czech Republic, received a certificate of completion from **Dr. Raj Singh**. She, along with **Amanda Piris**, from Federal University of Mato Grosso, Brazil, interned in the Plant Diagnostic Center with Singh to learn skills necessary to diagnose plant health problems of ornamental plants, turf, vegetables, fruits, nuts, field crops and other specialty crops caused by various abiotic and biotic stresses. They then used specialized conventional and modern molecular methods to diagnose problems caused by specific plant pathogens that included fungi, bacteria and viruses.

Cira Rivera is from Honduras and received her undergraduate degree from Universidad Nacional de Agricultura in Honduras. She is currently completing an internship in **Dr. Tristan Watson**'s nematology laboratory since November 2023. Rivera is assisting with characterizing root-knot nematode resistance in sweet potato.

Postdoctorates



Dr. Beatriz Carvalho is a post-doctoral researcher in the laboratory of **Dr. Sara Thomas-Sharma**. Her research project will focus on the role of lipid droplets in the infection of soybean by the pathogens that cause Cercospora leaf blight to develop better tools for disease management.

Carvalho received her B.S. degree in agronomy and her M.S. and Ph.D. in plant production with a specialization in plant pathology/breeding from the Universidade Estadual do Norte Fluminense Darcy Ribeiro, Rio de Janeiro, Brazil. She studied the genetic resistance to fungal and viral diseases in tropical fruit trees.

Dr. Jose Cortes is a post-doctoral researcher in the laboratory of **Dr. Jong Ham**. His research project focuses on finding resistance against bacterial panicle blight and sheath blight in rice. In addition, he is also evaluating the effectiveness of rice seed priming against these rice diseases. Cortes received his M.S in biological science from Universidad Nacional de Colombia and his Ph.D. in plant pathology and crop physiology from LSU under the guidance of **Dr. Jeff Hoy**.

Dr. Pedro Santos started as a post-doctoral researcher in the laboratories of **Drs. Doyle, Richards** and **Thomas-Sharma**. His research project will focus on host adaptation and infection biology of Cercospora leaf blight fungal pathogens using large genomics datasets. Santos received his B.S. degree in agricultural engineering from the Universidade Estadual do Norte Fluminense Darcy Ribeiro and a Ph.D. in plant production with a specialization in plant health from the same institution. His research focused on molecular phylogeny and phylogeography, population genetics, and bioinformatics. He used these research approaches to unravel plant species' genetic evolution, distribution and dynamics that will hopefully advance biodiversity conservation as well as sustainable agriculture.

Scientist

Dr. Marco Gonçalves, a researcher at the Biological Institute in Sao Paulo, Brazil, studied the interactions between green bug aphid and Maize dwarf mosaic from May 1 to July 31 with **Dr. Raj Singh**. This research project was part of the climate smart agriculture and food systems research funded by U.S. Department of Agriculture Scientific Exchanges Fellowship Program.

Graduate Student Updates

2023 GRADUATES

Ph.D. Degree

Jose Cortes

Development of functional markers for resistance to smut and identification of genes differentially expressed in response to brown rust in sugarcane, advised by **Dr. Jeff Hoy**.

Waana Kaluwasha

Wound healing of sweetpotato storage roots in relation to variables that affect susceptibility to Rhizopus soft rot and its potential for disease management, advised by **Drs. Chris Clark and Imana Power.**

M.S. Degree

Hamilton Crockett

Molecular identification of Oomycete species associated with woody plants in Louisiana and survey of Oomycete species associated with live oak trees planted on the Louisiana State University Campus, advised by **Dr. Raj Singh**.

Gabriel Munoz Herrera

Genetic characterization of resistance to frogeye leaf spot of soybean, advised by **Dr. Jonathan Richards**.

APS ANNUAL MEETING: PLANT HEALTH 2023

Response of sweetpotato breeding lines to *Meloidogyne enterolobii* and *M. incognita* parasitism, presented by **David Galo**.

The American Phytopathological Society Plant Health meeting was held Aug. 12-16 in Denver, Colorado. This year's theme was "LINKS to a Sustainable Future." Many networking activities were available, and several PPCP students, postdocs and faculty attended and provided poster and oral presentations.

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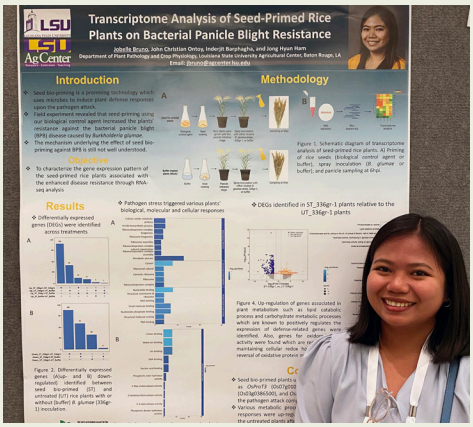
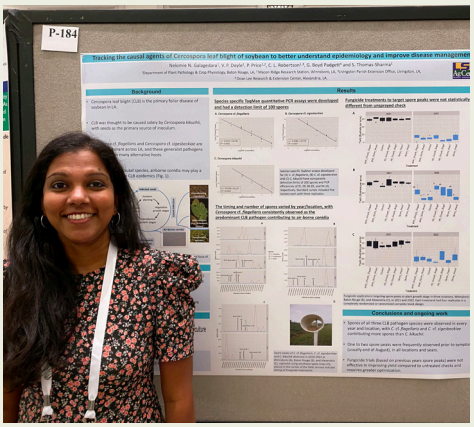
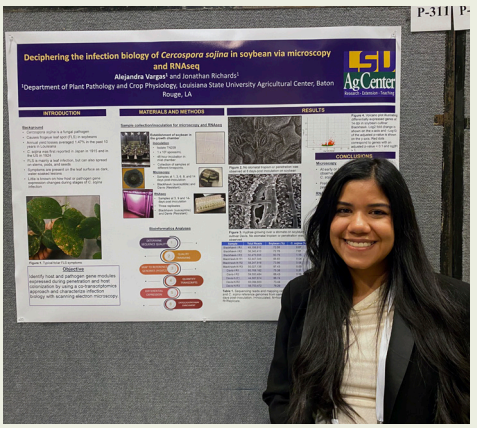


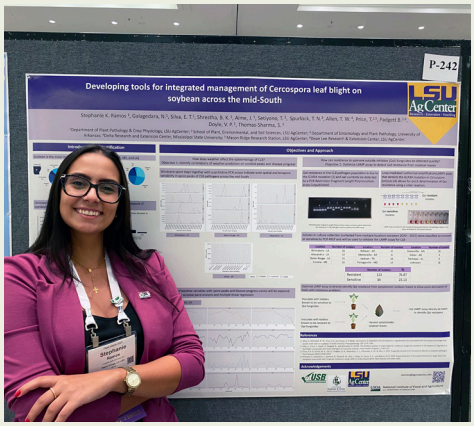
Transcriptome analysis of seed-primed rice plants on bacterial panicle blight resistance, presented by **Jobelle Bruno**.



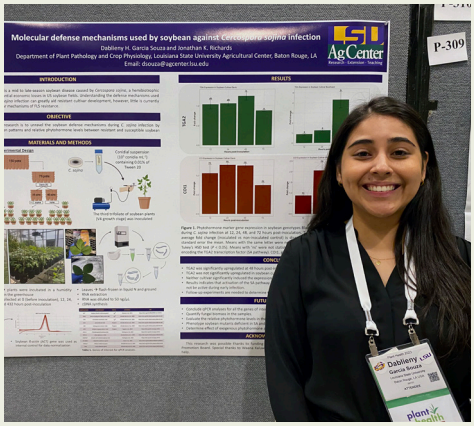
Tracking the causal agents of Cercospora leaf blight of soybean to better understand epidemiology and improve disease management, presented by **Nelomie Galagedara**.



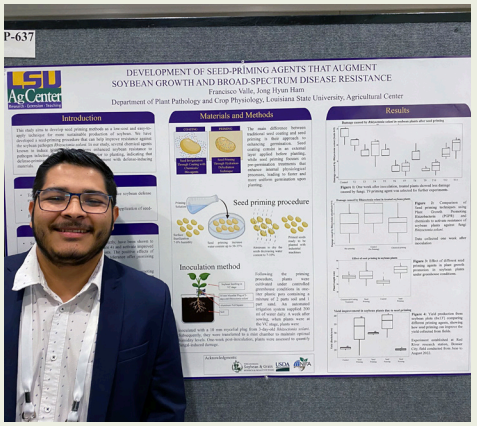
Deciphering the infection biology of *Cercospora sojina* in soybean via microscopy and RNAseq, presented by **Alejandra Vargas**.



Developing tools for integrated management of Cercospora leaf blight on soybean across the mid-South, presented by **Stephanie Ramos**.



Molecular defense mechanisms used by soybean against *Cercospora sojina* infection, presented by **Dablieny Souza**.



Development of seed-priming agents that augment soybean growth and broad-spectrum disease resistance, presented by **Francisco Valle**.

PPCP students, postdocs and faculty attend the University Alumni Networking Event.

GRADUATE STUDENT AWARDS AND HONORS

Galagedara and Galo win LACA Scholarships

The Louisiana Agricultural Consultants Association (LACA) awarded **Nelomie Galagedara** and **David Galo** a $2,000 scholarship plus a Certificate of Excellence at its annual meeting in Marksville in 2023. Both were recognized for their academic achievements and performance in agriculture studies. Galagedara and Galo are each pursuing a Ph.D. under the direction of **Drs. Sara Thomas-Sharma** and **Tristan Watson**, respectively.

PPCP students selected to participate in Science Communication Workshop

Bernard Budot, **Ernesto da Silva**, **Waana Kaluwasha**, **Stephanie Ramos**, **Francisco Valle** and **Chenie Zamora** were selected to participate in a new exciting professional development opportunity recently launched by the LSU College of Agriculture.

The LSU College of Agriculture partnered with the LSU Office of Communication and University Relations to host a free Science Communication Workshop during the week of spring break. This professional development opportunity allowed emerging researchers to develop their skill sets and practice communicating their research to a non-scientific audience.

Kaluwasha receives PPCP student fund support award

Waana Kaluwasha, advised by **Drs. Chris Clark** and **Imana Power**, earned the Cal Agri Products Award. Selection for this award was based on the academic standing (GPA), significance of the research and, less importantly, nearness to completion of the degree.

Crockett selected as a 2023 HortScholar

Hamilton Crockett, an M.S. student advised by **Dr. Raj Singh**, was selected as a 2023 HortScholar to participate in Cultivate 23. Cultivate has been the American Horticulture (AmericanHort) Association industry's premier event for almost 100 years and was held July 12-19 in Columbus, Ohio. The AmericanHort Scholars program sets students on a path to success by exposing them to the breadth of the horticulture industry by providing opportunities to network with industry leaders, present on a horticultural topic of choice while participating in the conference. The program offers a beyond-the-classroom experience, giving insight and awareness of the industry, its supply chain and where the scholars might find a home for their passion. The focus of the program is on professional development, including attending educational sessions, networking, and working with industry mentors. Finally, AmericanHort provides winners complementary meal, lodging, an all-access pass to Cultivate and a complimentary one-year student membership.

Galagedara and Ramos selected to attend APS-OPSR

Nelomie Galagedara and **Stephanie Ramos**, advised by **Dr. Sara Thomas-Sharma**, were two of 15 plant pathology students selected nationwide to participate in the American Phytopathological Society's (APS) Office of Private Sector Relations (OPSR) hosted Industry Tour in Northern California from June 6-8. The purpose of this tour was for students to be able to engage with industry professionals and learn how organizations in the private and not-for-profit sectors operate, as well as the career opportunities available to those with a plant pathology background. Students were exposed to different career paths in several segments of plant science-related jobs, including biotechnology, crop protection, field sciences, discovery research, plant health regulations, plant breeding and genetics, and consulting.

The first day started at the California Department of Pesticide Regulation in downtown Sacramento. Students spent the morning learning about the department's goals to register and regulate pesticides, along with all the processes involved in the rigorous scientific evaluations of a product to be registered. In the afternoon, participants visited Bayer Crop Science at the Woodland California Vegetables Research and Development site to learn about their research structure used to develop vegetable varieties. In the last portion of the visit, Dr. Susan Van Tuyl organized a panel with Bayer employees who provided their insights about career development and job opportunities in the industry.

On the second day of the tour, students visited the Corteva Agriscience site at the Woodland Research and Development

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APS-OPSR participants visiting a grape farm in Lodi, California.

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Center, where they gained hands-on field experience in agricultural field trials and cutting-edge technologies applied to data collection in both specialty and row crops. During the afternoon, the group visited Pivot Bio, a biotechnology company located in Berkeley, California. During the visit, Shayin Gottlieb provided an overview of their technology to replace synthetic nitrogen fertilizer using microorganisms.

The final day of the tour was dedicated to exploring two of the major commodities in California: strawberries and grapes. In the morning, the group visited Driscoll's headquarters in Watsonville, hosted by plant pathologist and OPSR member Dr. Kelly Ivors. The students enjoyed a full tour around the facility, gaining knowledge in the advancement of technologies for disease management and plant diagnostics in berries.

The last stop was in Lodi, California, at a grape wine farm, hosted by Steve Quashnick, a viticulturist and pest control adviser with Wilbur-Ellis. Quashnick highlighted the pest management strategies and nutrition best practices grape growers are adopting in California for wine production. At the end of the visit, the participants were able to enjoy a complimentary wine tasting hosted by the Michael David Winery.

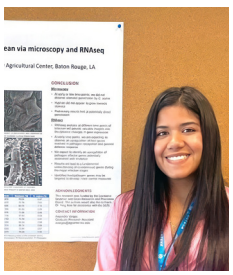
During this three-day tour, students were very engaged, asked thought-provoking questions and demonstrated their curiosity and willingness to build on their knowledge in plant science. Overall, the feedback received from participants was very positive. Students were appreciative of the exposure to several areas of research, network- and collaboration-building opportunities, and different career paths in plant sciences.

Da Silva received the Salomon Bartnick-Garcia Research Award

Ernesto da Silva, a Ph.D. student advised by **Dr. Vinson Doyle**, was awarded the Salomon Bartnicki-Garcia Research Award from the Mycological Society of America (MSA). The purpose of this award is to acknowledge Dr. Salomon Bartnicki-Garcia's outstanding contributions to fungal cell biology and to inspire young mycologists working in the fields of biochemistry, genetics and cell biology to participate in MSA. Having dedicated over four decades to research in these areas, Bartnicki-Garcia has significantly advanced our understanding of the fungal cell and has had a profound impact on the careers of many scientists.

Galo and Valle selected to participate in Corteva's DELTA program

David Galo (left), a Ph.D. candidate advised by **Dr. Tristan Watson**, and **Francisco Valle** (right), an M.S. candidate advised by **Dr. Jong Ham**, were selected to participate in Corteva's Developing Emerging Leaders and Talent in Agriculture (DELTA) program in April. This opportunity allowed them to participate in a research and development symposium, which provided a technical overview of the company, a chance to network and share their research, as well as develop soft skills that are essential for any industry career.

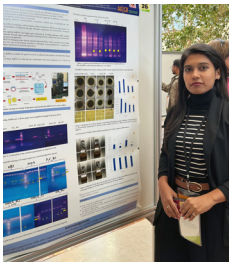


Vargas wins Outstanding Poster at the Corteva DELTA Symposium

Alejandra Vargas, an M.S. student advised by **Dr. Jonathan Richards**, participated in the Corteva DELTA Symposium in August and won Outstanding Poster at the poster session. She was selected to participate in Corteva's Developing Emerging Leaders and Talent in Agriculture (DELTA) program.

Da Silva wins the Ferrin Teaching Award

Ernesto da Silva won the Don Ferrin Student Teaching Award. This award was established by Pam Ferrin in 2013 to support PPCP graduate student education in honor of her husband, Dr. Don Ferrin, and selection is based on academic/research efforts. Da Silva is pursuing his Ph.D. under the direction of **Dr. Vinson Doyle.** *Photo: Dr. Vinson Doyle, left, and Ernesto da Silva.*



Mita wins first place in the AAGB student poster competition

Mamuna Mita, a Ph.D. student advised by **Dr. Zhi-yuan Chen**, received first place in the student poster competition at the 12th International Conference of the Peanut Research Community on Advances in Arachis through Genomics and Biotechnology (AAGB) held Oct. 16-19 in Huntsville, Alabama. Her poster was entitled "Towards deployment of dsRNA for potential management of aflatoxin contamination in peanut."

Ontoy receives the prestigious C.W. Edgerton Award

John Ontoy, a Ph.D. student advised by **Dr. Jong Ham**, received the prestigious C.W. Edgerton Award at the departmental holiday gathering. He won this award for his outstanding academic and professional achievements, especially his significant contributions towards understanding the rice genes involved in the disease resistance towards bacterial panicle blight and sheath blight.

Dr. C.W. Edgerton began his career as a plant pathologist at the Louisiana State Experiment Station, then rose to professor and department head of botany, bacteriology and plant pathology in 1924 and held this position until he retired in 1950. During that time his productivity in

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research was truly remarkable. He had a profound influence on his many graduate students. He also had a unique ability to stimulate and challenge students and to transmit his enthusiasm, dedication and zeal for excellence to his associates. For these reasons, Edgeton's sisters created this award to honor him by recognizing the outstanding performances of students who are in their last year of their M.S. or Ph.D. degree program.

Galo wins the inaugural Schneider Travel Award

David Galo, a Ph.D. student advised by **Dr. Tristan Watson**, won the inaugural Raymond W. Schneider Travel Award, in recognition of outstanding performance as a graduate student in plant pathology. The family of Dr. Raymond W. Schneider established this fund in his honor to support travel by students in the Department of Plant Pathology and Crop Physiology. Schneider was a strong supporter of graduate students having the opportunity to network with other plant pathology faculty and students from academia and to gain exposure to the nature and diversity of agricultural industries. Galo will use these funds to help him attend the upcoming joint meeting between the Organization of Nematologists of Tropical America and the Brazilian Nematological Society in Iguazu Falls, Brazil. He will present his research on sweet potato resistance to guava root-knot nematode.

Souza, Searight and da Silva win poster competition at the Corteva Plant Symposium

Both **Dablieny Garcia Souza** and **Jacob Searight**, advised by **Dr. Jonathan Richards**, won third place in the poster competition while **Ernesto da Silva**, advised by **Dr. Vinson Doyle**, won second place for the Crop Protection and Physiology Poster Section. This poster competition was held at the first Plant Science Symposium, LSU sponsored by Corteva Agriscience and several local Louisiana industries including the American Society Sugar Cane Technologists, American Sugarcane League, John Deere, Louisiana Sweet Potato Commission, Progressive Tractor Implement and Oxbow Rum Distillery. Graduate students also participated from other schools including the University of Florida and Kansas State University.

Graduate students from the Department of Plant Pathology and Crop Physiology and the School of Plant, Soils and Environmental Sciences hosted this event dedicated to all areas of crop improvement. They gathered top scientists from many universities and industry from all over the country to discuss the future of agricultural research, the importance of networking and other professional advice. The scientists included Dr. Tyler Thornton, research scientist, Corteva Agriscience; Dr. Rex Bernardo, statistical geneticist, University of Minnesota; Dr. Jonathan Lynch, plant physiologist, Pennsylvania State University; Dr. Esther Ngumbi, entomologist, University of Illinois Urbana-Champaign; Dr. Nicole Donofrio, plant pathologist, University of Delaware; and Roberto Fritsche-Neto, quantitative geneticist, LSU.

In addition, the following Ph.D. students had the opportunity to orally present their research findings: **Jobelle Bruno**, Department of Plant Pathology and Crop Physiology, advised by **Dr. Jong Ham**; Noe Perron, Department of Plant Molecular and Cellular Biology, University of Florida; and Aashvi Dua, Department of Digital Agriculture, Kansas State University.

(Top) Ernesto da Silva, from left, Dablieny Garcia Souza and Jacob Searight hold their best poster presentation certificates. (Bottom) Jobelle Bruno presents her research entitled "Seed-biopriming for induced resistance against rice diseases."

GRADUATE STUDENT ACTIVITIES

PPCP graduate students provide information on the field of plant pathology and research opportunities for LSU undergraduates.

PPCP graduate students promote plant pathology at LSU undergraduate fair

The LSU undergraduate research information fair took place during fall welcome week. The aim of the event was to have undergraduate students learn about the different research opportunities in various departments at LSU by interacting with faculty, graduate students and even fellow undergraduate students from the respective departments.

Dr. David Geiser, fourth from right, with PPCP students.

Geiser invited as PPCP-GSA speaker

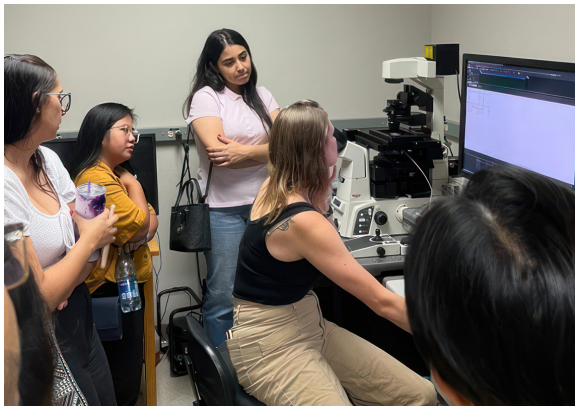
The Plant Pathology and Crop Physiology-Graduate Student Association (PPCP-GSA) has the opportunity every year to invite a scientist of their choice as a spring seminar speaker so they may learn more about their research and professional experiences. This year, **Dr. David Geiser**, professor of mycology, Department of Plant Pathology and Environmental Microbiology and Director of the Fusarium Research Center at Pennsylvania State University, was invited to visit the department from April 4-6. Geiser has been researching *Fusarium*, focusing on species and population diversity using sequence data and genomics. He teaches mycology and is an International Fusarium Laboratory Workshop instructor. While here, Geiser presented a seminar entitled, "*Fusarium oxysporum*: Is It Finally Starting to Make Sense?"

Among the many activities, graduate students had the opportunity to connect one-on-one with Geiser to discuss research, graduate school and other professional experiences. The group also enjoyed a potluck dinner together and even found time to visit the AgCenter's Burden Museum and Gardens.

Dr. Van Bael, sitting fourth on left, with PPCP students.

Van Bael meets with GSA-PPCP

PPCP graduate students enjoyed lunch and a round table discussion with **Dr. Sunshine Van Bael**, center left, from Tulane University. She gave a seminar entitled "Plant-Microbe Interactions Along the Coast: Challenges Under Increasing Anthropogenic and Environmental Pressures."



PPCP-GSA visit Corteva Agriscience and University of Arkansas

The Plant Pathology and Crop Physiology-Graduate Student Association (PPCP-GSA) had their 2023 scientific educational tour to the headquarters of Corteva Agriscience in Indianapolis, Indiana, and the Department of Entomology and Plant Pathology (ENPL), University of Arkansas in Fayetteville. They visited these two organizations to broaden their professional network and to learn about future employment opportunities with industry and academy.

During their visit to Corteva Agriscience, they interacted with a multidisciplinary team of scientists working on different research areas with the objective of developing new products for plant protection that fulfill the growers' and consumers' needs. From molecule discoveries to product release,

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Continued from Page 10| Graduate Student Activities

they were able to learn about the developmental stages involved during the product's life cycle.

Moreover, to learn more about the role of a scientist at Corteva, they participated in a career panel and learned about the day-to-day activities of a plant pathologist and the future job opportunities with the company. They had an excellent learning experience and gained valuable insights into the industry's work environment. Many thanks were given by the PPCP-GSA group to Drs. Bruna Forcelini and Luis da Cunha for organizing their visit to Corteva.

On the way back to Baton Rouge, the PPCP-GSA group visited ENPL where Drs. Jim Correll and Ken Korth, department head, along with the ENPL graduate students organized a few activities for them. They kicked off their visit by having a pizza dinner with ENPL graduate students. The next day, they visited laboratories and greenhouses where each professor/lab member explained their ongoing research projects. The PPCP-GSA students learned that Arkansas agriculture has several similarities with Louisiana agriculture, and several collaborations are currently ongoing between faculty at both universities.

Photos: (Page 10) Audra Rogers, a Ph.D. student, explains the infection process of *Magnaporthe oryzae* on rice observed via fluorescence microscopy. (Above) PPCP-GSA students learning about hemp and some common diseases affecting its production in Arkansas.

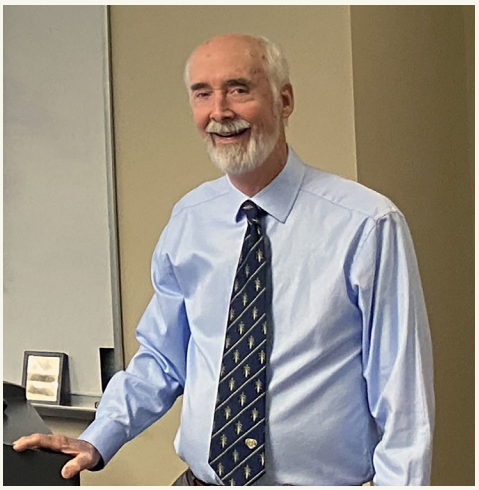
Faculty Updates

DR. JEFF HOY RETIRES FROM LSU AGCENTER

Dr. Jeff Hoy conducted research and extension on diseases of sugarcane for 39 years. His mission-oriented program was an essential component of a comprehensive research program in the LSU AgCenter to support the economically important sugarcane industry. His insightful research and strong cooperation with other researchers, industry representatives and regulatory agencies resulted in successful management of a diverse complex of diseases affecting sugarcane in Louisiana.

As with many crops, the complex of diseases affecting sugarcane has not been static. Over the last 39 years, it was necessary for Hoy to assess the degree of threat then conceive and implement appropriate responses to four new disease incursions from smut, leaf scald, yellow leaf and orange rust and the resurgence of two others, brown rust and mosaic.

Diseases of sugarcane are managed mainly through varietal resistance and healthy seed-cane for planting. One of Hoy's primary responsibilities was therefore to develop disease resistant varieties. Yield potential has steadily increased, doubling in the last 50 years, and disease resistance has contributed to this success. Resistance evaluation methods were established for the various diseases employing both inoculation and natural infection. In cooperative research,



Dr. Jeff Hoy provides his final departmental seminar entitled "Adventures of a Commodity Pathologist."

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the molecular basis of resistance has been determined, and molecular markers are under development for multiple diseases

However, strict variety selection for resistance to multiple diseases reduces the pool of clones available to find ones that will advance the all-important trait of increased yield potential under the challenging production conditions in Louisiana. Hoy recognized that diseases of sugarcane behave differently under temperate conditions in Louisiana and that epidemiology research was very important. For example, it was determined that explosive increase of smut does not occur under Louisiana conditions. This knowledge provided the confidence to release varieties with high yield potential but some susceptibility to smut. This was made possible by the concurrent development of an effective healthy seed-cane program based on tissue culture. The regular introduction of healthy seed-cane now prevents smut and other systemic diseases, including leaf scald and yellow leaf, from building up to damaging levels in moderately susceptible, high yielding varieties.

Industry access to healthy seed-cane produced through tissue culture was accomplished through a public and private sector partnership. A crucial component was the establishment by Hoy of the Sugarcane Disease Detection Lab (SDDL). The SDDL annually provides healthy plant material of potential new varieties for two commercial seed-cane companies. The SDDL then provides disease monitoring during the increase of certified seed-cane. These efforts have a dramatic effect on ratoon stunt, which for many years was the most important disease in Louisiana reducing productivity and profitability. This disease has been reduced to very low incidence and no longer has direct economic impact.

The more frequent occurrence of mild winters led to the emergence of brown rust as a serious problem. The adaptability of the pathogen resulted in the breakdown of resistance when varieties began to be cultivated on major acreage. Therefore, it was necessary to develop an alternative control program utilizing fungicides. Epidemiology research led to the development of best management practices, and this was coupled to effective methods to provide information to the clientele. As a result, susceptible varieties with high yield potential have been successfully cultivated. Resistance continued to be the focus of cooperative research with the goal of developing molecular markers for developing varieties with effective, durable quantitative resistance.

Root diseases also have an impact on sugarcane productivity, and this was another research focus for Hoy. The roles of soilborne pathogens, including *Pythium* and nematodes, were determined through cooperative research. The systematics of the genus *Pythium* was investigated, and the first evidence was obtained showing variation in the internal transcribed spacer region of ribosomal DNA is informative at the species level in *Pythium*.

It has been demonstrated that monoculture of sugarcane results in reduced yields. The effects of the known soilborne pathogens do not explain the reduced growth resulting from long-term continuous cultivation. Therefore, cooperative research was conducted to evaluate the effects of monoculture on the rhizosphere microbial community through paired-site studies comparing old and new sugarcane fields. The results suggested that changes in the fungal community are associated with reduced growth potential resulting from monoculture.

The Louisiana sugarcane industry switched harvesting systems during the 1990s to chopper-type harvesters. This change created intense interest in switching from planting whole stalks to stalk sections called billets. The advantage of whole stalk planting is that planted cane is able to sustain damage from stalk rots and adverse winter environmental conditions and still produce an adequate stand the next spring. Hoy determined that billets are more susceptible than whole stalks to many problems and can be at risk of a stand failure. He led a high priority research project to develop integrated methods to improve the reliability of billet planting.

Interactions with the Louisiana Department of Agriculture and Forestry and U.S. Department of Agriculture-Animal and Plant Health Inspection Service-Plant Protection and Quarantine were an essential component of effective disease management and a key activity for Hoy. He played a leadership role in development of a disease and pest incursion response plan, regulations for seed-cane certification, regulations for interstate movement of sugarcane and, most recently, importation of true seed. He provided inspector training and disease monitoring. He was a consultant on plant introduction questions, and he was the lead scientist at the LSU AgCenter for the initial response to the incursion of sudden oak death.

Hoy was productive in research funding and publishing. He obtained more than $2 million to support his program. He produced 85 refereed publications and 150 non-refereed publications while at LSU. He was active in graduate education serving as the major professor for five Ph.D. and 11 M.S. students, serving on numerous graduate committees and teaching epidemiology and crop loss assessment. Hoy was active in professional societies serving the American Society of Sugar Cane Technologists as managing editor for the journal (converting it to an online format), councilor to the International Society of Sugar Cane Technologists and President of the society. He received the LSU AgCenter's Doyle Chambers Research Award as well as the Edmiston Professorship based on his academic and professional achievements and was part of the Tipton Team Research Award twice.

NEW FACULTY HIRES

Huang hired as assistant professor of plant immunity

Dr. Chien-Yu Huang started as an assistant professor, with an appointment of 75% research and 25% teaching, in the Department of Plant Pathology and Crop Physiology on May 1. Her research will focus on developing an innovative and fundamental program on molecular plant immunity and biotic stress.

She obtained her M.S. in mycology from the National Taiwan University, Taiwan, where she worked with Dr. Ruey-Fen Liou on the role of mitogen-activated protein kinases in the virulence of *Phytophthora parasitica*, a broad-host range plant pathogen. She received her Ph.D. in plant biology from the University of California, Riverside, under the guidance of Dr. Anthony Huang, where she studied the structure, function and evolution of oleosin and subcellular lipid droplets in primitive and advanced plants as well as engineering of oleosin-coated lipid droplets to enhance plant lipid production. As a postdoctoral research associate with Dr. Hailing Jin at the Department of Microbiology and Plant Pathology of the UC Riverside, she worked on epigenetic regulation of chromatin remodeling and small RNA biogenesis during disease resistance response in model plants. The research rationale and outcomes were applied to citrus huanglongbing and potato zebra chip management. Her research focused on understating the mechanism of gene reprogramming of plant immunity and developing molecular tools for disease management and diagnosis. Her research will aim to delineate the plant defense mechanism and develop effective and environmentally friendly strategies for crop disease management and improvement of crop yields.

Gama hired as new sugarcane pathologist

Dr. Andre Bueno Gama started at the LSU AgCenter as an assistant professor, with an appointment of 70% research, 20% extension and 10% teaching, in the Department of Plant Pathology and Crop Physiology on Aug. 1. His research program will focus on the management, epidemiology and etiology of sugarcane diseases in Louisiana by testing new disease management approaches, aiding in clean plant production, studying different aspects of plant disease epidemics and assisting in the sugarcane breeding program.

Gama obtained his bachelor's and M.S. in plant pathology from the University of São Paulo, Brazil. His master's studies were under the guidance of Dr. Lilian Amorim and focused on developing a web platform that informed citrus growers of the best time to manage postbloom fruit drop of citrus in the field. In 2021, he received his Ph.D. in plant pathology from the University of Florida, under the guidance of Drs. Megan M. Dewdney and Natalia Peres, where he studied the epidemics of strawberry and citrus diseases caused by *Colletotrichum* species, helped develop plant disease alert systems and tested leaf wetness duration models used in those disease alert systems. As a postdoctoral research associate with Peres, he studied the epidemiology of strawberry fruit rot and leaf spot caused by *Neopestalotiopsis* sp., testing the susceptibility of cultivars and advanced lines and the efficacy of several fungicides against the disease. After his postdoc, he worked for Invaio Sciences Inc. as a field scientist, conducting several trials on citrus farms in Florida. His research focused on the epidemiology of sugarcane, strawberry, citrus and blueberry fungal diseases, developing, and testing epidemiological models as well as different management approaches to improve plant disease management.

FACULTY HONORS AND AWARDS

Chen awarded American Cyanamid Professorship

Dr. Zhi-yuan Chen was awarded the American Cyanamid Professorship in Plant Biotechnology, Molecular Biology and Crop Pest Management. This professorship was established to recognize the outstanding research accomplishments of a faculty member within the Louisiana Agricultural Experiment Station who has demonstrated excellence in the application of biotechnology to improve the competitive advantage of major agronomic or horticultural crops.

Chen's novel research has focused on using proteomics, genomics, transgenics and RNA interference to reduce *Aspergillus flavus* infection and aflatoxin contamination in corn, as well as *Phakopsora pachyrhizi* (causal agent of soybean rust) and *Cercospora cf. flagellaris* (causal agent of Cercorpora leaf blight and purple seed stain) infection in soybean. His creative and original research has not only significantly enhanced our understanding of host-pathogen interactions, but also has facilitated the development of host resistance against these pathogens of corn and soybean, respectively.

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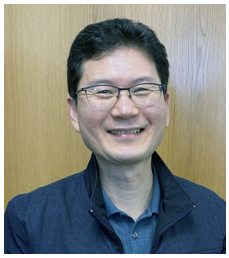
Doyle and Richards win the LSU AgCenter's Tipton Team Research Award

Drs. Vinson Doyle (left) and **Jonathan Richards** (right) were part of the team that won the Tipton Team Research Award for investigating the die-off of roseau cane in Gulf of Mexico. Other team members included faculty from Entomology, Renewal Natural Resources and Biological Sciences.

Doyle's lab is looking at the role that soil, rhizosphere, root and rhizome microbes have on the decline of roseau cane in the Mississippi River Delta by characterizing the diversity and composition of bacteria and fungi across healthy and dieback populations. They also are investigating the potential to use healthy soil and/or endophytic fungi to boost plant health and improve establishment of plants for restoration purposes. Finally, they are also surveying entomogenous fungi among populations of the roseau cane scale insect to search for entomopathogens.

Richards' lab is investigating the genetic diversity, population structure and potential of hybridization among roseau cane lineages in the Mississippi River Delta. Additionally, they are evaluating transcriptional responses to environmental stresses that may contribute to die-back, such as insect herbivory, salinity and soil microbial communities under field and controlled conditions. Their ultimate goal is to leverage genetic, genomic, and transcriptional data to identify roseau cane genotypes/populations that are more resistant to die-back for use in coastal restoration.



Ham receives the LSU AgCenter's G&H Seed Research Excellence Award

Dr. Jong H. Ham was recently recognized with the G&H Seed Research Excellence Award as the research scientist who has made the most significant contributions to research programs of the Louisiana Agricultural Experiment Station during the past five years.

Ham made numerous, important and groundbreaking research findings in pathogen virulence mechanisms, host plant disease resistance and biological control. In doing so, he published over 38 articles (e.g. refereed, book, book chapters, proceedings, annual reports), received over $1.8 million in research support, trained nine graduate students as well as six international scholars, and provided over 30 scientific presentations nationally and internationally.

Singh receives the Denver T. and Ferne Loupe Extension Team Award

Dr. Raj Singh was one of 20 scientists and communicators to win the Denver T. and Ferne Loupe Extension Team Award for producing Tip Tuesday. This is a weekly online video series that focuses on sharing agricultural information with the general public.

Watson receives the Silver Anvil Award

Dr. Tristan Watson received the Silver Anvil Award from the Public Relations Society of America. He received this award as part of a multistate extension project entitled "The SCN (Soybean Cyst Nematode) Coalition." The project promoted extension activities related to nematode management on soybeans nationwide. The team was successful in motivating up to 18% more farmers to actively manage SCN which enabled them to farm soybeans more sustainably and profitably.

FACULTY ACTIVITIES

Zhi-yuan Chen

Invited Presentations

- Third ICC-Asian Pacific Grain Conference, Zhengzhou, China. Nov. 8-10, 2003. "Reducing *Aspergillus flavus* infection and aflatoxin contamination in maize before and post-harvest through RNA Interference."
- 12th international conference of Advances in Arachis through Genomics and Biotechnology meeting, Huntsville, Alabama. Oct. 16-19. "Reducing *Aspergillus flavus* infection and aflatoxin contamination in maize and peanut through RNA Interference."
- Crop Research Institute, Guangdong Academy of Agricultural Sciences, Guangzhou, China. June 26, 2023. "RNA Interference in Plant Biology and Disease Management."
- 2023 Commodity Classic meeting, Orlando, Florida. March 8, 2023. Progress report on AMCOE funded project, "Transgenic Control of Aflatoxin Contamination in

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Corn through Host Induced Gene Silencing."

- Mid-South Soybean Board meeting, Baton Rouge, Louisiana. Jan. 30, 2023. Progress update, "Spray application of dsRNA for simultaneous management of multiple soybean fungal and insect diseases."

Other Presentations

- American Phytopathological Society Annual Meeting, Denver, Colorado. Aug. 12-16, 2023. Poster presentation, "Managing Asian soybean rust disease caused *Phakopsora pachyrhizi* through topical application of dsRNAs" by Raruang et al.
- 12th international conference of Advances in Arachis through Genomics and Biotechnology meeting, Huntsville, Alabama. Oct. 16-19, 2023. Poster presentation, "Towards deployment of dsRNA for potential management of aflatoxin contamination in peanut" by Mita et al.

Refereed Publications

- Raruang, Y., Omolehin, O., Hu, D., Wei, Q., Promyou, S., Samuel, L., Rajasekaran, K., Cary, J. W., Wang, K. and Chen, Z.-Y. 2023. Targeting the *Aspergillus flavus p2c* gene through host-induced gene silencing reduces *A. flavus* infection and aflatoxin contamination in transgenic maize. Frontiers in Plant Science 14:1150086.
- Sabrina Holz, S., Celeste Paola D'Alessandro, Héros José Maximo, Paulo Henrique Nascimento de Souza, Yenjit Raruang, Clarice Garcia Borges Demétrio, Italo Delalibera Júnior, Zhi-yuan Chen and Sérgio Florentino Pascholati. 2023. The potential of using *Metarhizium anisopliae* and *Metarhizium humberi* to control the Asian soybean rust caused by *Phakopsora pachyrhizi*, Biocontrol Science and Technology, DOI: 10.1080/09583157.2023.2191299.
- Promyou, S., Raruang, Y., and Chen, Z.-Y. 2023. Melatonin treatment of strawberry fruit during storage extends its post-harvest quality and reduces the infection by *Botrytis cinerea*. Foods 2023, 12(7), 1445; https://doi.org/10.3390/foods12071445.
- Razzaghi-Abyaneh, M., Chen, Z.-Y., Rai, M., and Shams-Ghahfarokhi, M. 2023. Editorial: Community series in research efforts, challenges and opportunities in mitigating aflatoxins in food and agricultural crops and its global health impacts, volume II. Frontiers in Microbiology 14:1141308. doi: 10.3389/fmicb.2023.1141308.

Awards and Honors

- Endowed American Cyanamid Professorship in Plant Biotechnology Molecular Biology and Crop Pest Management.

Committees

- PPCP Space Committee, chair.
- PPCP Graduate Student Admission Committee, chair.
- PPCP graduate advisor.
- Member or chair of the mentoring committee for Drs. Jonathan Richards, Ely Garcia, Imana Power and Chien-Yu Huang.
- LSU AgCenter Award Committee.
- NIFA SBIR 8.2 panel.
- Journal of Fungi, editor.

Grants and Contracts

- United Soybean Board grant for "Simultaneous management of multiple soybean diseases through dsRNA applications." $173, 239. October 2023 to September 2024.
- The AMCOE Aflatoxin Program grant for "Transgenic Control of Aflatoxin Contamination in Corn through Host Induced Gene Silencing." $69,859. June 2023 to May 2024.
- The USDA-ARS cooperative agreement award (58-6048-3-021) for "Exploring double stranded (ds) RNAs based RNA interference approach to manage *Aspergillus flavus* infection and aflatoxin contamination in peanut." $35,000. October 2022 to September 2027. (ADODR: Dr. Baozhu Guo, USDA-ARS Tifton, Georgia).
- The 2023 Louisiana Soybean and Grain Research and Promotion Board grant for "Cercospora Leaf Blight Disease of Soybean-Explore new approaches for management." $39,500. April 2023 to March 2024.
- The 2023 Louisiana Soybean and Grain Research and Promotion Board grant for "Direct double stranded RNA application for managing Cercospora leaf blight and rust." $38,500. April 2023 to March 2024.
- Georgia Peanut Foundation proposal titled "AflaPan, *Aspergillus flavus* Pan-genome and Nano-technology in peanut aflatoxin mitigation strategies" with B. Guo and R. Kemerait. $47,456.
- National Peanut Board proposal titled "Biotech pesticides for aflatoxin mitigation in peanut" with J. Fountain and B. Guo. $20,000.
- The Mid-South Soybean Board grant for "Spray application of double stranded RNA for simultaneous management of multiple soybean fungal and insect diseases." $20,000. March 2023 to May 2024.

Visiting Scientists/Students

- Henry Bueso Castro, Ph.D. student, Universidade Federal de Lavras, Brazil.

New Graduate Students

- Mamuna Mita, Bangladesh. May 2023.
- Sunira Marahatta, Nepal, May 2023.

New Collaborations

- Dr. Dan Jeffers, Plant Pathologist, Corn Host Plant Resistance Research Unit, USDA-ARS, Mississippi, on evaluating our transgenic corn materials in his location.
- Dr. Shin-Yi Marzano, Research Molecular Biologist from Application Technology Research Unit, USDA-ARS, Toledo, Ohio, on the synthesis of nanoparticles.

Felipe Dalla Lana

Invited Presentations

- 2023 Rice Technical Working Group Conference, Rock Springs, Arkansas. Feb. 20-23, 2023. "22 Years of Fungicide Studies on the Control of Sheath Blight in Louisiana: A Meta-Analysis."
- 2023 Louisiana Agricultural Technology and Management Conference, Marksville, Louisiana. Feb. 9, 2023. "Resistant Sheath Blight Update/Control."

Other Presentations

- Southwest LA Rice producer meeting, Welsh, Louisiana. Jan. 3, 2023. Rice pathology update.
- Producer meeting, Evangeline Rice and Soybean Production School, Ville Platte, Louisiana. Jan. 4, 2023. Rice pathology update.
- Producer meeting, Acadia Rice and Soybean Production School, Ville Platte, Louisiana. Jan. 5, 2023. Rice pathology update.
- Producer meeting, Vermilion Rice School, Abbeville, Louisiana. Jan. 10, 2023. Rice pathology update.
- Producer meeting, Avoyelles and Rapides Parish Rice School, Eunice, Louisiana. Feb. 2, 2023. Rice pathology update.
- Producer Meeting, Eunice Rice School, Eunice, Louisiana. Feb. 7, 2023. Rice pathology update.
- Rice pathology workshop, H. Rouse Caffey Rice Research Station, LSU AgCenter, Crowley, Louisiana. April 27, 2023.
- Central Region Rice Field Day, Mamou, Louisiana. May 25, 2023. Rice pathology overview.
- Acadia/South Farm Field Day, H. Rouse Caffey Rice Research Station, LSU AgCenter, Crowley, Louisiana. June 14, 2023. Rice pathology overview.
- Field Day, H. Rouse Caffey Rice Research Station, LSU AgCenter, Crowley, Louisiana. June 28, 2023. Rice pathology program updates.

Committees

- American Phytopathological Society.
  - Epidemiology Committee, member.
  - APS and Brazilian Society of Plant Pathology Working Group, vice-chair.
  - Crop Loss Assessment and Risk Evaluation (CLARE), member.
  - Chemical Control, member.
  - Tropical Plant Pathology, member.
- PPCP Award Committee.
- Graduate Student Mentoring.
  - Major advisor.
    - Dulakshi Mohottige, PPCP-LSU; M.S. student.
  - Co-advisor or committee member.
    - Kajal Gupta, SPESS-LSU; Ph.D. student. Major advisor: Dr. Fritsche-Neto.
    - Jobelle Bruno, PPCP-LSU; Ph.D. student. Major advisor: Dr. Jong Ham.
    - Maria Roselane Alves Oliveira; PPGF-UFRPE, Brazil. Major advisor: Dr. Rocha Silva.
    - Stephanie Ramos, PPCP-LSU, M.S. student. Major advisor: Dr. Sara Thomas-Sharma.

Grants and Contracts

- $72,000 Louisiana Rice Research Board.
- $250,000 USDA-NIFA-SAS.
- $63,250 in donations from industry.

Visiting Scientists/Students

- Anderson Cerutti.

New Graduate Students

- Dulakshi Mohottige, PPCP-LSU; M.S. Student.

New Collaborations

- Chun-Peng James Chen – Virginia Tech.
- Corteva.
- Valent.
- Helia.

Vinson Doyle

Invited Presentations

- U.S. Department of Agriculture Mycology and Nematology Genetic Diversity and Biology Laboratory. February 2023. "Inferring process from pattern in fungal evolution across multiple timescales and habitats."

Other Presentations

- Roseau Cane Summit, LSU AgCenter Hilltop Arboretum. January 2023. "The diversity of Roseau cane microbes from soil to scale." Co-presented with Dr. Aaron DeVries.
- Louisiana Soybean and Grain Research and Promotion Board Meeting. November 2023. "Understanding the infection biology for Cercospora Leaf Blight and Purple Seed Stain pathogens and variation in resistance among cultivars and pathogen species."
- Louisiana Soybean and Grain Research and Promotion Board Meeting. November 2023. "Tools for the management of taproot decline."
- Louisiana Cotton Incorporated State Support Committee. November 2023. "Characterizing the susceptibility and resistance to taproot decline, an emerging disease of cotton and soybean."

Refereed Publications

- Shrestha, B., B. Ward, T. Allen, E. da Silva, H. Zulli, W. Dunford, V.P. Doyle, C. Bradley, B. Buckley, P. Chen, M. Clubb, H.M. Kelly, J. Koebernick, G.B. Padgett, J.C. Rupe, E. Sikora, T. Spurlock, S. Thomas-Sharma, A.C. Tolbert, X.G. Zhou, P.P. Price. 2023. Characterization of QoI-fungicide resistance in *Cercospora* isolates associated with Cercospora leaf blight of soybean from the southern United States. "Plant Disease." https://doi.org/10.1094/PDIS-03-23-0588-RE.
- Searight, J., A.N. Famoso, X.G. Zhou, V.P. Doyle, J.K. Richards. A

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Continued from Page 16 | Faculty Awards and Honors - Vinson Doyle

high-quality genome assembly for *Cercospora janseana*, causal agent of narrow brown leaf spot of rice. 2023. "Molecular Plant-Microbe Interactions." https://doi.org/10.1094/MPMI-10-22-0222-A.

- Rehner, S.A., R. Gazis, V.P. Doyle, W.A.S. Vieira, P.M. Campos, J. Shao. Genome resources for the *Colletotrichum gloeosporioides* species complex: 13 tree endophytes from the Neotropics and Paleotropics. 2023. "Microbiology Resource Announcements" 12(4): e01040-22.
- Rodriguez-Herrera, K.D., V.P. Doyle, P.P. Price, B. Padgett, S. Thomas-Sharma. 2023. Aerial blight of soybean caused by *Rhizoctonia solani* AG1-IA: A Diagnostic Guide. "Plant Health Progress." https://doi.org/10.1094/PHP-05-22-0043-DG.

Awards and Honors

- LSU AgCenter Tipton Team Research Award 2023.

Committees

- PPCP Courses and Curricula Committee, chair.
- College of Agriculture Courses and Curricula Committee, chair.
- PPCP Graduate Admissions.
- PPCP Graduate Student Recruiting.
- PPCP Space Committee.
- College of Agriculture Undergraduate Research Grant Review Committee.
- Mycological Society of America Student Mentor Travel Awards Committee, past chair.
- Mycological Society of America, counselor on symbiosis and pathology.

Grants and Contracts

Principal Investigator (new and continuing)

- Louisiana Soybean and Grains Research and Promotion Board (LSGRPB). "Characterizing the production and spread of inoculum and infection strategies for Cercospora Leaf Blight and Purple Seed Stain pathogens." $29,833. Co-PIs: Trey Price, Sara Thomas-Sharma and Jonathan Richards.
- Louisiana Soybean and Grains Research and Promotion Board (LSGRPB). "Developing the tools for the management of taproot decline." $23,150. Co-PI: Trey Price.
- Cotton Inc. "Identifying the causal agent of an emerging cotton disease in the midsouth." $11,660.
- Louisiana Soybean and Grains Research and Promotion Board (LSGRPB). "Characterizing the production and spread of inoculum and infection strategies for Cercospora Leaf Blight and Purple Seed Stain pathogens." $23,500. Co-PIs: Trey Price, Sara Thomas-Sharma and Jonathan Richards.
- Louisiana Soybean and Grains Research and Promotion Board (LSGRPB). "Developing the tools for the management of taproot decline." $20,340. Co-PI: Trey Price.

Co-principal Investigator

- Louisiana Soybean and Grains Research and Promotion Board (LSGRPB). "Soybean seed treatment with fungicide-loaded nanoparticles." $25,000. PI: Cristina Sabliov; Co-PIs: Trey Price, Vinson P. Doyle, Jeff Davis.
- Louisiana Soybean and Grains Research and Promotion Board (LSGRPB). "Evaluation and application timing of cultivar resistance for management of Cercospora leaf blight on soybean." $47,500. PI: Sara Thomas-Sharma; Co-PIs: Vinson Doyle, Trey Price, Boyd Padgett, L. Conor.
- Louisiana Soybean and Grains Research and Promotion Board (LSGRPB). "A genetic and effector-based approach to manage fungal diseases of soybean." $20,000. PI: Jonathan Richards; Co-PIs: Vinson Doyle, Trey Price.
- USDA-APHIS. 2023-2026. "Roseau Cane Die Back: Integrating Across Disciplines, Long-Term Monitoring and Public-Access to Findings." $1,611,263 ($58,935 to Doyle). PI: Rodrigo Diaz; Co-PIs: James T. Cronin, Tracy Quirk, Vinson P. Doyle, Xuelian Meng, Jonathan Richards, Michael Stout, Andy Nyman.
- USDA-APHIS. 2022-2025. "Roseau Cane Dieback: Multidisciplinary approaches to address plant decline and opportunities for restoration." $1,611,263 ($153,561 to Doyle). PI: Rodrigo Diaz; Co-PIs: James T. Cronin, Tracy Quirk, Vinson P. Doyle, Xuelian Meng, Jonathan Richards, Michael Stout, Andy Nyman.
- USDA-APHIS. 2021-2024. "Integrating the Effects of Environmental Stressors, Above and Belowground Interactions and Plant Genetics to Understand Roseau Cane Die-off and Restoration." $1,611,263 ($173,560 to Doyle). PI: Rodrigo Diaz; Co-PIs: James T. Cronin, Tracy Quirk, Vinson P. Doyle, Xuelian Meng, Jonathan Richards, Michael Stout.
- USDA-NIFA Crop Protection and Pest Management Program. "Developing tools for long-term integrated management of Cercospora leaf blight on soybean." $324,998. PI: Sara Thomas-Sharma; Co-PIs: Vinson P. Doyle, Tom Allen, Trey Price, Boyd Padgett, Terry Spurlock.
- USDA-NIFA Pests and Beneficial Species in Agricultural Production Systems Program. "The ecological and genetic drivers of adaptation in a generalist leaf pathogen in North America." $240,656. PI: Jonathan Richards; Co-PI: Vinson P. Doyle.
- College of Agriculture Undergraduate Research Program. "The effects of fungal endophytes on the growth of *Phragmites australis*." $2,970. Student Investigator: Sam Elliott; Faculty Supervisor: Vinson P. Doyle.

New Postdoctoral Research Associate

- Dr. Pedro Santos.

Andre Gama

Refereed Publications

- Gama, A.B., Cordova, L.G., Baggio, J.S., Mertely, J.C., and Peres, N.A. 2023. Old but Gold: Captan fungicide is a valuable tool for Anthracnose and Botrytis Fruit Rots management based on a meta-analysis. "Plant Disease." 107:3071-3078.
- De Marchi, B. R., Gama, A. B., and Smith, H. 2023. Evidence of the association between the Q2 mitochondrial group of *Bemisia tabaci* MED species (Hemiptera: Aleyrodidae) and low competitive displacement capability. "Plos One." https://doi.org/10.1371/journal.pone.0280002.
- Baggio, J. S., Rebello, C. S., de Morais, M. B., Marin, M. V., Gama, A. B., Forcelini, B. B., Mertely, J. C., and Peres, N. A. 2023. Sensitivity and efficacy of single- and multi-site fungicides against *Neopestalotiopsis* spp. of strawberry. "Plant Disease." 107:2177-2184.
- Gasparoto, M.C.G., Gama, A.B., Wang, N-Y., Rebello, C.S., Dewdney, M.M., and Peres, N.A. 2023. Colletotrichum abscissum: detection on symptomless citrus leaves and symptomatic citrus flowers using high-resolution melting analysis. "Plant Pathology." https://doi.org/10.1111/ppa.13688. Gasparoto and Gama are shared first authors.

Committees

- PPCP – LSU Social Committee.

Visiting Scientists/Students

- João Vitor Pelizzaro Morales, recent graduate from the Luiz de Queiroz College of Agriculture, University of São Paulo.

New Collaborations

- Instituto Agronômico de Campinas (IAC), University of Florida, FMC.

Jong Hyun Ham

Invited Presentations

- 2023 Conference of the Rice Technical Working Group, Hot Springs, Arkansas. Feb. 22, 2023. "Genetic Characterization of the Quantitative Disease Resistance to Bacterial Panicle Blight."
- 2023 Annual Meeting of the Southern Association of Agricultural Scientists (SAAS), Oklahoma City, Oklahoma. Feb. 6, 2023. "Artificial microbial community to promote soybean growth and health."

Other Presentations

- Plant Health 2023, Denver, Colorado. Aug. 12-16, 2023. "Transcriptome Analysis of Seed-Primed Rice Plants on Bacterial Panicle Blight Resistance." J. Bruno, J. C. Ontoy, I. Barphagha, and J. H. Ham.
- Plant Health 2023, Denver, Colorado. Aug. 12-16, 2023. "Development of seed-priming agents that augment soybean growth and broad-spectrum disease resistance." F. Valle and J. H. Ham.
- Federal Rural University of Pernambuco, Recife, Brazil. Oct. 18 and Nov. 1, 2023. "Genetics of Plant-(Bacterial) Pathogen Interactions," special lecture series.

Refereed Publications

- Lelis, T., J. Bruno, J. Padilla, I. Barphagha, and J. H. Ham. 2023. qsmR encoding an IclR-family transcriptional factor is a core pathogenic determinant of *Burkholderia glumae* beyond the acyl-homoserine lactone-mediated quorum-sensing system. "bioRxiv" doi:10.1101/2023.12.05.570247.
- Iqbal, A., G. Nwokocha, V. Tiwari, I. K. Barphagha, A. Grove, J. H. Ham, and W. T. Doerrler. 2023. A membrane protein of the rice pathogen *Burkholderia glumae* required for oxalic acid secretion and quorum-sensing. "Molecular Plant Pathology" DOI: 10.1111/mpp.13376.
- Maharjan, A., J. Bruno, S. Osti, I. K. Barphagha, and J. H. Ham. 2023. Biological control efficacy of *Bacillus* sp. REB711 on sheath blight of rice. "Plant Health Progress" (First Look Status) DOI: https://doi.org/10.1094/PHP-10-22-0097-RS.
- Ontoy, J. C., B. Shrestha, H. S. Karki, I. Barphagha, B. Angira, A. Famoso, and J. H. Ham. 2023. Genetic characterization of the partial disease resistance of rice to bacterial panicle blight and sheath blight by combined QTL linkage and QTL-seq analyses. "Plants" 12: 559. DOI: https://doi.org/10.3390/plants12030559.
- Velez, L. S., F. F. Aburjaile, A. R. G. Farias, A. D. B. Bia, W. J. Oliveira, A. M. F. Silva, A. M. Benko-Iseppon, V. Azevedo, B. Brenig, J. H. Ham, E. B. Souza, and M. A. S. Gama. 2023. *Burkholderia semiarida* sp. nov. and *Burkholderia sola* sp. nov., two novel *B. cepacia* complex species causing onion sour skin. "Systemics and Applied Microbiology" 46(3): 126415. DOI: https://doi.org/10.1016/j.syapm.2023.126415.

Awards and Honors

- G&H Seed Research Award.

Committees

- PPCP Course and Curricula Committee.
- PPCP Graduate Student Recruiting Committee.
- PPCP Promotion and Tenure Committee.
- PPCP Safety/Operational Committee, chair.
- LSU/LSU AgCenter Interinstitutional Biological and Recombinational DNA Safety Committee.
- APHIS Widely Prevalent Bacteria Committee.

Grants and Contracts

- Louisiana Soybean and Feed Grains Research and Promotion Board Grant: Development of seed-priming agents that augment soybean growth and broad spectrum disease resistance. $25,000. April 2023 to March 2024. PI: Jong Hyun Ham; Co-PI: Changyoon Jeong.
- NIFA AFRI SAS (Sustainable

Continued ▶

Continued from Page 18 | Faculty Awards and Honors - Jong Hyun Ham

Agriculture System) Program: Climate Resilient Innovations for Sustainable Production of RICE (CRISP-RICE). $690,644 out of the total $10M funded amount. April 1, 2023 to March 31, 2027. PI: Prasanta Subudhi; Co-PIs: Jong Hyun Ham et al.

- Louisiana Soybean and Feed Grains Research and Promotion Board Grant: Development of seed-priming agents that augment soybean growth and broad spectrum disease resistance. $37,200. April 2023 to March 2024. (PI: Jong Hyun Ham; co-PI: Changyoon Jeong.
- United Soybean Board Program: Development of seed-treating biostimulants that protect soybean plants from biotic and abiotic stresses. $65,700. Oct. 1, 2022 to Sept. 30, 2023. PI: Jong Hyun Ham.
- NIFA AFRI Foundation Program: Deciphering the role of the quorum-sensing master regulator, *qsmR*, in social behaviors of *Burkholderia glumae* for bacterial pathogenesis in rice plants. $682,232. Jan. 1, 2022 to Dec. 31, 2025. PI: Jong Hyun Ham; Co-PI: Maheshi Dassanayake.
- The Land Institute Super Ratooning Rice Program. $50,000. January 2023 to December 2024.

New Graduate Students

- Sandeep Gouli, M.S. program.

New Collaborations

- Dr. Shahid Mukhtar, The University of Alabama at Birmingham.
- Dr. Chang Yoon Jeong, Red River Research Station, LSU AgCenter.
- Dr. David Moseley, Dr. G. Boyd Padgett, Dean Lee Research Station, LSU AgCenter.
- Dr. Maheshi Dassanayake, Dr. William Doerrler, Dr. Michal Brylinski, Department of Biological Sciences, LSU.
- Dr. Nathaniel Gilbert, Center for Advanced Microstructures and Devices (CAMD), LSU.

Chien-Yu Huang

Presentations

- 2023 IS-MPMI Congress, Providence, Rhode Island. 2023. "Using a citrus-derived antimicrobial peptide to combat potato zebra chip disease and other vascular pathogens." Poster presentation with H. Jin.
- Plant Biology 2023 Worldwide Summit, Savannah, Georgia. "Arabidopsis DDX3-like RNA helicases modulate the homeostasis and function of Argonaute proteins." Poster presentation with H. Jin.

New Collaborations

- Dr. Kris Godfrey, University of California, Davis.
- Dr. Hailing Jin, University of California, Riverside.
- Dr. Georgios Vidalakis, University of California, Riverside.
- Dr. Megan Dewdney, University of Florida.
- Dr. Svetlana Folimonova, University of Florida.
- Dr. Yet-Ran Chen, Agricultural Biotechnology Research Center, Academia Sinica, Taipei, Taiwan.

Ely Oliveira-Garcia

Invited Presentations

- 12th ICPP 2023, Lyon, France. "Towards understanding how *Magnaporthe oryzae* co-opts plant endocytosis for translocation of cytoplasmic effectors."

Refereed Publications

** correspondent author*

- Oliveira-Garcia, E.*, Yan, Xia, Ruis-Oses, Miriam, De Paula, Samuel, Talbot, Nicholas. 2023. Effector-triggered susceptibility by the rice blast fungus *Magnaporthe oryzae*. "New Phylologist" (open access) doi: https://doi.org/10.1111/nph.19446 (Impact factor: 10.323).
- Oliveira-Garcia, E.*, Budot, Bernard, Manangkil, Jennifer, Dalla Lana, Felipe, Angira, Brijesh, Famoso, Adam, Jia, Yulin, 2023. An efficient method for screening rice breeding lines against races of *Magnaporthe oryzae*. "Plant Disease" doi: 10.1094/PDIS-05-23-0922-RE. (Impact factor: 4.614).
- Carl L. McCombe, Alex Wegner, Chenie S. Zamora, Florencia Casanova, Shouvik Aditya, Julian R. Greenwood, Louisa Wirtz, Samuel de Paula, Eleanor England, Sascha Shang, Daniel J. Ericsson, Ely Oliveira-Garcia*, Simon J. Williams*, Ulrich Schaffrath*, 2023. Plant pathogenic fungi hijack phosphate starvation signaling with conserved enzymatic effector. "bioRxiv" 2023.11.14.566975; doi: https://doi.org/10.1101/2023.11.14.566975.
- Oliveira-Garcia, E.*, Tamang, T.M., Park J., Dalby, M., Martin-Urdiroz, M., Rodriguez Herrero, C., Vu, A.H., Park, S., Talbot, N.J., Valent, B., 2023. Clathrin-mediated endocytosis facilitates the internalization of *Magnaporthe oryzae* effectors into rice cells. "The Plant Cell" 35(7):2527–2551. https://doi.org/10.1093/plcell/koad094 (Impact factor 12.085).
- Wang H, Oliveira-Garcia E., Boevink P.C., Talbot N.J., Birch P.R.J., Valent B., 2023. Filamentous pathogen effectors enter plant cells via endocytosis. "Trends in Plant Science" 28:1214-1217. doi: 10.1016/j.tplants.2023.07.015. (Impact factor: 22.5).

Committees

- American Phytopathological Society, Pathogen Resistance, Host Resistance Committee, Molecular and Cellular Phytopathology, Evolutionary Genetics and Genomics, Emerging Diseases and Pathogens.
- Genetics Society of America, 2024

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Continued from Page 19 | Faculty Awards and Honors - Ely Oliveira-Garcia

Magnafest (Magnaporthe research community meeting), chair.

Grants and Contracts

- Functional characterization of the β-1,6-glucan synthase gene, Kre 11, in *Magnaporthe oryzae*. LSU College of Agriculture, Undergraduate research program. Allison Jane Hamilton, Ely Oliveira-Garcia. $2,954.65.

Visiting Scientists/Students

- Daneri Herera, UNAS program, Honduras. April-September 2023.
- Gustavo Escobar, Zamorano program, El Salvador. September-November 2023.

Boyd Padgett

Invited Presentations

- Parish Production Meetings, Avoyelles, Pointe Coupee, Rapides, Richland, St. Landry parishes.
- Pesticide Recertification, Jan. 26 and Nov. 2.
- Louisiana Agricultural Technical and Management Conference. Feb. 8-10.

Other Presentations

- Proceedings of the Southern Soybean Disease Workers 50th Annual Meeting, Pensacola, Florida. March 1-2. "Soybean disease management programs in Louisiana." Padgett, G.B., Price, P., Moseley, D., ... Woolam, B. 2023.
- Louisiana Soybean and Feed Grains: Progress Report to the Board. Nov. 15-16.

Refereed Publications

- Hollier, C. A., Padgett, G. B., and Draper, M. A. 2023. "Diseases of Field Crops." American Phytopathological Society, St. Paul, Minnesota. 405 pp.
- Hollier, C.A., and Padgett, G.B. 2023. Integrated disease management. pp. 1-8. "Diseases of Field Crops." American Phytopathological Society, St. Paul, Minnesota. 405 pp.
- Allen, T.A., Wise, K.A., Price, P., and Padgett, G.B. 2023. "Diseases of Soybean." pp. 241-266. American Phytopathological Society, St. Paul, Minnesota. 405 pp.

Other Publications

- Thomas-Sharma, S., Doyle, V.P., Galagedara, N., Price, T., Padgett, B., Connor, L., Dhakai, R., and Setiyono, T., 2023. Translating spore peaks to soybean profits: can targeted fungicide applications improve Cercospora leaf blight management? "Louisiana Agriculture" 66(3): 30-31.

Extension Publications

- Padgett, Guy B., Singh, Raghuwinder, Power, Imana, Dalla Lana, Felipe, Hoy, Jeffrey W., Monaghan, T., Price, III, Paul P, Guelig, B., Ferguson, Mary Helen, and Watson, Tristan. 2023. "2024 Louisiana Plant Disease Management Guide" (LSU AgCenter online store item). Publication No. 1802.

Committees

- Search Committee Sugarcane Pathologist.
- Search Committee Sweet Potato Pathologist.
- USWBSI FHB Advisory.
- LACA Executive Committee.
- LACA Program Planning Committee.
- PLHL Awards Committee.
- Six Mentoring Committees.
- Six Graduate Student Committees.

Grants and Contracts

- Louisiana Soybean and Feed Grains Research and Promotion Board. $64,750.
- USDA-ARS USWBSI. $38,756.
- Smith Bucklin. $55,000.
- USDA-NIFA-CPPM. $5,000.
- Unrestricted. $20,000.

Imana Power

Presentations

- National Clean Plant Network (NCPN) All: Focus on Sweetpotato, virtual. June 14, 2023. "Louisiana Sweetpotato Foundation Seed Program."
- National Clean Plant Network (NCPN) Tier 2 Meeting. Arkansas. Aug. 15, 2023. "Louisiana Sweetpotato Foundation Seed Program."
- 87th Annual meeting of Louisiana Sweet Potato Advertising and Development (LSPA). Dec. 6, 2023. "Updates from the Sweetpotato Pathology Lab: Research focus and challenges."

Committees

- David Galo, Ph.D.
- Santosh Bhandhari, M.S., entomology.

Grants and Contracts

- National Clean Plant Network – Sweetpotato Louisiana Cooperative Agreement. $71,706. FY 2023-2024.
- Sweetpotato Disease Management in Louisiana - Louisiana Sweet Potato Advertising and Development. $18,600.
- Involved in USDA-SCRI grants: CleanSEED and SweetARMOR.

Visiting Scientists/Students

- Francella Arce, summer 2023.

New Graduate Students

- Zoe Woody, M.S., fall 2023.
- Francella Arce, M.S., fall 2023.
- Clayton Blake, M.S., spring 2024.

Trey Price

Invited Presentations

- Tri-State Soybean Forum, Dumas, Arkansas. Jan. 6, 2023. "Taproot Decline Management."
- Conservation Systems Cotton and Rice Conference. Jan. 31-Feb. 1, 2023. "Cotton Fungicide Seed Treatment Considerations."
- Louisiana Agricultural Technology and Management Conference. Feb.8-10, 2023. " 'New' Fungicides for Disease Management in LA Crops."

Refereed Publications

- Uncovering the environmental conditions required for *Phyllachora maydis* infection and tar spot development on corn in the United States for use as predictive models for future epidemics. "Scientific Reports." 13:17064.
- Aerial blight of soybean caused by *Rhizoctonia solani* AG1-1-A: a diagnostic guide. "Plant Health Progress." 24:234-241.
- Influence of harvest aid on soybean seed quality affected by delayed harvest and environment in Louisiana. "Crop, Forage and Turfgrass Management." 9:e20221.
- Meta-analytic modeling of the severity-yield relationships in soybean frogeye leaf spot epidemics. "Plant Disease." 107:3422-3429.
- Efficacy and profitability of fungicides for managing frogeye leaf spot on soybean in the United States: a 10-year quantitative summary. "Plant Disease." 107:3487-3496. *Editor's Pick.
- Influence of planting date, maturity group, and harvest timing on soybean (*Glycine max* L.) yield and seed quality. "Agronomy Journal." DOI: 10.1002/agj2.21527.
- Characterization of QoI-fungicide resistance in Cercospora isolates associated with Cercospora leaf blight of soybean from the southern United States. "Plant Disease." https://doi.org/10.1094/PDIS-03-23-0588-RE.

Awards and Honors

- 2023 National Excellence in Multistate Research Award, NCERA 137.
- LCAAA Applied Research Poster, first place, Ongoing Fungicide and Plant Growth Regulator Efficacy Research in Louisiana Peanut.
- NACAA Applied Research Poster, national finalist, Fungicide Options for QoI-Resistant Aerial Blight in Soybean.

Committees

- Ray and Dorothy Young Scholarship Committee.
- PCPP Awards and Publicity.
- Mentoring Committees: Tristan Watson, Rasel Parvej (chair), Tyler Towles (chair), Matthew Foster (chair), Imana Power, Felipe Dalla Lana.
- Hiring Committees: MRRS Entomology, Agronomy, Corn, Cotton and Grain Sorghum Specialist.
- Many student committees (PCPP, SPESS, ENTM).
- LACA Planning Committee.

Grants and Contracts

- Louisiana Soybean and Grain Research and Promotion Board, Identifying and refining varietal, cultural, and chemical management strategies for important biotic and abiotic soybean disorders. $75,325.
- Louisiana Soybean and Grain Research and Promotion Board, Cultivar evaluation, fungicide efficacy, emerging diseases, and novel fungicide application methods in corn and wheat. $20,125.
- Louisiana Rice Board, Evaluation of fungicides on important rice diseases under upland (row rice) conditions. $30,000.
- USDA – National Predictive Modeling Tool Initiative (Corn and Cotton), Development of prediction tools for diseases and mycotoxins affecting corn to better inform management decisions AND Louisiana cotton disease predictive tool development. $95,666.

Jonathan Richards

Invited Presentations

- Universidade Federal de Vicosa, Vicosa, Brazil. March 27, 2023. "A genetic and genomic approach to clone the major narrow brown leaf spot resistance gene CRSP2.1 in rice."
- Louisiana Agricultural Technology and Management Conference, Marksville, Louisiana. Feb. 9, 2023. "New Insights Into Narrow Brown Leaf Spot of Rice."

Other Presentations

- LSU Department of Plant Pathology and Crop Physiology Seminar Series, Baton Rouge, Louisiana. March 22, 2023. "Two sides of the same coin: Understanding plant disease from the host and pathogen perspectives."
- 39th Rice Technical Working Group Meeting, Hot Springs, Arkansas. Feb. 22, 2023. "Fine Mapping of the CRSP2.1 Narrow Brown Leaf Spot Resistance Locus."

Refereed Publications

- Searight, J., Famoso, A.N., Zhou, X.G., Doyle, V.P., and Richards, J.K. 2023. A high-quality genome assembly for *Cercospora janseana*, causal agent of narrow brown leaf spot of rice. "Molecular Plant-Microbe Interactions." 36(10): 666-669. DOI: 10.1094/MPMI-10-22-0222-A.
- Khan, A., Ben-David, R., Richards, J., Bansal, U., Wang, C., McCartney, C., Stam, R., and Wang, N. 2023. Plant disease resistance research at the dawn of the new era. "Phytopathology." 113(5): 756-759. DOI: 10.1094/PHYTO-03-23-0108-FI.
- Richards, J., Li, J., Wyatt, N., Rehman, S., Brueggeman, R.S., and Friesen, T.L. 2023. A Moroccan *Pyrenophora teres* f. teres population defeats *Rpt5*, the broadly effective resistance on barley chromosome 6H. "Phytopathology." In press. DOI: 10.1094/PHYTO-04-23-0117-R.

Awards and Honors

- LSU AgCenter's Tipton Team Research Award.

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Continued from Page 21 | Faculty Awards and Honors - Jonathan Richards

Committees

- NCCC307: Biochemistry and Genetics of Plant-Fungal Interactions Multistate Research Coordinating Committee and Information Exchange Group, chair.
- Graduate Student Recruiting Committee, Department of Plant Pathology and Crop Physiology, chair.
- Courses and Curricula Committee, Department of Plant Pathology and Crop Physiology, member.
- PPCP Newsletter/Website/Social Media Committee, Department of Plant Pathology and Crop Physiology, member.
- PPCP Social Activities Committee, Department of Plant Pathology and Crop Physiology, chair.
- Therapeutic Cannabis Research Committee, LSU AgCenter, member.
- American Phytopathological Society Southern Division Awards Committee.

Grants and Contracts

- Narrow brown leaf spot resistance in rice: enhancing breeding strategies through fine mapping and dissection of quantitative resistance. USDA-AFRI Foundational and Applied Science Program. $500,000. Jan. 15, 2021 to Jan. 14, 2025. PI: Jonathan Richards; Co-PIs: Adam Famoso, Brijesh Angira, and Niranjan Baisakh.
- The ecological and genetic drivers of adaptation in a generalist leaf pathogen in North America. USDA-AFRI Foundational and Applied Science Program. $240,656. Jan. 1, 2022 to Dec. 31, 2024. PI: Jonathan Richards; Co-PI: Vinson Doyle.
- Improvement of Management Strategies for Narrow Brown Leaf Spot of Rice. Louisiana Rice Research Board. $33,400. Jan. 1, 2023 to Dec. 31, 2023. PI: Jonathan Richards; Co-PIs: Adam Famoso and Brijesh Angira.
- A Genetic and Effector-Based Approach to Manage Fungal Diseases of Soybean. Louisiana Soybean and Grain Promotion Board. $20,000. April 1, 2023 to March 31, 2024. PI: Jonathan Richards; Co-PIs: Vinson Doyle and Trey Price.
- Genomic resources for functional and evolutionary dissection of the fungal hemibiotrophic lifestyle in the genus *Cercospora*. Center of Research Excellence Enhancement of External Competitive Funding Program, LSU AgCenter. $28,551. July 12, 2022 to July 11, 2023. PI: Jonathan Richards; Co-PI: Vinson Doyle.
- Critical Infrastructure for Agricultural Training: Acquisition of Plant Growth Chambers for Improved Plant Pathology Training. LSU Student Technology Fee Fund. $102,660. PI: Jonathan Richards; Co-PIs: Vinson Doyle, Sara Thomas-Sharma, Ely Oliveira-Garcia.
- Roseau Cane Dieback: Integrating across disciplines, long-term monitoring, and public access to findings. USDA-APHIS. $1,611,263 ($152,273 subaward to Richards' lab). Sept. 1, 2023 to Aug. 31, 2025. PIs: Rodrigo Diaz, Jonathan Richards, Vinson Doyle, James Cronin, Tracy Quirk, Xuelian Meng, Kory Konsoer, Andrew Nyman, Matthew Hiatt, Ehab Meselhe, Allison Mead, Kevin Hu, Michael Stout, and Yadong Qi.
- Applied Molecular Breeding. Louisiana Rice Research Board. $75,088. Jan. 1, 2023 to Dec. 31, 2023. PI: Brijesh Angira; Co-PIs: Adam Famoso, Jonathan Richards.
- Characterizing the production and spread of inoculum and infection strategies for Cercospora Leaf Blight and Purple Seed Stain pathogens. Louisiana Soybean and Grain Promotion Board. $29,833. April 1, 2023 to March 31, 2024. PI: Vinson Doyle; Co-PIs: Trey Price, Sara Thomas-Sharma, and Jonathan Richards.
- Foliar treatment of micronutrient deficiency: addressing yield gap and disease pressure in field crop productions in Louisiana. Louisiana Soybean and Grain Promotion Board. $29,000. April 1, 2023 to March 31, 2024. PI: Brenda Tubana; Co-PIs: Steve Harrison and Jonathan Richards.
- Roseau Cane Die-Back: Multidisciplinary Approaches to Address Plant Decline and Opportunities for Restoration. USDA-APHIS. $1,611,263 ($101,646 subaward to Richards' lab). Sept. 1, 2022 to Aug. 31, 2024. PIs: Rodrigo Diaz, Jonathan Richards, Vinson Doyle, James Cronin, Tracy Quirk, Xuelian Meng, Kory Konsoer, Andrew Nyman, Matthew Hiatt, Ehab Meselhe, Allison Mead, Kevin Hu, and Yadong Qi.
- Integrating the effects of environmental stressors, above and belowground interactions, and plant genetics to understand Roseau cane die-off and restoration. USDA-APHIS. $1,611,263 ($303,290 subaward to Richards' lab). Sept. 1, 2021 to Aug. 31, 2023. PIs: Rodrigo Diaz, Jonathan Richards, Vinson Doyle, James Cronin, Tracy Quirk, Xuelian Meng.

Visiting Scientists/Students

- Gustavo Husein, visiting scholar.
- Dr. Pedro dos Santos, postdoctoral research associate.

New Graduate Students

- Dablieny Souza, Ph.D. student.

New Collaborations

- Chien-Yu Huang, PPCP.

Raghuwinder Singh

Invited Presentations

- LSU AgCenter Ornamental and Turfgrass Recertification Program, Lafayette, Louisiana. Oct. 5, 2023. "Ornamental and Turfgrass Disease Identification and Management."
- Louisiana Master Gardener Training (MS Teams), Minden, Louisiana. Sept. 12, 2023. "Basics of Plant Pathology and Plant Diagnostics."
- Louisiana Master Gardener Training (MS Teams), Ruston, Louisiana. Sept. 12, 2023. "Basics of Plant Pathology and Plant Diagnostics."

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Continued from Page 22 | Faculty Awards and Honors - Raghuwinder Singh

- Landscape Professional Workshop, Metairie, Louisiana. Sept. 12, 2023. "Landscape Diseases and their Management."
- Louisiana Master Gardener Training, Covington, Louisiana. Sept. 5, 2023. "Basics of Plant Pathology and Plant Diagnostics."
- Louisiana Master Gardener Training, Lafayette, Louisiana. Aug. 24, 2023. "Basics of Plant Pathology and Plant Diagnostics."
- Agricultural and Natural Resource Agent Urban and Landscape Tree Training, Baton Rouge, Louisiana. June 13, 2023. "Diseases and Disorders of Urban and Landscape Trees."
- Louisiana Master Gardener Spring Meeting, Baton Rouge, Louisiana. April 4, 2023. "Turfgrass Disease Identification and Management."
- Louisiana Master Gardener Training, Natchitoches, Louisiana. March 28, 2023. "Basics of Plant Pathology and Plant Diagnostics."
- Louisiana Master Gardener Training, Winnfield, Louisiana. March 27, 2023. "Basics of Plant Pathology and Plant Diagnostics."
- Southwest Louisiana Garden Conference and Expo, Lake Charles, Louisiana. March 24, 2023. "Recognizing and Managing Diseases in Home Vegetable Garden."
- Louisiana Master Gardener Training, Bossier City, Louisiana. March 23, 2023. "Basics of Plant Pathology and Plant Diagnostics."
- Louisiana Master Gardener Training, Baton Rouge, Louisiana. Feb. 1, 2023. "Basics of Plant Pathology and Plant Diagnostics."
- Louisiana Master Gardener Training, Raceland, Louisiana. Jan. 26, 2023. "Basics of Plant Pathology and Plant Diagnostics."
- Mendel University Visitor, Baton Rouge, Louisiana. Jan. 23, 2023. "The Role of Plant Diagnostic Center in Safeguarding Agriculture."
- Gulf State Horticulture Expo, Mobile, Alabama. Jan. 18, 2023. "Identification and Management of Phytophthora Diseases in Landscape."
- Gulf State Horticulture Expo, Mobile, Alabama. Jan. 18, 2023. "Boxwood Die-back Identification and Management."

Other Presentations

- "Disease Diagnosis and Pathogen Detection Methods – II." Plant Disease Management and Control PLHL 4001, Plant Pathology and Crop Physiology, Baton Rouge, Louisiana. March 20, 2023.
- "Disease Diagnosis and Pathogen Detection Methods – I." Plant Disease Management and Control PLHL 4001, Plant Pathology and Crop Physiology, Baton Rouge, Louisiana. March 22, 2023.
- "Structure and Functioning of Plant Diagnostic Center." Plant Disease Management and Control PLHL 4001, Plant Pathology and Crop Physiology, Baton Rouge, Louisiana. March 20, 2023.
- "Diagnosis of Bacterial Pathogens." Phytobacteriology PLHL 7011, PPCP, Baton Rouge, Louisiana. Feb. 9, 2023.
- "Structure and Functioning of Plant Diagnostic Center." Phytobacteriology PLHL 7001, PPCP, Baton Rouge, Louisiana. Feb. 9, 2023.
- "Important Bacterial Diseases in Louisiana." Phytobacteriology PLHL 7011, PPCP, Baton Rouge, Louisiana. Feb. 9, 2023.

Awards and Honors

- LSU AgCenter's Denver T. and Ferne Loupe Extension Team Award.

Committees

- LSU AgCenter Promotion and Tenure Committee.
- LSU AgCenter and COA Annual Awards Committee.
- NACAA Southern Region Agronomy and Pest Management Professional Development Committee, vice chair.
- Southern Hemp IPM Working Group, member.
- Southeastern US Vegetable Extension Working Group.
- The Southern Region Small Fruit Consortium Steering Committee.
- Plant Disease Journal, senior editor.
- Citrus Clean Plant Network Tier II Governing Body.
- Louisiana Citrus Growers Association Board, member.
- Professional Excellence Recognition Committee, Louisiana County Agricultural Agents Association, chair.
- LSU COA Scholarship Committee.
- LSU AgCenter Horticulture Extension Committee.
- LSU AgCenter Industrial Hemp Working Group.
- PPCP Course and Curricula Committee.
- PPCP Graduate Student Admissions Committee.
- PPCP Award and Publicity Committee.
- PPCP Promotion and Tenure Committee.
- Search Committee PPCP sugarcane pathology position, chair.

Grants and Contracts

- Multistate Project: TomSPOT - an integrated toolbox for managing tomato bacterial diseases in North America. USDA-NIFA-SCRI. $142,860. Sept. 1, 2022 to Aug. 31, 2026.
- Development of *Septoria villarsiae* for Biological Control of *Nymphoides peltate*, The U.S. Army Corps of Engineers, Engineer Research and Development Center. $100,000. May 1, 2021 to April 30, 2026.
- To Develop an Effective Management Program for Fireblight and Rust Diseases in Mayhaw Production, USDA-LDAF-Specialty Crop Block Grant Program. $44,500. Oct. 1, 2020 to May 31, 2023.
- Evaluation of a plant-based antimicrobial formulation on control of damping-off and other diseases in vegetable seedlings, USDA-LDAF-Specialty Crop Block Grant Program. $32,086. Oct. 1, 2020 to Sept. 30, 2023. With Kirk-Ballard, H. and Liu, Z.

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Continued from Page 23 | Faculty Awards and Honors - Raghuwinder Singh

- The Continental USA, Hawaii and Puerto Rico Citrus Clean Plant Network, National Clean Plant Network, USDA-NIFA. $44,168. Sept. 1, 2022 to Aug. 31, 2023.
- Southern Plant Diagnostic Network, National Plant Diagnostic Network for the Food and Agriculture Initiative, USDA-NIFA. $39,500. Sept. 1, 2022 to Aug. 31, 2023.

Visiting Scientists/Students

- Amanda Piris, Federal University of Mato Grosso, Brazil. Feb. 1, 2023 to June 30, 2023.
- Kateřina Kuchaříková, Mendel University, Brno, Czech Republic. Feb. 1, 2023 to May 31, 2023.
- Marco Goncalves, SEP, Brazil. May 1, 2023 to July 31, 2023.

Sara Thomas-Sharma

Presentations

- Graduate Research Conference, LSU. April 26, 2023. "Developing tools for integrated management of Cercospora leaf blight on soybean across the mid-South." Poster presentation, Ramos, S., Galagedara, N., Silva, E. T., Shrestha, B. K., Aime, J., Setiyono, T., Spurlock, T. N., Allen, T. W., Price, T., Padgett B., Doyle, V. P., Thomas-Sharma, S.
- 2023 Plant Health, Denver, Colorado. "Developing tools for integrated management of Cercospora leaf blight on soybean across the mid-South." Poster presentation, Ramos, S. K., Galagedara, N., Silva, E. T., Shrestha, B. K., Aime, J. , Setiyono, T., Spurlock, T. N., Allen, T. W., Price, T., Padgett B., Doyle, V. P. , Thomas-Sharma, S.
- 2023 Plant Health, Denver, Colorado. "Tracking the causal agents of Cercospora Leaf Blight of soybean to better understand epidemiology and improve disease management." Poster presentation, Galagedara, N., Doyle, V. P., Price, P., Robertson, C. L., Padgett, G. B., Thomas-Sharma. S.
- 2023 APS Southern Division Meeting. "*Rhizoctonia solani* AG1-IA genetic variability in Arkansas, Louisiana and Texas." Poster presentation, Gil, J., Rodriguez, K., Spurlock, T., Szarka, D., Castroagudin, V., Thomas-Sharma., S., Correll, J., Rojas, A.
- 2023 Plant Health, Denver, Colorado. "Coordinated foliar fungicide evaluation in soybean in the United States in 2022." Poster presentation, Miranda, I. L. S., Mizuno, M., Allen, T. W., Bond, J. P., Bradly, C. A., Chilvers, M. I., Fakhoury, A. M., Faske, T. R., Kelly, H. M., Little, C., Lopez-Nicora, H., Malvick, D. K., Mathew, F. M., Mueller, D. S., Nicolli, C., Onofre, R., Price, P. P., Roth, M., Sharma-Thomas, S., Sikora, E. J., Small, I., Webster, R., Smith, D. L., Telenko, D. E. P.

Refereed Publications

- Shrestha, B. K., Ward B., Allen, T., da Silva, E. T., Zulli, H., Dunford W., Doyle, V. P., Bradley, C. A., Buckley, B., Chen, P., Clubb, M., Kelly, H., Koebernick, J., Padgett, G.B., Rupe, J. C., Sikora, E.J., Spurlock, T. N., Thomas-Sharma, S., Tolbert, A.C., Zhou, X.-G., Price, P. Characterization of QoI-fungicide resistance in *Cercospora* isolates associated with Cercospora leaf blight of soybean from the southern United States. "Plant Disease." Accepted. https://doi.org/10.1094/PDIS-03-23-0588-RE.
- Rodriguez-Herrera, K., Doyle, V.P., Price, P., Padgett, B., Thomas-Sharma, S. 2023. Aerial blight of soybean caused by *Rhizoctonia solani* AG1-IA: A diagnostic guide. "Plant Health Progress" 24:234-241. https://doi.org/10.1094/PHP-05-22-0043-DG.

Committees

- Multi-state hatch participant, S1083, Ecological and genetic diversity of soilborne pathogens and indigenous microflora, 2023-present.

Grants and Contracts

- USDA_AFRI-FAS, Seed grant, Cercosporin production and self-resistance: Deciphering the Achilles' heel of Louisiana's devastating soybean disease $299,984.
- Critical Infrastructure for agriculture for agricultural training: acquisition of plant growth chamber for improved plant pathology teaching, with Richards, J., Doyle, V.P., Oliveria-Garcia, E. $102,660, student technology fee.
- North Central Soybean Research Program, Development and Expansion of Disease Management Decision-Making Tools Across Multiple Soybean Regions, with Bradley, C., Smith, D., Price, T., Wilkerson, T., Allen, T., Kelly, H., Langston, D., Koehler, A., Faske, T., Esker, P., Collins, A., Sikora, E. $315,000 (sub-awardee amount $82,500).
- USB, Develop and deliver best management practices and soybean cultivars to minimize yield and quality losses from Cercospora leaf blight, with Moseley, D., Grover, S., Padgett, B., Price, T., Reis, A., Allen, T., Rupe, J., Rojas, A. $274,983 (sub-awardee amount: $30,000).
- LSGRPB, Evaluation of fungicide application timing and cultivar resistance for management of Cercospora leaf blight on soybean, with Doyle, V., Price, T., Padgett, B., and Conor, L. $47,500.

Visiting Scientists/Students

- Jarrett Kirby, Southern University, student intern.

New Collaborations

- Carl Bradley (University of Kentucky) and Damon Smith (University of Wisconsin-Madison) to develop decision support systems for soybean pathogens in the South.

Tristan Watson

Invited Presentations

- Louisiana Sweet Potato Association Educational Program, Avoyelles Parish, Louisiana. Dec. 6, 2023. “Nematode management update.”
- LSU AgCenter Pesticide Applicator Recertification for RUP Salespersons, Alexandria, Louisiana. Nov. 2, 2023. “Nematode management.”
- Organization of Nematologists of Tropical America conference, Cairo, Egypt. Sept. 25, 2023. “Integrated nematode management in cotton: a Louisiana perspective.”
- Organization of Nematologists of Tropical America conference, Cairo, Egypt. Sept. 27, 2023. “Opportunities for education and training in nematology in the United States.”
- LSU AgCenter Sweetpotato Research Station Field Day, Delhi, Louisiana. Aug. 31, 2023. “Treatment for nematodes.”
- LSU AgCenter Sugar Research Station Field Day, St. Gabriel, Louisiana. July 19, 2023. “Nematode management in sugarcane.”
- LSU AgCenter Fruit and Vegetable Field Day, Baton Rouge, Louisiana. May 31, 2023.

Other Presentations

- Beltwide Cotton Conference, New Orleans, Louisiana. Jan. 5, 2023. “Utility of new resistant cotton cultivars for management of reniform and southern root-knot nematode in Louisiana.”

Refereed Publications

- Klasson, K.T., Qi, Y., Bruni, G.O., Watson, T.T., Pancio, B.T., Terrell, E. 2023. Recovery of aconitic acid from sweet sorghum plant extract using a solvent mixture and its potential use as a nematicide. “Life” 13(3): 724.

Awards and Honors

- Silver Anvil Award in Issues Management, Public Relations Society of America.

Committees

- Organization of Nematologists of Tropical America, vice president.
- National Sweet Potato Collaborators Group, chair-elect.
- Regulatory Committee, Society of Nematologists, chair.
- IR4 Project, state liaison.
- National Cotton Council Nematode and Seedling Disease Committee, member.
- PPCP Awards Committee, chair.
- PPCP Graduate Admissions Committee, member.
- PPCP Social Committee, member.
- PPCP Graduate Student Association, faculty advisor.

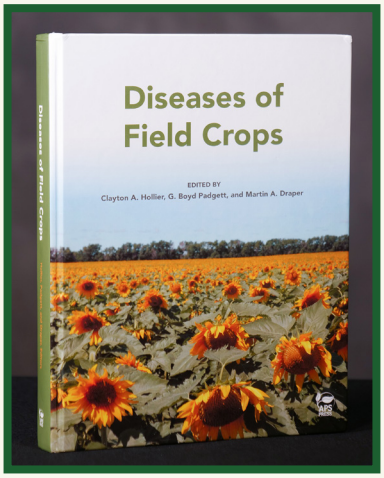
Grants and Contracts

- Louisiana Sweet Potato Commission, Optimizing nematicide application methods for management of reniform nematode on sweetpotato. $4,000. 2023-2024.
- United Soybean Board, Expanding the genetic base of southern root-knot nematode resistance in soybean. With Vieira, C., Grover, S., Nguyen, H., Faske, T. $282,920 total; $22,716 subgrant to LSU AgCenter. 2024.
- Mid-South Soybean Board, Southern root-knot nematode in maturity group 4 soybean: characterization of resistance mechanisms and breeding for resistance. With Faske, T., Grover S., Vieira, C., Nguyen, H. $65,000 total; $15,000 subgrant to LSU AgCenter. 2023-2024.
- American Sugar Cane League, Establishment of an integrated nematode management program for sugarcane. $11,000. 2023-2024.
- Louisiana Soybean and Grain Research and Promotion Board, Influence of winter cover crops on nematode population development and soil health in a soybean/corn rotation. $30,000. 2023-2024.
- Louisiana Soybean and Grain Research and Promotion Board, Evaluation of reniform nematode resistance in soybean cultivars planted in Louisiana. With Moseley, D., Price, P. $30,484. 2023-2024.
- Syngenta Industry Trials. $46,000.
- Bayer Industry Trial. $4,500.
- HumaGro Industry Trial. $5,500.
- Certis Biologicals Industry Trials. $14,000.
- UPL Industry Trial. $6,000.
- Corteva Industry Trial. $14,000.

Visiting Scientists/Students

- Natalia Freitas, Brazil, visiting scholar, November 2023 to April 2024.
- Cira Rivera, UNA, visiting student, November 2023 to April 2024.
- Leonel Calix, UNA, visiting student, June to November 2023.
- Karla Guardado, UNA, visiting student, June to November 2023.

APS PRESS PUBLICATIONS BY PPCP FACULTY



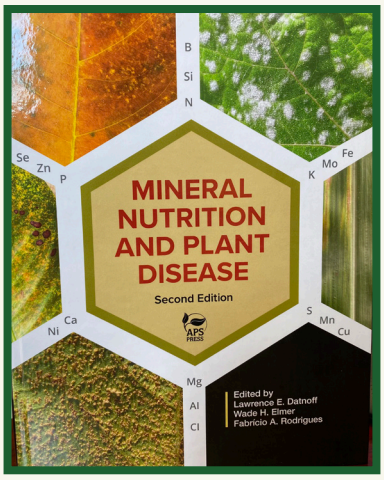
New crop disease reference book edited by AgCenter scientists

"Diseases of Field Crops" is a new crop disease reference guide co-edited by two LSU AgCenter-affiliated plant pathologists and designed to aid students, crop consultants and producers for decades to come.

"Diseases of Field Crops," a 400-page reference guide, details disease symptoms of 22 major field crops with more than 800 high-quality photographs.

G. Boyd Padgett, an AgCenter plant pathologist, and **Clayton A. Hollier**, AgCenter professor emeritus, partnered with Martin A. Draper, associate dean for research and graduate programs in the Kansas State University College of Agriculture, to assemble the book. They worked with 49 authors to create the guide, which was published in the spring of 2023 by APS Press.

The chapters focus on individual crops and provide descriptions of diseases and the best disease management practices.



The first book to combine mineral nutrition and plant disease gets updated

"Mineral Nutrition and Plant Disease" was the first book to successfully combine the two important plant science disciplines of nutrition and pathology. Soon after its publication by APS Press in 2007, the book received a CHOICE Award for best academic title in science and technology, and for more than 15 consecutive years, it has remained a top-five APS Press bestseller.

The tremendous success of the first edition inspired the publication of an updated edition. "Mineral Nutrition and Plant Disease, Second Edition," edited by **Dr. Lawrence E. Datnoff**, Wade H. Elmer and Fabrício A. Rodrigues, covers advances made in mineral nutrition and plant disease, showcasing the most recent scientific findings in much greater detail than in the previous edition.

Discussions of the relationships of macro-, micro- and beneficial nutrients to plant diseases have been updated with current findings and new hypotheses. New chapters on selenium and the rare earth elements show their positive impacts on reducing the development of plant diseases. In addition, the second edition presents exciting new developments in nanotechnology. Many plant nutrients behave differently when applied in the nano scale. Enhancing delivery and efficacy with reduced rates of nanonutrients has created a new sustainable weapon for managing plant diseases with nutrition.

Within the original chapters, many updates have been provided by new authors:

- A better understanding of the role of nitrate in activating host defense responses.
- Greater attention to beneficial microorganisms and how they help with phosphorus uptake and interact with plant pathogens.
- New findings regarding the effect of calcium on the activities of plant enzymes and their association with biological control.
- A new section on soil fertility management to control diseases in conventional and organic agriculture.
- New research on the effects of aluminum on plant pathogens and suppression of the diseases they cause in the context of mineral and organic soils.

Readers will understand the physiological role of each element in the plant and how it contributes to disease, gaining practical and current information for immediate disease management. This valuable resource will serve professionals and students in the agrisciences in addition to growers, industry professionals and extension personnel.

Whether utilized as a professional resource for managing plant diseases through nutrition or as an introductory text for courses in plant pathology and related areas, "Mineral Nutrition and Plant Disease, Second Edition" will help you break new ground in the fight against plant pathogens.

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