

CAFS

MAGAZINE

SPRING 2022

TAKING ON

THE PEST



PROBLEM

GLOBAL

- ^^ HONEY BEE HABITATS
- ^^ STRENGTHENING BEE HEALTH

OUTREACH

- ^^ HORTICULTURE INNOVATION LAB
- ^^ EMPOWERING SMALL FARMERS

RESEARCH

- ^^ CACAO FARMERS
- ^^ IDENTIFYING QUALITY BEANS

STUDENT SUCCESS

- ^^ MOGULS IN THE MAKING
- ^^ FAMU TEAM WINS SCHOLARSHIP



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CAFS Magazine Spring 2022

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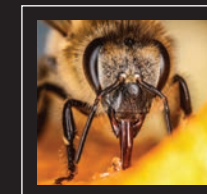
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PG. 10 MUST READ IN THIS ISSUE featured



Honey Bee Habitats PG. 16
STRENGTHENING BEE HEALTH

Greetings,

Greetings and welcome to the fall 2021 edition of CAFS Magazine, where we feature successes across the College of Agriculture and Food Science (CAFS), with a special emphasis on research achievements by our distinguished faculty and staff and our outstanding students. In 2022 and moving forward, we continue to strive for excellence in serving the needs of our communities in the tri-part areas of research, academics, and outreach. In our commitment toward excellence to our students, we continue to offer programs that prepare them to have a mastery of their field of expertise as it evolves, thus being readily employable and ready for the next higher level.

As a distinguished doctoral and research institution, Florida A&M University (FAMU) works to address climate change, food insecurity and other emerging issues through innovative research, engaging cooperative extension programs, and public service.

Florida is the second-fastest growing and largest state in the country, according to recent U.S. news reports. Its agriculture is uniquely diverse, and its changing demographics and consequent needs drive us to continually develop appropriate research programs that address key challenges to sustainable development.

CAFS research programs have a particular focus on the needs of small to medium-scale, limited-resource farmers and industry, as 90 percent of Florida's farms fit the definition of a small farm. This makes our research mission particularly crucial in enhancing the overall economy of the state and improving its food security. Our research at FAMU CAFS not only helps local communities, but it has a positive impact around the world. We look forward to engaging more in successful collaborations to fight global hunger and advance and sustain agricultural and natural resources.

"Great things happen in CAFS every day."

Robert Taylor
Robert W. Taylor, Ph.D.

Dean and Director of Land-Grant Programs
College of Agriculture and Food Sciences



FAMU Speaks

FLORIDA GLOBAL FOOD SECURITY SUMMIT

"The grant will permit me to study the use of more environmentally friendly and sustainable methods, such as biopesticides to control this pest, as the conventional methods use toxic chemicals, which can have a negative impact on our environment."

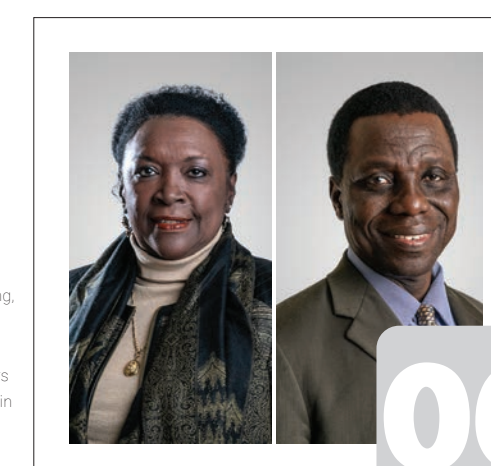


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Horticulture Innovation Lab

AIMS TO EMPOWER SMALL FARMERS

CAFS and FAMU-FSU joint College of Engineering, are working on a possible aerospace application of using 3D printers to build structurally and functionally adaptable Personal Food Computers (PFCs) that would produce food in space and/or in other planets like Mars.



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TAKING ON PESTS

FAMU HELPS GROWERS MANAGE SERIOUS PEST PROBLEMS

It is no secret that there is a common stereotype among the youth regarding agriculture. Their current image is that of people working in the field, an old man dressed in overalls with a plow, a job done by poor people with a low level of education, or a combination of all of the above. As a matter-of-fact, when I spoke with several non-agriculture major students on campus, they echoed basically the same sentiments.



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IDENTIFYING QUALITY BEANS



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FAMU Speaks at Florida Global Food Security Summit

Leaders Discuss State Efforts to Strengthen Global Food Security and Nutrition

Adapted from story by Jenny Jacobs, with contributions by Cynthia M. Portalatin

Florida A&M University (FAMU) recently joined the Kyle House Group, Eleanor Crook Foundation, Farm Journal Foundation, American Farm Bureau Federation Florida Farm Bureau Federation, and the University of Florida (UF), in hosting a virtual briefing on Florida's leadership in agriculture research and development, production, and international trade to end hunger and malnutrition.

The 2021 Florida Global Food Security Summit, held November 19, included a series of panels aimed to connect the global food security agenda back to the state's farmers, ranchers, universities, businesses, faith-based and civil society organizations. Nearly 811 million people faced hunger and 768 million were undernourished in 2020, according to new estimates from the Food and Agriculture Organization of the United Nations.

Moderated by Porter DeLaney, Founding Partner at Kyle House Group, the summit also included elected officials, local, and global leaders. Opening remarks were shared by Robert Taylor, Ph.D., Dean and Director of Land-Grant Programs, FAMU College of Agriculture and Food Sciences; Dale Moore, Executive Vice President, American Farm Bureau Federation; J. Scott Angle, Ph.D., UF Vice President of Agriculture and Natural Resources; and Carrie Castille, Ph.D., Director, U.S. Department of Agriculture's National Institute of Food and Agriculture.

"FAMU works to address climate change, food insecurity and other emerging issues through innovative research, engaging cooperative extension programs, and public service," said Taylor during his remarks at the Summit. "Our research programs have a particular focus on the needs of small to medium scale, limited-resource farmers and industry. Ninety percent of Florida's farms fit the definition of a small farm. This makes our research mission particularly crucial in enhancing the overall economy of the state and improving its food security."

"In order to provide solutions to the problem of food insecurity, we need the innovative solutions that science will bring. Science is able to provide us with knowledge about the situation and the solution," said Omolola Betiku, Ph.D., FAMU CAFS assistant professor, who was also a featured panelist at the Summit. "For us to be able to fight food insecurity all over the world, we need to fight it together through science. And that is what we are doing at Florida A&M University."



Ninety percent of Florida's farms fit the definition of a small farm. This makes our research mission particularly crucial in enhancing the overall economy of the state and improving its food security.

- Robert Taylor, Ph.D.
Dean and director of land-grant programs, FAMU CAFS





Robert Taylor, Ph.D.,
FAMU CAFS dean and director of land-grant programs

Betiku spoke about FAMU's work in helping to fight global food insecurity through a project funded by the U.S. Agency for International Development. The five-year \$15 million research program awarded to the University of California-Davis will help lead global efforts to advance production, handling, and consumption of fruits and vegetables as part of a Feed the Future Innovation Lab for Horticulture of which FAMU is a partner through its Center for International Agricultural Trade Development Research and Training.

"Malnutrition isn't just going to bed on an empty stomach. It's life or death. Even before COVID, malnutrition was responsible for half of child deaths around the world - with over 3 million children dying, from severe malnutrition, every year," said Will Moore, CEO of the Eleanor Crook Foundation. "What motivates me when confronted with this harsh reality is this is a problem with a solution. This summit shows how Florida is a strong example of a state where the agriculture sector is working together to end global hunger and malnutrition."

A full recording of the summit can be found here:
bit.ly/35iypFA

ABOUT FLORIDA A&M UNIVERSITY, COLLEGE OF AGRICULTURE AND FOOD SCIENCES (FAMU CAFS)

Florida Agricultural and Mechanical University's College of Agriculture and Food Sciences enjoys a rich educational history because of its history as an original land-grant component of the university. Through the tripartite concept embraced by the land-grant institutions, its students are fully prepared by integrating teaching, research and outreach to become highly qualified professions in the agriculture and food sciences professions. The College boasts three Research Centers, which are the drivers of scientific discovery, dedicated to specialized research in the areas of – viticulture and small fruit, water resources and biological control. Our students are afforded the opportunity to work under the guidance of world-renowned scientists on innovative research, intended to sharpen their scientific skills, conduct their own research, contribute solutions to global challenges and develop collaborations with other scientists.

ABOUT THE ELEANOR CROOK FOUNDATION

The Eleanor Crook Foundation is a growing U.S. philanthropy fighting to end global malnutrition through research, policy analysis, and advocacy. The Foundation works to scale improved solutions to child malnutrition, with the ultimate goal of saving children's lives and enabling them to excel in school, work, and beyond.

ABOUT KYLE HOUSE GROUP

The Kyle House Group advises and represents a number of leading foundations, NGOs and international organizations on global development and health issues. Specifically, we help lead various advocacy and outreach campaigns on topics including economic development, malaria, vaccines, clean water, nutrition, international reproductive health, international conservation, aid effectiveness, and agriculture development, among others. KHG also represents and advises a number of leading multinational companies on their corporate social responsibility efforts.

ABOUT UNIVERSITY OF FLORIDA INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES (UF/IFAS)

The mission of UF/IFAS is to develop knowledge relevant to agricultural, human and natural resources and to make that knowledge available to sustain and enhance the quality of human life. With more than a dozen research facilities, 67 county Extension offices, and award-winning students and faculty in the UF College of Agricultural and Life Sciences, UF/IFAS brings science-based solutions to Florida's agricultural and natural resources industries, and all Florida residents.

ABOUT AMERICAN FARM BUREAU FEDERATION

Farm Bureau is an independent, non-governmental, voluntary organization governed by and representing farm and ranch families. Farm Bureau is local, county, state, national and international in its scope and influence and is non-partisan, non-sectarian and non-secret in character. Through collaboration and partnership with state Farm Bureaus and operating with integrity, the American Farm Bureau Federation is the national advocate for farmers, ranchers and rural communities. This includes engaging consumers to build trust in, and share the story of, agriculture. AFBF also strives to develop programs and tools that help farmers and ranchers succeed in business and leadership.



**For us to be able to
fight food insecurity
all over the world,
we need to fight it
together through
science.**

- Omolola Betiku, Ph.D. ▶
Assistant Professor, FAMU CAFS



Horticulture Innovation Lab Aims to Empower Small Farmers

By Matt Marcure,
with FAMU contributions by Cynthia M. Portalatin

Florida A&M University's (FAMU) Center for International Agricultural Trade Development Research and Training (CIATDRT) will help lead global efforts to advance production, handling, and consumption of fruits and vegetables as part of a five-year, \$15 Million award to the University of California-Davis, from the U.S. Agency for International Development (USAID) for its Feed the Future Innovation Lab for Horticulture of which FAMU is a partner.

"One of our main objectives, as we lead FAMU's effort within the Horticulture Innovation Lab, is to help the targeted communities develop the much needed sustainable solutions to the challenges faced globally within the horticultural value chains to improve productivity, incomes, and livelihoods," said Harriett A. Paul, CIATDRT and International Agriculture Programs Director for FAMU's College of Agriculture and Food Sciences (CAFS).

"One of the most important aspects of food safety in the global food supply chains is pest management. As climate changes, economic losses due to insect pests will increase, thus, we will contribute to the implementation of successful integrated pest management strategies for the communities we will serve," said Lambert H. B. Kanga,

Ph.D., Director of FAMU's Center for Biological Control, who will serve as lead scientist for Entomology/Integrated Pest Management (IPM) program as he joins the FAMU CIATDRT in this effort.

"As we move forward with the project's implementation, there may be additional opportunities for FAMU faculty members to participate," said Paul.

Locally Let, Globally Supported

USAID will provide a base \$15 million investment over the next five years, with up to \$34.5 million total funding possible to support this global research program and consortium, led by the University of California-Davis. This competitive program was first awarded to UC Davis in 2009 and renewed in 2014.

The global consortium aims to help develop sustainable, local expertise and innovative technical and social solutions for horticulture producers and their communities. The consortium consists of: Florida A&M University, Michigan State University, Texas A&M University, UC Davis, and the World Vegetable Center, along with subject matter experts from Penn State University and Making Cents International, to help manage this program.

Within the consortium are partners and specialists with expertise in horticulture, agronomics, agri-sociology,



Harriett A. Paul, Director of International Agriculture Programs and CIATDRT within FAMU's College of Agriculture and Food Sciences, will lead FAMU's efforts in a seven-member consortium for a five-year \$15 Million award for the USAID Feed the Future Innovation Lab for Horticulture.



Lambert H.B. Kanga, Ph.D., Professor and Director, Center for Biological Control, College of Agriculture and Food Sciences will co-lead FAMU's efforts in a seven-member consortium for a five-year \$15 Million award for the USAID Feed the Future Innovation Lab for Horticulture.

agribusiness and agri-policy. The Horticulture Innovation Lab will convene these global, regional, and local experts to determine research needs in each geographical area, and the team will emphasize a holistic, locally led approach to build community resilience and support inclusivity.

The Horticulture Innovation Lab will work with and promote local leadership in communities across the globe while focusing their efforts in West Africa, East Africa, South/Southeast Asia and Central America. At the forefront of their research is the development of environmentally sustainable, market-oriented production and post-harvest handling methods that improve income for smallholder farmers and other stakeholders in fruit and vegetable value chains, as well as providing them more access to nourishing fruits and vegetables.

Building on Fertile Grounds

Fruits and vegetables provide vital nutrients for healthy communities, empower women and youth, and improve overall sustainability in production systems – this was the central tenet informing all of the work that the Horticulture Innovation Lab did during its first 10 years.

As a direct result of the Horticulture Innovation Lab's work, more than 750 horticultural technologies are now available for transfer and scaling in communities across the globe. More than 32,000 farmers are applying or using

these technologies as a result of the lab and its network's collective work, and more than 13,000 hectares of land are under new management practices.

The Horticulture Innovation Lab produced a number of innovative technologies, including a chimney solar dryer that more efficiently dries and preserves fruits and vegetables for long-term storage, and a simple tool called the DryCard that lets farmers know if food is safe for dry storage.

Additionally, researchers facilitated the adoption of improved agricultural methods, such as drip irrigation in Guatemala, and conservation agriculture for vegetable production and a packinghouse in Cambodia, that led to climate and social resilience.

The Horticulture Innovation Lab is a part of Feed the Future, the U.S. government's initiative to combat global hunger and poverty. It brings partners together to help some of the world's poorest countries harness the power of agriculture and entrepreneurship to jump-start their economies and create new opportunities.

For more information visit: www.feedthefuture.gov.



FAMU HELPS GROWERS MANAGE SERIOUS PEST INSECTS

Finding Cost-Effective Ways to Track, Monitor, and Manage Invasive Pests and Beneficial Insects

By Cynthia M. Portalatin
with contributions by Muhammad Haseeb, Ph.D.

Insects are among the most diverse group of living organisms in the world, and their diversity is rich, with known species numbering in the millions. Some can be a formidable challenge for farmers, destroying crops through vectoring disease. Yet many some can also be useful allies in helping to protect crops from undesirable pest insects.

A Florida A&M University (FAMU) research team led by Center for Biological Control (CBC) Associate Professor of Entomology Muhammad Haseeb, Ph.D., is designing and developing cost-effective tools and strategies to detect, monitor, and manage pest insects in fruit, vegetable and tree nut specialty crops. These cost-effective tools and strategies are useful to increase crop productivity and profitability for small-scale growers.

“Insects play critical roles to sustain ecosystems and agroecosystems,” said Haseeb, who, as an entomologist, studies insect roles and manages them to support production systems and natural resources.

“In the Florida panhandle, we have been monitoring these pests, focusing

mostly on Leon, Gadsden, and Wakulla Counties. By using pheromones, specific insects can be collected and their presence confirmed in a particular season. This allows us to detect the pests on time; so that they can be managed. Each insect species is attracted to either specific host color, stimulant, or pheromone.”

After collecting the insects from the monitoring traps, the specimens are identified and diagnosed.

“To manage these pests when their numbers are high in the open fields, proper management strategies are used to reduce their negative impact on the yield and quality of the produce,” Haseeb said. “Timely intervention is the key. This research helps specialty-crop, small-scale growers to improve their crop productivity and profitability.”

Specific pest management and monitoring tools and techniques include monitoring traps, baits, pheromones, selective biocontrol agents, and selective cultivars. These are recommended to farmers in different production systems [natural, integrated pest management (IPM), organic, and conventional] to minimize pest damage

and increase the productivity of the farm.

“With the indiscriminate application of pesticides, pests can develop resistance, and then these tools are of no more benefit to farmers. Therefore pesticide rotation is advised. In addition, conservation of biocontrol agents is preferred. Our role is to help growers in decision making along their seasonal crop production and protection goals. Indeed, the growers make their own final decisions in using specific tools and strategies to manage serious pests while conserving the beneficial insects at their farms,” said Haseeb.

Haseeb has trained many undergraduate and graduate students under grant-funded research projects funded by U.S. Department of Agriculture (USDA) agencies, including the Animal and Plant Health Inspection Service (APHIS), National Institute of Food and Agriculture (NIFA), Foreign Agricultural Service (FAS), and McIntire-Stennis research programs. Under these projects, he works with local, national, and international collaborators to support stakeholders and clientele.

What Are Students Learning?

In September 2021, when this story's interviews took place, Haseeb's research team of FAMU entomology graduate students was in the process of installing insect pest traps in open fields of chestnuts, green beans, muscadine grapes, okra, persimmons, and sweet corn located at the FAMU Center for Viticulture and Small Fruit Research. Students shared some of their experiences working with Haseeb on this research:

Ouyang Haoyong

is a doctoral degree-seeking student from south China, near Hong Kong, pursuing a doctoral degree and working with Haseeb on the sweet potato weevil, a serious pest in the storage and open fields. He has published his work in two peer-reviewed journals and presented his scientific findings at the Entomological Society of America and the 1890 Association of Research Directors Symposium.

"I'm investigating the behavior of the sweet potato weevil. They have a very weird behavior. If we artificially induce them, they will play dead, and after a few minutes, they will become awake again and start a normal life," he said. "A Chinese Academy of Sciences student, he is expected to graduate in the fall 2022 semester, and he hopes to return to the United States to continue post-doc research on insect behavior."

Larisner Simeon

began his graduate studies in entomology at FAMU in the fall 2021 semester and is conducting research on the coconut palm and its invasive pest, the palm weevil, under Haseeb's supervision.

"It will be very useful in solving those issues in my own community," said Larisner, who is from Haiti, where the coconut palm is an economically important food crop. "I'm really excited about this opportunity because I will learn how to identify, detect, monitor and manage serious pests. This will help me to train small-scale growers. Our biological control class with Dr. Haseeb was a great experience."

Chinemenma Okoroji

graduated from FAMU CAFS in spring 2020 with a master's degree in entomology. Originally from Nigeria, she now works with Haseeb and his team to support students in the lab and field as well as mentor his unit's incoming students and summer interns.

Timely intervention is the key. This research helps specialty-crop, small-scale growers to improve their crop productivity and profitability.

-Muhammad Haseeb, Ph.D.,
Associate Professor of Entomology,
FAMU CAFS Center for Biological Control



Kristen Joy Adkins (Joy),

a first-year FAMU entomology graduate student from Dover, Delaware, is working under Haseeb's supervision on a research project developing Lucid Digital Key and modeling geographical distribution of invasive insect species, which includes uploading high-definition images of insects and their diagnostic characters useful for insect identification. This machine learning technique is used at ports of entry to support trade and food security.

"Modeling and predicting future invasion of invasive pests is critical to alert stakeholders and clientele for timely pest management to sustain food security," said Haseeb.

Adkins, who also earned a Bachelor of Science degree in entomology from FAMU's College of Agriculture and Food Sciences (CAFS) in 2021, is also researching specific literature on the food availability and climate change affecting these pest patterns, globally.

"I like learning about invasive species and how they affect the environment where they invade," she said. "I'm going to get better at using these computer-based interactive tools that are becoming more necessary, such as Arc GIS, MaxEnt on a productive scale. Using those platforms will be extremely beneficial to scientists and growers."

Bethany Noel,

a first-year FAMU entomology graduate student from Lawrenceville, Georgia (Metro Atlanta), said she became interested in entomology last summer after receiving training from Haseeb and has since joined his research team in the field installing insect traps in the specialty crops. She will soon begin working on the digital identification of invasive insect species using the Lucid software. Noel earned her bachelor's degree in physical therapy from FAMU Allied Health Sciences.

"It was a major switch! Over the summer (2021), I had a chance to meet with Dr. Haseeb and Dr. (Lambert) Kanga about an opportunity to work with invasive species and food sciences, and it resonated with me," said Noel. "After studying the body (in my previous major), taking that and converting it to insects and invasive species, I'm learning how they affect the crops. It's definitely something new, and I am enjoying it."

She said, upon graduation, she looks forward to working more with invasive insect species and would like to work for the state of Florida, as well earn a doctoral degree in entomology.

Sharise James,

a second-year FAMU entomology graduate student who also earned a bachelor's degree in animal science from FAMU CAFS, said she began research work with Haseeb in the summer of 2020 after he helped her with a federal internship and encouraged her to join the entomology program. The Tallahassee, Florida, native is helping develop cost-effective traps that are more stable under extreme environmental conditions and are economical for small farm growers to use for monitoring a newly-invaded invasive pest insect, the brown marmorated stink bug from Southeast Asia. James is also working on exploring native beneficial species – parasitoids and predators – that could control this pest effectively in the Florida panhandle.

"The most interesting thing is looking at the number of insects increase from last year to this year and looking at their behavior," said James. She hopes to work with USDA APHIS in the future to help identify and manage serious pest insects.



Some of Haseeb's time is dedicated to developing new capacity-building efforts. During the last five years, most of his research projects have been geared toward small-scale growers on how to handle pests and increase crop production. He said food security and climate challenges have direct and indirect impacts on agriculture.

"Recent years have seen serious challenges from pest insects such as the brown marmorated stink bug, citrus psyllids, citrus weevils, pepper weevil, spotted-wing drosophila, sweet potato weevil, and whiteflies. Some of these insects are vectors of bacterial and viral diseases and cost hundreds of millions of dollars to control them in Florida and the nation. Our small-scale growers need cost-effective tools and strategies to manage these pests to increase crop productivity and profitability," said Haseeb.

Haseeb's Teaching Philosophy:

In brief, Haseeb said his teaching philosophy is to promote positive learning and inspire students' enthusiasm for life-long learning. In his own words, he said:

"A good teacher provides opportunities that are challenging yet supportive to students. Learning is not a passive process; it requires motivation, effort, and persistence. My responsibility to students is to provide a strong foundation for life-long learning. I have developed a firm foundation in assessment basics, from alternative types of assessment to traditional exams and tests. I teach my students how to locate and review scientific primary journal articles and challenge them to synthesize and evaluate the information they find. I lead my students on an intellectual journey through their courses, expectations,

performances so that they are successful.

"This is my 21st year serving the land-grant mission of the University. In my academic unit, I teach several graduate and undergraduate courses including biological control, insect ecology, insect morphology, integrated pest management, systematic entomology, invasion biology, and insects, people, and environment - a fully online course. I also supervise MS and Ph.D. students' graduate theses and dissertations. I am very fortunate to be part of FAMU entomology program and its legacy.

"I am blessed with a team of collaborators from USDA APHIS and ARS, 1890 and 1862 universities, and international partners who jointly work with me to achieve further success for my unit and effectively support our stakeholders and clientele."



(Right) Muhammad Haseeb, Ph.D., Associate Professor of Entomology, and his students servicing a trap for brown marmorated stink bug in chestnut trees.

FAMU Center for Biological Control (CBC)

Established in 1999, the mission of FAMU's Center for Biological Control (CBC) is to generate, apply and transfer innovative, ecologically based solutions to pest problems affecting agriculture, natural resources, and human health while developing the human capacity for continued future

innovation. The Center consists of a unique partnership between FAMU, the USDA Agricultural Research Service (ARS), and the USDA Animal and Plant Health Inspection Service (APHIS), and it continues to successfully deliver on its mission. Its faculty have developed a biologically-based control strategy for

the two major pests of honey bees, the Varroa mite and the small hive beetle. Research outcome from the Center plays a key role in offshore mitigation of destructive invasive species such the red palm weevil in the Caribbean (a high-risk threat to U.S. Agriculture).



(Above Left) Entomology graduate students Bethany Noel and Kristen Joy Adkins examine chestnuts in the field at the Center for Viticulture and Small Fruit Research.

(Above) Associate Professor of Entomology Muhammad Haseeb, Ph.D., shows a healthy persimmon fruit free of pests

Honey Bee Habitats, Nutrition Studied to Strengthen Bee Health

By Cynthia M. Portalatin

Walking through several honey bee habitat areas during a late September afternoon, Worrel Diedrick, a doctoral degree entomology major and Ph.D. candidate at Florida A&M University (FAMU), is comfortable allowing visitors into zippered, netted flight cages and high tunnels full of honey bees he tends to without fearing a sting.

"The bees are usually more active during early afternoon, but this late in the evening, they have already foraged and are calmer now," Diedrick says.

He checks on flowering pots of anise hyssop, basil, sweet alyssum and marigolds evenly spaced in the rear of the flight cage, as a few honey bees forage on the plants.

Diedrick manages 21 honey bee habitat areas consisting of flight cages and three high tunnels located at the FAMU Research and Extension Center in Quincy, Florida, as part of his graduate research project titled "Impact of the ectoparasitic Varroa mite (*Varroa destructor* Anderson and Truman) (Acari: Varroidae) and nutrition on honey bee (*Apis mellifera* L.) (Apidae: Hymenoptera) health." Funded by the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), the project began in 2018 and will end in 2023.

The habitats have uniform honey bee populations that are divided into four treatments – with each treatment having a specific nutritional source for the bees. Treatments one to three are carried out in 15 flight cages, with five flight cages per treatment. Treatment four is carried out in three high tunnels, with each high tunnel divided into two, creating six

experimental units. The companion crops used in these experiments were evenly spaced and covered about 10 percent of the total area in the flight cage, and serve as food source of pollen and nectar for the bees.

A Focus on Enhancing Bee Health

"My research focuses on honey bee malnutrition and the most serious honey bee pest around the world, the Varroa mite," says Diedrick, who is originally from Jamaica. He wants to help reduce the decline in honey bee populations by developing best beekeeping practices to enhance honey bee health, a solution he hopes will also help farmers in his home country.

"Right now, honey bees are on the decline when we need them the most," says Diedrick. "I hope to develop affordable and sustainable microbial control strategies to manage Varroa mites in honey bee colonies." This will reduce the use of pesticides in beehives that often leave chemical residues in the honey and honey products.

"I would also like to evaluate the effects of nutrition on honey bee health through colony strength and gene expression. Like any other organism, nutrition is key to a



Right now, honey bees are on the decline when we need them the most.

-Worrel Diedrick, entomology Ph.D. candidate

healthy life, and the honey bee is no exception. With proper nutrition, the honey bee population will be stronger and live longer simply because they will be able to defend themselves against pests and diseases.”

Honey bees, among other native and non-native bees, are important to agriculture because of their role in crop pollination. The most important thing that bees do is pollinate plants by transferring pollen from one flower to another as they feed on nectar and pollen from flowering plants. Bee pollinated crops will more readily flower and fruit. Honey bees are responsible for about 85 percent of crop pollination.

“It is often said, if there is no pollination, there will be no food,” says Diedrick. He adds that approximately 56 percent of farmland in the United States is used for monocropping, a system that is not ideal for insect pollinators who need a diverse food source.

“I would like to contribute to the honey bee industry by equipping our farmers with best beekeeping practices to better care for the honey bee and our native bee population. For example, adding wildflowers along hedge-rows can complement and balance the diet of pollinators such as the honey bee,” says Diedrick. “More bees for pollination will result in crop yield increase for farmers and more fruits, vegetables, and other food products for consumers.”

As part of his research project, samples of eight adult honey bees are collected every three weeks from each of the four nutritional treatments and later processed biochemical and molecular genetic analyses.



Worrel Diedrick, Ph.D. candidate in entomology, manages several honey bee habitat areas located at the FAMU Research and Extension Center in Quincy, Florida, as part of his graduate research project that focuses on malnutrition and the most serious pest of honey bees around the world, the Varroa mite.

Why FAMU?

When asked why he selected FAMU for his graduate studies, Diedrick, who had previously earned a bachelor of science in biology from Northern Caribbean University in Jamaica, said it was as if FAMU chose him.

“I was working in Jamaica at the Ministry of Agriculture’s research and development laboratory. Even though I was in a job I liked, I was not comfortable with the long commute to work. Normally, on Fridays, I would leave work early to beat the heavy traffic, but this Friday was different, and I stayed longer for no apparent reason. In the evening, as I packed my bag to leave, I met Dr. Kanga and Dr. Haseeb, who were visiting the lab, and we discussed the possibility of graduate studies at FAMU,” says Diedrick.

Lambert H.B. Kanga, Ph.D., who is guiding Deidrick’s Ph.D. research, is Director of the FAMU Center for Biological Control (CBC). Muhammad Haseeb, Ph.D., is an associate professor of entomology at FAMU CBC.

Diedrick arrived at FAMU in 2015 and earned his Master of Science degree in entomology in 2018. He is working toward his Doctor of Philosophy degree in entomology in the Cooperative Ph.D. degree program between FAMU and the University of Florida (UF).

“I could not have done this research alone. Faculty members assist me with advisement and sourcing of materials for my project, while my fellow student peers assist me with the construction phase of the tunnels, apiary maintenance and plant nursery development,” he says.

He thanks many at both universities for helping him bring his current research project to fruition. He also thanks faculty and staff for their technical assistance and guidance.



Diedrick’s Ph.D. Supervisory Committee Members

- Lambert H.B. Kanga, Ph.D. – *Chair, FAMU*
- Rachel Mallinger, Ph.D. – *Co-Chair, UF*
- Manuel Pescador, Ph.D. – *FAMU*
- James Nation, Ph.D. – *UF*
- Blair Siegfried – *UF*
- Marta Wayne, Ph.D. – *UF*

Acknowledgments

- Donna Arnold, *student research assistant*
- Alejandro Bolques, Ph.D., *assistant director, FAMU Cooperative Extension Research Farm*
- Gerry Bryant, *FAMU senior agricultural assistant*
- Lee Bushong, Ph.D., *FAMU professor and bee farmer*
- Rashunda Kenon, *FAMU CBC office manager*
- Walker Marshal, *doctoral student, FAMU School of Environment*
- Almando Morine, *doctoral student, FAMU School of Environment*

- Fanny E. Ospina, *FAMU assistant technician*
- Christopher Oster, *lab manager, UF Honey Bee Research and Extension Laboratory*
- Jose Pardi, *FAMU farm manager*
- Janice Peters, *FAMU senior biological scientist*
- James Rish, *bee farmer*
- Pierre Rodrigue, Ph.D., *UF research assistant*

STUDY LINKS MUSCADINE GRAPES TO LONGEVITY, DISEASE PREVENTION

Can muscadine grapes increase longevity of life and prevent and treat disease? That is what Florida A&M University (FAMU) Assistant Professor Islam El-Sharkawy, Ph.D., has discovered through his research. El-Sharkawy and Protiva Das, Ph.D., a research associate at Virginia Polytechnic Institute and State University recently teamed up to study muscadine grapes and co-author a paper on their findings that was recently published in the high-impact scientific journal, *Antioxidants*.

The beauty of eating for longevity—prioritizing foods and drinks linked to adding years to your life—is that it does not require hunting down hard-to-find specialty foods or spending a lot of money. Muscadine grapes are native to the southern United States and commonly found at grocery stores across the country—especially during August through October, when they're in season.

Muscadine grapes are linked to longevity more than other grape species because they are higher in antioxidants, according to El-Sharkawy and Das. They also contain a higher quality of

flavonoids, a type of antioxidant linked to lowering blood pressure and the risk of heart disease.

"Muscadine grapes have a huge quantity of flavonoid components—almost 200 times higher than in the bunch grapes," said El-Sharkawy.

Das said the high flavonoid component is not all that makes muscadine grapes special – these types of grapes have a wider range of antioxidant types than other grapes.

"Some of these compounds are highly correlated with longevity, like gallic acid and catechine," said Das, adding that these antioxidants protect the human body from free radicals, which are unstable atoms that can damage cells.

El-Sharkawy said some of the research he is currently working on would determine if encapsulating these specific compounds could work to prevent or reduce the occurrence of certain types of cancers, particularly African American breast cancer.

Their published paper titled "Untargeted Metabolomics and Antioxidant Capacities of Muscadine Grape Genotypes during Berry Development" describes how three

muscadine grape genotypes were evaluated for their metabolite profiling and antioxidant activities at different berry developmental stages. According to El-Sharkawy, metabolites play crucial roles in the physicochemical characteristics, quality parameters, and nutritional benefits of grapes, and this knowledge is of great value for plant breeders aiming at developing new smart muscadine grape varieties with improved nutraceutical values.

The study's team members also include: Ahmed G. Darwish, Ph.D.; Ahmed Ismail, Ph.D.; Pranavkumar Gajjar, MS; Subramani Paranthaman Balasubramani, Ph.D.; Mehboob B. Sheikh, Ph.D.; Violeta Tsoolova, Ph.D.; and Sherif M. Sherif, Ph.D.

The team expressed sincere gratitude to the Viticulture Advisory Council (VAC), the Florida Grape Growers Association (FGGA), and the Muscadine Products Corporation for their continued support of their research.

El-Sharkawy and Das were also recently featured in the national publications "Well+Good" and "Women's World" highlighting the team's research.

Link to research paper by Islam El-Sharkawy, Ph.D., and Protiva Das, Ph.D., published in the scientific journal *Antioxidants*:

www.ncbi.nlm.nih.gov/pmc/articles/PMC8230005/pdf/antioxidants-10-00914.pdf

Link of the full feature story written by Emily Laurence and published in *Well+Good*:

www.wellandgood.com/muscadine-grapes-longevity/

Link of the full feature story written by Alexandria Brooks and published in *Women's World*:

www.womansworld.com/posts/nutrition/muscadine-grapes-longevity

Experts Referenced:

Islam El-Sharkawy, PhD
Assistant Professor, Florida Agricultural and Mechanical University

Protiva Das, PhD
Research Associate, Virginia Polytechnic Institute and State University



FAMU to Evaluate Florida's Supplemental Nutrition Assistance Program Education

Food Sciences Associate Professor Receives Over \$300K Grant from Florida Department of Health

By Cynthia M. Portalatin

Florida A&M University (FAMU) Associate Professor JENELLE N. ROBINSON, PH.D., received a grant award of \$371,948 to collaborate with the Florida Department of Health (DOH) in evaluating its Supplemental Nutrition Assistance Program Education (SNAP-Ed).

"We are tasked with the evaluation of nutrition education programming, policies, and associated activities for SNAP-Ed activities completed by DOH. Our evaluation reports will be shared with Florida DOH to improve programming and plan for any new initiatives," said Robinson, who has taught at FAMU since 2015 in the College of Agriculture and Food Sciences (CAFS) Food Sciences.

The Florida DOH was awarded funds to be a SNAP-Ed programming implementing agent in the state and contacted Robinson's office to be a collaborating partner. The SNAP-Ed program offers nutrition education to teach families how to make healthy food choices on a limited budget and to be physically active for good health. SNAP-Ed classes teach behavioral changes such as how to:

- Eat more fruits, vegetables and whole grains
- Drink fewer sugary beverages and reduce sodium intake
- Increase physical activity levels
- Maintain appropriate nutritional balance at all life stages

Robinson's SNAP-Ed 2021 Project activities include development of evaluation reports, trainings and subject-matter expertise in nutrition and gardening, and technical assistance for DOH county coordinators completing SNAP-ED programming. FAMU's evaluation reports will be shared with DOH to improve programming and plan for any new nutrition education initiatives.

Robinson's future research projects include evaluating long-term health and behavioral effects of nutrition education programming with SNAP-Ed audiences. She has another project, "Enhancing Student Success through Nutrition Leadership, Research, and Arts-Based Nutrition Education Curriculum Development" funded by a capacity-building grant from the U.S. Department of Agriculture, National Institute of Food and Agriculture, where students participate in faculty-led research projects and assist the FAMU Cooperative Extension Program with nutrition programming.

"My teaching philosophy is that in order for students to learn and develop, I must not only educate them, but I must empower them with engaging learning experiences and encourage participatory learning through research and programmatic activities," said Robinson.

In September 2021, Robinson also led an interactive two-day virtual series titled "Our Foods are Healthy: Culturally Appropriate Nutrition Education Training." The free virtual training was designed for all FAMU faculty and staff and included: best practices in incorporating cultural foods in nutrition and wellness education; live food demonstrations with recipes from Africa and the African Diaspora; and resources for improving cultural sensitivity in nutrition and health education.

During her tenure at FAMU, Robinson has taught the following courses: Nutrition; Nutrition in Health for Prevention and Disease; Community Nutrition; Food and Man; and Introduction to Agriculture Sciences. Robinson earned a Doctor of Philosophy in Nutrition from Mississippi State University, a Master of Arts in Dietetics from the University of Oklahoma, and a Bachelor of Science in Health Education from the University of Central Arkansas. She is also a Certified Health Education Specialist.

For more information on the DOH SNAP-Ed involvement, visit: www.floridahealth.gov/programs-and-services/community-health/snap-ed/index.html

For more information on the SNAP-Ed Program, visit: snaped.fns.usda.gov

Robinson may be contacted at: jenelle.robinson@famuedu

Food Science Research Helps Cacao Farmers Identify Quality Beans

By Cynthia M. Portalatin



Juzhong Tan, Ph.D., assistant professor for food sciences

There is a new professor in our College and he is serving up a popular sweet treat at Florida A&M University (FAMU). Juzhong Tan, Ph.D., assistant professor for food sciences, joined the College of Agriculture and Food Sciences (CAFS) faculty in mid-June of 2021. His

current research on cacao beans has already generated one patent prior to arriving at FAMU. He also has a patent on an artificial intelligence (AI) nose that makes it easier to identify quality cacao beans by their scent.

Tan recently received \$70,000 in funding from the 1890 Center of Excellence to support the research of the Valorization of Muscadine Grape

Pomace as a value-added ingredient to make chocolates with increased antioxidant and anti-cancer capabilities. The one-year project dates are January 1, 2022, through December 30, 2022.

Tan is also pursuing a patent on software to help farmers upload images of cross-section cuts of cacao beans to help identify whether the beans are of good quality. Using the software would be a lot less expensive to farmers than purchasing thousands of dollars of equipment, said Tan, who was first inspired to research cocoa production while a Ph.D. student at the University of Georgia.

"I began to get curious as to where it comes from, how it was manufactured. I was also getting curious about how the beans, the raw material, had been prepared (and) the manufacturing phases. Our lab was a food processing lab. So, we did all our own chocolate processing.

"By the second year of my Ph.D., a future collaborator of mine came to visit

the university, and he showed some of his equipment. That was when he offered me an internship," said Tan.

In 2017, he was invited by the government of Trinidad and Tobago to conduct cacao research which further increased his desire to research ways of detecting quality cocoa in a low-cost manner to help small farmers increase the quality of cacao production.

"At that time, I saw a presentation by a cacao farmer. Cacao farmers produce one of the most delicious delicacies in the world (chocolate), but they are poor. The problem is that they produce beans, but they cannot control the quality; so, their income varies.

"If they don't do the fermentation right and do the roasting right, then their bean prices plummet. The price of a good bean compared to the price of a bad bean can be a hundred times (different); it's a big deal," said Tan. "I would like to share this technology with people; I just want to see real people benefit from it."

Other research interests Tan is developing include:

- Cold-plasma emerging technology using ionized gas for decontaminating food processing systems.
- Extruding foods, and their processing conditions, to enhance nutrients.

Tan's research collaborators include:

- Violeta Tsoleva, Ph.D., director of the FAMU Center for Viticulture and Small Fruit Research.
- Balu Balasubramanian, Ph.D., chemist with Cocoa Town, LLC, in Atlanta, Georgia.
- Mukund Karwe, Ph.D., distinguished professor and dean of International Programs at Rutgers University's School of Environment and Biological Sciences.
- Shangpeng Sun, Ph.D., assistant professor in the Department of Bioresource Engineering at the Macdonald Campus of McGill University.

Tan foresees opportunities for CAFS students to assist him with research in the future, and he is working to facilitate student internship opportunities with some of his research collaborators. He will teach food fermentation and/or food processing as well as food engineering courses in the fall 2021 semester. FAMU students interested in Tan's research opportunities may contact him at juzhong.tan@famuedu.





AN INSIDE LOOK AT FAMU'S VET TECH PROGRAM, KEY TO INCREASE IN GRADUATES

By Cynthia M. Portalatin with contributions by Glen Wright, DVM

Veterinary technologists are essential to the art and science of animal health, as they provide necessary medical and clinical support to veterinarians and have a significant impact on animal health, research, biodefense, and food safety. The mission of the veterinary technology (vet tech) program at Florida A&M University is to educate students to become excellent veterinary technologists through exceptional academic and practical/technical training. One of only 23 in the nation that offers a four-year degree in veterinary technology, FAMU's vet tech program places emphasis on regulatory education and training that prepares students to pursue a multitude of careers in the veterinary field.

At the FAMU Animal Complex in Quincy, Florida, students learn and apply veterinary terms and concepts, professional skills, and ethical behavior under the guidance of FAMU's licensed veterinarians and technologists. The complex houses small ruminant, swine, and equine species for use in teaching, research, and extension, and it has a kennel unit capable of housing dogs and cats. FAMU's vet tech program is accredited by the American Veterinary Medical Association, which enables graduates to take the national certification examination.

CAFS communications met with Glen Wright, DVM, FAMU vet tech program director, to talk about their team's success in recruiting and retaining students. Following are excerpts from the interview:

What are you most proud about this school year about the vet tech program?

Let's say the elephant in the room is COVID, right? My faculty, staff, and I – collectively, we talked and agreed that we had to try to be “in person” as much as possible, or the program could not survive and function the way it should. So, we adopted almost a hybrid model, with our lecture didactic classes, which were remote. And as soon as we were allowed to, we had labs in person. I'm just proud that our faculty and staff were all on board

with trying to make the program function as well as possible and still meet our required standards for accreditation and in-person learning skills acquisition.

What are some of the things students learn when they're in the lab with hands-on experience?

We start off with simple things, like proper restraint in handling, how to properly get an animal out of the cage, how to properly put on a leash and collar, how to safely restrain animals – so that none

of the team members are bitten or scratched, and those types of things. Safety. Absolutely, safety first. And then we progress to physical exams, normal animal wellness, normal vitals, heart rates, and respiratory rates, all of those things. Then we progress to some of the more technical things, like blood draws and diagnostics, x-rays, anesthesia, and all of those types of things. You don't want a new student to come in and just throw a needle into their hands and say, “go get blood from that dog.” We test their skills, build their skills,

following certain progressive levels... their comfort level grows as well.

With our soon-to-be graduates, we're doing anesthesia right now. Some of them had no clinical experience at all. And this is how it happens at veterinary school, too. When you throw students with no clinical experience into clinical situations, they have no idea what to do. So, it makes us rethink how we want to administer the program. You really, want to require clinical hours each semester of the program, so that when you get to the end, you have hundreds of hours.

Every semester... every year, we reevaluate what we're doing. And we're trying to make the program better every single time, every single year, and every semester." In spring 2021, we had eight graduates. These students are ready. This is the largest group that we've had graduate. We should have at least four more in the summertime, too.

That's exciting. And are they going on to veterinary school or going straight into practice?

Nope. We purposely designed (our program) to not be the conduit to vet school. Our students are trained to be better at diagnosis, which in the profession is a veterinary nurse. It's more descriptive of what they do. We're training students for a career as a veterinary nurse or veterinary technician. Most of our students are probably going to go straight from school to work in a clinic. However, we do put an emphasis on non-traditional careers, and that would include: government work, research, pharmaceutical sales, pet food companies – all of those types of things that are either non-clinical or

non-traditional. And we absolutely want to emphasize that those careers are out there and are available.

What do you attribute to the success of recruiting and retaining students in the vet tech program?

Early recruiting (included) a lot of groundwork, visiting high schools. We have expanded our recruiting range and targeted it. At the same time, we have to acknowledge some of that early work where our name was being put out there, right into high schools and community colleges within the state. And as time has gone along, I think our students are helping to recruit for us. Graduates are out there. Every student that comes through here has to work in a clinic. We've moved to wearing uniforms, and they see our students out there. So there's branding going on.

We also have collaboration with local hospitals and animal shelters. The more we are in the community, the more notoriety we get. And as the students come through, we get a little more recruiting on social media.

Pre-COVID, 40 percent of our courses were at the farm. So, in the curriculum, 60 percent was on campus, 40 percent on the farm. And I think a lot of them, once they get to the farm and start doing animal stuff, they are engaged in the hands-on activities. I think that contributes a lot to the retention of the students. They get here, and they want to finish. They want to be involved, and they want to stay involved.

What's been the biggest challenge over the last year? Was it not being able to have classes in person?

I don't think that's the biggest challenge because once they're here, they're engaged in it, and they want to be here. Once the students get here, we talk about risk, and they accept the risk. We go over what we're supposed to do: masks, social distance... all of that. Them being here, really, that's the easy part. The challenge is getting them to pay attention on Zoom classes. That's the biggest challenge! If there were 10 people here, my camera's off, and I'm doing the work... I'm paying attention. But I'm doing other stuff too, and I think they kind of do that as well. When they do that, they think they are picking up (information), but they're not.

What do you enjoy most about working with students and teaching at FAMU?

I enjoy their excitement when they have discovered something in them, when they find out what they think they want to do, or they discover a new career path. Those are the best things. I enjoy the energy, when they are here at the farm. There's a different energy when the students are here versus when the students are not. I enjoy the energy that the students bring with them; the ones that truly have a love for the animals.

What would you advise students who are not sure what they want to do, but they know that they love animals?

I would say that there are so many opportunities in the animal veterinary field. I think the mistake that a lot of students make, at least early on, is thinking that becoming a veterinarian

is the only thing that you can do. There are so many other things in the animal field that can be pursued. I think that trying to explore those options as early as possible is a good thing. For example, there was a young lady in vet tech who didn't want to go to vet school. We discussed doing pre-vet versus vet tech. She decided to do vet tech and also try to pursue vet school. She got into the clinic and started doing clinicals, and she came to talk to me and said, "Oh, this is like, really bad."

I said, "No, this might be the best thing that has ever happened to you... You now get to not waste time and money pursuing something that you don't want to do." She's still on track. She just wants to research, not be in a clinic. That's totally okay. She loves animals and also likes to research. She has multiple applications to graduate school.

What kind of organizations, clubs or groups would you recommend a student join, to experience more professional growth while in school?

Particularly, while they're in school, we do have a vet tech club. We also have an animal science club, with which

there's some overlap. They are distinctly different clubs, but they do some things together.

Minorities in Agriculture, Natural Resources and Related Sciences (MANRRS) has always been a good thing for our students, in learning about opportunity, a place to build their oratorical skills, research, and connect with different employers. We encourage our vet tech students to become a part of the state association – the Florida Veterinary Technician Association – that helps keep them abreast of all of the activities and opportunities.

As you revisit the program and look at how to improve it, what are you focusing on?

I want to do more collaborative things with other institutions whether that be on the undergraduate level or the College of Veterinary Medicine level, for the technician side of the profession. With schools that have colleges of veterinary medicine and schools that have veterinary technology programs – I want to develop internships, more opportunities for our students to go and experience veterinary medicine at other places.

For example, pre-COVID, the University of Florida (UF) had a technician shadowing program. The student could schedule to shadow for a day in any of the specialty services at UF. Over the Christmas break of 2019, we had five students experience multiple services. It was great for them to go and see the hospital.

We're currently working with the University of Minnesota. We have a collaboration with them for pre-vet students. I also want to get something for the technician students. In certain states, credentialing is required for technicians to do certain things, and in other places credentialing is not required. A lot of the colleges of veterinary medicine, as leaders in their field, want to staff their hospitals with credentialed technicians – formally trained, passed-the-national-exam, certified technicians. So, if we can get our students in the door to these places with internships, this can almost guarantee their employment after they pass their national exam.

Where Are Some of FAMU's Vet Tech Graduates Now? *

Sachem Crafton – Novey Animal Hospital

Celia Garthwait – Capital Veterinary Specialists

Rachel Graham – State of Florida (Non-animal)

Travares Heath, DMV – Cy-Fair Animal Hospital (Veterinarian)

Keyana Johnson – Novey Animal Hospital

Ajiona Lunsford – VCA Veterinary Care Specialty and Referral Center Albuquerque, N.M.

Kayla Mckethan – Beringer Ingelheim (Top 20 global, pharmaceutical company)

Emily Nolen – FAMU Extension

Krystle Rivera – Birmingham Zoo

Hieu Tran – Jacksonville Animal Shelter

Shearvaris Winn – Jacksonville Community Pet Clinic

**This list includes CAFS alumni prior to 2021.*

For more information on the FAMU Vet Tech Program, Contact:

Glen Wright, DVM, director of veterinary technology

E-mail: vet.tech@famu.edu, glen.wright@famu.edu

Phone: (850) 599-8433

FAMU ASSOCIATE PROFESSOR RECEIVES FLORIDA CABINET PROCLAMATION

StateWide Small Farm Program Leader Noted for Her Significant Contributions to the Advancement of Sustainable and Alternative Food Systems

Florida A&M University (FAMU) congratulates **Jennifer Taylor, Ph.D.**, associate professor for the College of Agriculture and Food Sciences (CAFS) and coordinator of the FAMU StateWide Small Farm Program, on receiving multiple awards during 2020-2022. Most recently, she was honored with a Florida Cabinet Proclamation on February 1, 2022, reflecting her civic and community involvement, significant contributions to advancing sustainable and alternative food systems, and service on numerous USDA and other national advisory committees to further organic agriculture.

The proclamation was presented to her by Florida Commissioner of Agriculture Nicole Fried at an on-site event at the state's Capitol, where a press conference was held to commemorate February as Black History Month and recognize the achievements of all Black leaders who have greatly impacted our state and nation.

Taylor, who was awarded 2020 Woman of the Year in agriculture by the Florida Department of Agriculture and Consumer Services, was recently named one of Florida 500, Florida's Most Influential Business Leaders in the Agriculture category by Florida Trend in October 2021. She was also selected to serve on the International Federation of Organic Agriculture Movements (IFOAM) – Organics International World Board from 2021 to 2024, along with nine new members selected from worldwide applicants.

Democratically elected by the membership of IFOAM-Organics International, the World Board team is responsible for overseeing and supporting IFOAM-Organic International's work growing the global organic marketplace, communicating the benefits of organic, training organic leaders, and facilitating capacity building for organic farmers.

"The team also develops strategic recommendations that help IFOAM-Organics International further the mainstream adoption of organic practices," said Taylor.

IFOAM-Organics International has members in more than 100 countries and territories as well as regional bodies and sector platforms that together assist in leading change organically. IFOAM-Organics International is headquartered in Bonn, Germany.

Taylor also serves as Co-President of IFOAM North America, a self-organized regional body of IFOAM members in Canada, the United States, and the English-speaking Caribbean. The group works to build capacity in North America and to enhance public awareness, provide a forum to exchange ideas, engage in North American-specific activities, enable small farm capacity building to advance organic agriculture and its principles to all. For more information on IFOAM online, visit <https://www.ifoam.bio/our-work/where/north-america> and <https://www.ifoam.bio/about-us>. For more information about Florida Trend, visit <https://floridatrend500.com/agriculture/>.

Taylor created, and is implementing, FAMU's Statewide Small Farm Program, which equips and empowers underserved small farm populations and their communities toward sustainable development. She also chairs the National Organic Standards Board Material Committee for the U.S. Department of Agriculture's (USDA) National Organic Program and has served on the USDA Advisory Committee for Beginning Farmers and Ranchers. Taylor has a B.S. from Florida A&M University, an M.S. from Iowa State University, and a Ph.D. from Virginia Polytechnic University. She is also a certified organic farmer. She has worked with FAMU for over 20 years.



Daniel Solis, Ph.D., associate professor and agribusiness program leader

AGRIBUSINESS PROGRAM LEADER INVESTIGATES WORLD-WIDE SOURCES OF ANIMAL FEED USE

Receives \$70K Grant to Assess Production Growth Rates of Animal-Based Protein



Daniel Solis, Ph.D., associate professor and agribusiness program leader

Daniel Solis, Ph.D., associate professor and agribusiness program leader, at Florida A&M University's College of Agriculture and Food Sciences (CAFS), recently received a \$70,000 research grant to perform a worldwide, comparative analysis of production growth rates of animal-based protein over the 2000-2021 period. His research project "Assessment of Animal

Protein Growth and Source of Feed" will also investigate, for faster growing countries, the major sources of their feed use – for domestic production vs. imports – and the source of those imports. The U.S. Department of Agriculture's Foreign Agricultural Service (USDA FAS) funded Solis' grant, and the project performance period is from September 2021 through October 2022.

"This USDA-FAS grant will help our agribusiness program further develop our research agenda, which is focused on understanding the economics of the agricultural sectors in the U.S. and especially in the state of Florida," said Solis. This generous grant will also help us train the next generation of agricultural economists by funding the research and education for one of our master students."

A prolific author and researcher, Solis received the FAMU Emerging Research of the Year Award in 2017 and was named the 2017 Most Read Author at FAMU. He has taught undergraduate and graduate level courses at FAMU CAFS since 2014. His research interests include development and environmental economics, productivity and efficiency analysis, climate and weather economics, and project evaluation and econometrics. For more information visit dsolisw.weebly.com or email Solis at daniel.solis@famuedu.

AGRIBUSINESS ASSISTANT PROFESSOR RECEIVES \$400K GRANT, NAMED INNOVATOR BY THE NATIONAL CENTER FOR ATMOSPHERIC RESEARCH

Michée A. Lachaud, Ph.D., assistant professor for the agribusiness program in the College of Agriculture and Food Sciences (CAFS), was recently selected as a 2021 Innovator in the National Center for Atmospheric Research (NCAR) Innovator Program. Lachaud also received a two-year \$400,000 research grant to develop economic and climate models that capture short-term and long-term climate-change related impacts on U.S. agricultural production.

He will investigate the efficacy of adaptation strategies in minimizing those effects by combining computer-simulated data with real-world evidence of farmers' adaptation behaviors using field data. His NCAR research project, titled "Climate Change, Adaptation, and Welfare Implications: A Study of US Agriculture," is funded by the National Science Foundation (NSF).

A primary goal of the Innovator Program is to address complex research problems by building partnerships between NCAR scientists and early career faculty.

"I am very excited and truly honored to receive this grant, because it would improve our understanding of, and ability to predict, agricultural impacts of climate change – especially by strengthening a critical link (currently a weaker link) in the climate-agricultural, production-food security causal chain–farmer adaptation behavior," said Lachaud. "Winning this grant would not have been possible without the motivation and inspiration of my colleagues, the support of Florida A&M University, CAFS, and especially my family."

Lachaud also received the 2019 Outstanding Young Professional Award from the Agricultural and Applied Economics Association (AAEA) in recognition of early career contributions to teaching, research, and service in agricultural economics and agribusiness. Lachaud may be contacted at michee.lachaud@famuedu or (850) 412-5650.



Michée A. Lachaud, Ph.D., assistant professor for the CAFS agribusiness program

CAFS RESEARCH CENTER

CENTER FOR BIOLOGICAL CONTROL

Thirteen (13) research projects funded, totaling over \$1.1 million in 2020-2021. Two Newly Funded Projects as Part of a Consortium, totaling \$16.3 million, are listed below:

- **\$15.0 million funded project.** Consortium (University of California Davis, Florida A&M University, Michigan State University, World Vegetable Center) for proposal submitted by Horticulture Innovation Lab University at UC Davis to USAID Feed the Future Program. Co-PIs (Harriett Paul, and Lambert Kanga).
- **\$1.3 million funded project.** Consortium (Florida A&M University, University of Maryland Eastern Shores, Alabama A&M University, Southern University, University of Arkansas at Pine Bluff) for proposal submitted to USDA 1890 Center of Excellence for Global Food Security and Defense by the University of Maryland Eastern Shores on behalf of the Center of Excellence for International Engagement and Development. Co-PIs (Harriett Paul, Lambert Kanga, Violeta Tsolova, Anthony Ananga, AND Lucy Ngatia).

CENTER FOR VITICULTURE & SMALL FRUIT RESEARCH

Nineteen (19) grants funded, totaling over \$2.9 million in 2020-2021. Highlights include:

- **Enhanced Florida grape industry** through identifying new bunch grape and muscadine genotypes suitable for wine production and fresh consumption, adapted to Florida condition. This includes the release of two red muscadine cultivars suitable for wine production 'Floriana' and fresh consumption 'Onyx', as well as start the process for the release of two new bunch grape cultivars suitable for white wine production 'Blanc du Soliel' and 'Blanc de Leon.'
- **Develop a breeding platform** utilizing the unique beneficial qualities of the Muscadine to secure the lead and enable breeding programs in the U.S. Routinely applied modern genomics and genetics tools to efficiently deliver cultivars with producer-required disease resistances and market-essential fruit/vinification qualities.
- **The Southeastern NCPN Center for Grape** at FAMU evolved further by expanding and including the working group from Texas A&M University/Horticulture Department in College Station and Micropropagation and Repository Unit at North Carolina State University (NCSU).

HIGHLIGHTS

CENTER FOR WATER RESOURCES (CWR)

- **Building Research Capacity in Hydrologic Exchanges between Natural and Human Environments.** PI: Katherine Milla, Ph.D., Co-PIs: Amita Jain, Ph.D., and Odemari Mbuya, Ph.D. NIFA 1890's Capacity Building Program, \$586,262, (3/1/2019 – 3/2/2022). New collaboration developed with University of Florida Extension Agents Yilin Zhuang, Ph.D., and Andrea Albertin, Ph.D. Zhuang. This collaboration focuses on promoting the testing of well water among rural communities. Accomplishments: Two laboratory modules were developed as online labs for the classes: "Introduction to GIS and Remote Sensing" and "Research Applications of Geographic Information Systems." Five video tutorials were developed and deployed in classes demonstrating specific GIS geoprocessing methods. Created a database of attributes for houses sold in Tallahassee during 2015-2016. Attributes include number of bedrooms, number of bathrooms, presence or absence of swimming pool and presence or absence of garage or carport. A laboratory for processing and analyzing microplastics in water was set up.
- **Effect of Reclaimed Wastewater Irrigation on Soil Health and Environment** – (on-going), PI: Amita Jain, Ph.D., Co-PIs: Katherine Milla, Ph.D., Odemari Mbuya, Ph.D., Ashvini Chauhan, Ph.D., and Johnny Grace, Ph.D. Goals: assess impacts of reclaimed water irrigation on soil quality, nutrient movement in soil and groundwater resources; produce trained and skilled graduates in agriculture and natural resource sciences. Students, faculty, farmers, and local communities will benefit from the protection and improvement of water quality of groundwater. The enhanced knowledge and improved understanding of the effect of irrigation use of reclaimed wastewater on soil's chemical, microbiological properties and its implication on denitrification and nitrification processes will be useful to mitigate the negative impact on soil and groundwater resources thus protecting environment and human health. Accomplishments: Soil samples were collected in triplicate from six pivot sites and six control sites in February, 2020 at three depths, 0-6", 6-12", and 12-24" separately for both chemical and microbial analyses.

CAFS STUDENT RESEARCH HIGHLIGHTS

- The Center for Viticulture and Small Fruit Research is very proud to report the significant achievements of graduate student **Jiovan Cambell** and his major professor Islam El-Sharkawy, Ph.D.. Cambell was a graduate research assistant at the Center's Genetics and Breeding Program. Cambell was also selected for a summer paid internship with the Beaux Frères Winery in Oregon. Upon graduation from FAMU CAFS in spring 2021, Cambell published three refereed publications as the first co-author. The publications' data and results were generated under his master's thesis research project, with the exemplary mentorship and guidance of El-Sharkawy and contributions of the Center and its international team of experts.
- **Worrel Diedrick**, graduate student of Lambert Kanga, Ph.D., Center for Biological Control Director, – First Discovery of Egg Parasitoid of the Kudzu Bug in Florida (North America) –first to discover an efficient egg parasitoid (*Ooencyrtus nezarae*) in the State of Florida (classified as a State Record), it is a new biocontrol tool that can be used to manage kudzu bug (*Megacopta cribraria*). The kudzu bug is a destructive and invasive pest species that affects essential food crops such as soybean and legumes. This new biocontrol tool can prevent the need for the use of pesticides in soybean production (the second most planted field crop in the U.S.) which has an estimated annual revenue of \$39 billion (2020).

ATLANTA

USDA CENTERS OF EXCELLENCE FUNDING

- Center for Innovative and Sustainable Small Farms, Ranches, and Forestlands (7/1/2020 – 6/30/2022) –FAMU is the Co-Lead, Thrust Area 1: Farm Commodity, Process & Systems. FAMU Award: \$75,000. Principal Investigator (PI): Vonda Richardson, Director, Cooperative Extension.
- Three proposals with Verian D. Thomas, Ph.D., CAFS Associate Dean, Recruitment and Alumni Affairs, as the Principal Investigator, were funded:

Virtual Center to Motivate and Educate for Achievement (MEA) – MEA, one of three USDA 1890 Centers of Excellence established in 2015 along with the 125th Anniversary of the Second Morrill Act of 1890, is also the name of this proposal, funded to establish MEA – Under MEA Objective 2, Deliver Workforce Development Experiences by Creating/Strengthening A Partnership with a 9th – 12th grade Bridge Program in Food, Agriculture, and Natural Resources, and MEA Objective 3, Expand student experiences to increase their knowledge and engagement in STEAM with Cooperative Extension’s AgriSTEM Saturday Academy. FAMU Sub-award: \$35,174 (USDA NIFA MEA, 7/1/2020 – 6/30/2022)

MEA, Project Title: Building a Community of Future Employees in Food and Agricultural Sciences, Natural Resources, and Related Sciences: Opportunities Through Collaboration (includes experiential learning for new 1890 Scholars). FAMU Award: \$50,000 (USDA NIFA MEA, 7/1/2020 – 6/30/2022)

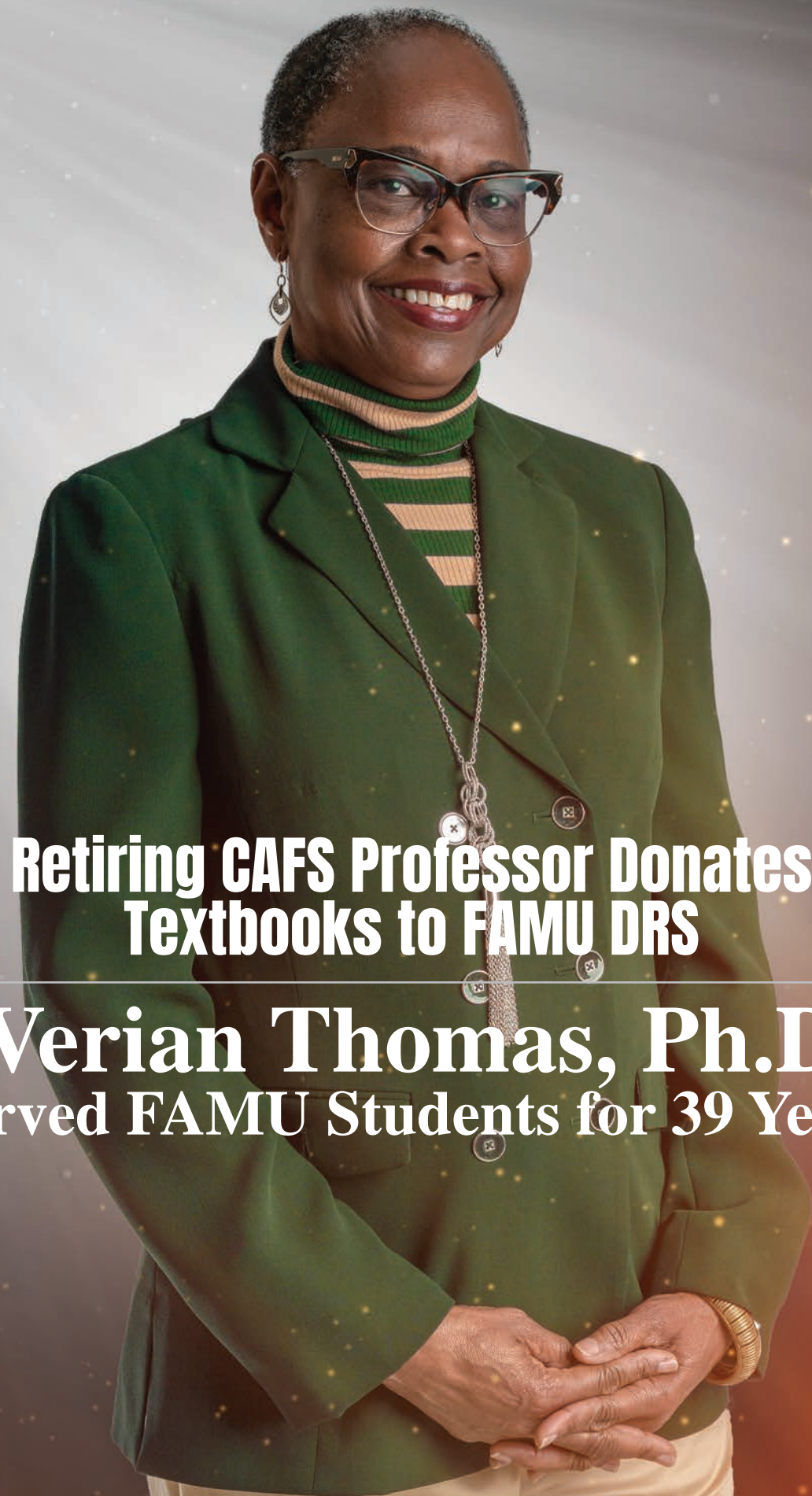
USDA 1890 Center of Excellence for International Engagement and Development (CEIED) – Project Title: Training Globally Competent Students for the Food, Agricultural, Natural and Human Sciences Workforce; an 1890 and Latin American Institutional Partnership. FAMU Award: \$24,000 (USDA NIFA, 8/1/2020 – 6/30/2022).

COOPERATIVE EXTENSION PROGRAM HIGHLIGHTS

FAMU’s Cooperative Extension Program reached more than 1.7 million citizens in 2021 through:

- Direct Clientele: Contacts: 30,900
- Indirect Clientele Contacts: 1,732,551
- Educational Materials: 212
- Group Learning Activities: 1861
- 4-H Youth: 5,710
- Volunteer Hours: 22,474
- Value of Volunteers: \$542,522
- New Grants Awarded: \$3,862,023
- Agriculture and Natural Resources** – Farm financial literacy is a chronic determinant of small farm failure and is a primary contributor to many beginning farms failing within their first 10 years of operation. FAMU Cooperative Extension has made farm financial literacy a high priority topic. Over the past two years, more than 100 beginning farmers and ranchers have received training in farm financial literacy, including marketing techniques, through the Beginning Farmer and Rancher Development Program (BFRDP). This has resulted in an increase in self-reported confidence, knowledge of government assistance programs, and increased competencies in agribusiness management, agricultural policy issues, farm economics, and marketing. Over 70 certificates of completion in farm financial management and its related competencies were issued to beginning farmers and ranchers in Florida.
- The Havana Community Development Corporation (HCDC)**, a collaborating entity with the FAMU BFRDP, has improved their nursery management skills and profitability for its participating beginning farmers through program activities. They are now able to produce their own seedlings, between 800 - 1000 seedlings per month, as opposed to purchasing costly starter plants. Also in 2021, HCDC successfully produced and sold compost, jalapeno peppers, kale, lemon balm, tomatoes, and several other medicinal and culinary herbs to a Whole Foods store. They have also tapped into distant markets as far away as New York State.





Retiring CAFS Professor Donates Textbooks to FAMU DRS

Verian Thomas, Ph.D. Served FAMU Students for 39 Years

Even as she was retiring last in the fall 2021 semester, Florida A&M University (FAMU) Professor and Associate Dean for Recruitment, Student Support, and Alumni Affairs in the College of Agriculture and Food Sciences (CAFS) Verian D. Thomas, Ph.D., continued to give to students and our community by donating food and agricultural sciences hard-copy textbooks to the FAMU Developmental Research School (DRS) for use by its 9th – 12th Graders in the Agriscience Academy.

The donation reflects Thomas' commitment to student success during her almost half a century career as an educator, which began as a math high school teacher in her native Guyana.

"If you are in the University, you have to reach back to the elementary, middle, and high schools with summer programs for students and teacher training," said Thomas, whose last day was August 31 after 39 years at FAMU. "I feel blessed to have had this opportunity. I love what I do."

Cynthia Holloway, who teaches the introductory courses in food and agricultural sciences in the middle and high schools, recently accepted the hard copy books. Also, E-books for these courses were presented to the students during the 2020-21 academic year while they were being taught virtually due the coronavirus pandemic.

In an effort to develop the current Bridge Program between CAFS and FAMU DRS, Thomas partnered with the FAMU DRS more than 12 years ago to establish an Agriscience Academy in the DRS high school.

She worked with Cooperative Extension specialists to establish a garden plot at FAMU DRS. In addition, she partnered with CAFS faculty and staff to establish a food science track at DRS. The goal of the collaboration is to have DRS students in the program take introductory courses in CAFS and sit for appropriate certifications before graduating from high school.

CAFS Dean Robert Taylor, Ph.D., calls the Thomas' donation and her contributions "visionary and extraordinary."

This current CAFS-FAMU DRS collaboration is being funded by the National Institute for Food and Agriculture at the U.S. Department of Agriculture (NIFA USDA).

"Building academic programs, mentoring students," Thomas said. "It's fulfilling, and it's what I wanted to do. I had a passion to work in the STEM area."

Thomas is retiring after 39 years of service to undergraduate and graduate students at FAMU and specifically in CAFS, formerly known as the College of Engineering Sciences, Technology, and Agriculture (CESTA).

"From the time I met her, she encouraged me to reach for any goals I put my mind to, no matter how big or small. There were times she made the difference between me going after an opportunity and letting it pass by," said Kayla Braggs, a fourth-year food science student. "She made it her mission that every student within CAFS had access to only the best opportunities within their intended fields and would be our biggest advocate whenever the time came. More than anything else, she acted as my personal mentor."

Before joining FAMU, Thomas

began her career in higher education administration at the University of Guyana (UG), where she was a lecturer and chair of the chemistry department.

The daughter of a school principal, Thomas taught high school math before going off to university. She earned a Ph.D., in food sciences from the University of Leeds, England.

During her sabbatical leave in 2017, Thomas returned to UG where she designed a new degree program in food science and established an Institute for Food and Nutrition Security. This new degree program at UG was launched in 2019.

"I love teaching and sharing my expertise with students," said Thomas.

While at FAMU, Thomas has led several efforts to review course curricula for efficiency, currency, innovation, rigor, and relevance; led program assessment efforts in her College; developed successful and innovative grant proposals, and implemented support and mentoring pre-college, undergraduate and graduate research and teaching programs in food and agricultural science, with the help of over \$4.43 million in federal funds, mainly from NIFA USDA, and state matching funds. She was the co-principal investigator and program director for the CAFS 1890 Scholars Program, which resulted in more than 100 students of scholarships.

"Dr. Thomas has been a leader for women in agriculture even when she was not intending to," said Vonda H. Richardson, director FAMU Cooperative Extension Program. "She is testament for all young women of the effectiveness and power of female leadership."

New Bahamian Agricultural Scholarship Opportunities for FAMU CAFS Students

Adapted from story by Eyewitness News Bahamas

A new agricultural scholarship opportunity for Bahamian students to attend Florida A&M University (FAMU) College of Agriculture and Food Sciences (CAFS) was recently announced by Robert W. Taylor, dean and director of land-grant programs.

The scholarship will allow Bahamian recipients of the award to receive a tuition-only scholarship that can be used towards their education at FAMU CAFS. Applicants must be graduating high school seniors or college freshmen or sophomore transfers interested in obtaining a degree in the field of agriculture.

FAMU President Larry Robinson, Ph.D., stated the University has a long history of successful Bahamian graduates who have gone on to make an impact in their various fields of profession.

As of the spring 2021 academic semester, there were 12 Bahamian students at FAMU, three undergraduate and nine graduate, according to the Agnes D. Coppin, Director of International Students and Scholars, FAMU Office of International Education and Development.

During a recent virtual meeting attended by the ministers of agriculture and education and FAMU leaders, Taylor – a native Bahamian – expressed pride in this opportunity that will bring more Bahamians into the program that he spearheads, one he said is critical for a country that imports more than 80 percent of its food products.

“We are excited about this scholarship effort that will encourage students to enroll in our college, and we welcome Bahamians to join the CAFS program with the assurance that they would feel right at home,” said Taylor.

Bahamian Governor General His Excellency Cornelius A. Smith and William F. Pickard, Ph.D., honorary consul for the

Bahamas in Detroit, Michigan – friends for more than five decades – partnered together to create the scholarship to ensure that young Bahamians have access to education and funding to be able to make a global impact. The Friendship & Alliance Scholarship is funded through the CA Smith International Educational and Community Development Foundation.

“This is a dream that Will and I had for years. We were always committed to helping young people; we want students from all over the world to build stronger relationships and thereby create a stronger world,” said Governor General Smith.

“We created a program and started bringing kids from Alabama, United States to the Bahamas years ago. Now we are providing opportunities for students in The Bahamas and in Detroit to get an education at FAMU. This will cement the Friendship & Alliance Scholarship and help it to grow further and expand globally.”

The CA Smith Foundation has connected with the U.S. Embassy in the Bahamas to ensure ease of process in obtaining student visas for students who attend U.S. universities. Recently, the Foundation provided seven scholarships for young Bahamians in areas such as environmental science, computer engineering and early childhood education.

For those who will be awarded the new agricultural scholarship, GreenStone Farm Credit Services has committed to providing laptops where there is a need. In addition, GreenStone will offer internship opportunities to help students further their expertise and opportunities in agriculture.

For the original, full story printed by Eyewitness News Bahamas, visit:

ewnews.com/bahamian-agricultural-scholarship-opportunities-at-famu-announced

MOGULS IN THE MAKING

FAMU Team Wins \$5K Scholarships, Paid Internship, and Laptop from Ally Financial and Thurgood Marshall College Fund

Adapted from story by Heather D. Johnson, Office of the Provost

Two College of Agriculture and Food Sciences (CAFS) students are part of a Florida A&M University (FAMU) team that won third place in the 2021 Moguls in the Making competition presented by Ally Financial and the Thurgood Marshall College Fund (TMCf). CAFS Agribusiness student Afya Ward and Biological Systems Engineering student Bryana Pittman were each awarded \$5,000 scholarship, a paid internship with Ally Financial, and a laptop.



Bryana Pittman

"Moguls in the Making was an incredible experience," said Ward. "The business and entrepreneurship skills my teammates and I gained during the competition helped us to place third with our innovative ideas around how to improve graduation rates using accessible technology."

Pittman and Ward are part of a five-member FAMU team tasked with developing and pitching a business plan to support economic mobility in the Charlotte, North Carolina area. The team also included students Kenares Clarke, Kennedy Hayden, and Niegil Reese.



Afya Ward

"Moguls in the Making is a necessary initiative that is helping to bridge the racial wealth gap and support high achieving students by creating pathways to economic mobility and lucrative job opportunities," said Harry L. Williams, Ed.D., president and chief executive officer (CEO) of TMCf. The TMCf offers students from Historically Black Colleges and Universities (HBCUs) the opportunity to learn and practice vital business skills while competing for scholarships and internship opportunities.

Students from Alabama A&M University, Delaware State University, FAMU, Howard University, Johnson C. Smith University, Morgan State University, North Carolina A&T State University, Spelman College, Tuskegee University, and Virginia State University participated in the competition.

"The Moguls in the Making program is a strenuous 72 hours of rigorous learning and ideation, and these students impressed us with their energy, creativity, and enthusiasm for solving real-world challenges," said Ally Financial CEO Jeffrey J. Brown. "Every year, I come away feeling inspired and excited by this next generation of business leaders."

The competition enables Ally to reach diverse talent and underscores the significant value of HBCUs in developing future leaders in various industries. Ally mentors and team coaches, including past Moguls in the Making participants and HBCU alumni, worked with the students to help formulate their plans. Prominent Charlotte-area leaders acted as resources in their respective industries, and students also attended virtual learning workshops and fireside chats with business leaders.

Moguls in the Making enables Ally to reach diverse talent and underscores the significant value of HBCUs in developing future leaders in various industries. Since its inception in 2019, Ally has employed 25 of the participants as interns and hired nine as full-time employees across a variety of functions, from information technology and marketing to product design and development.

THE COVID-19 VACCINE: Moderna, Pfizer, Janssen (Johnson & Johnson)

	Moderna	Pfizer	Janssen (J&J)
Safe and Effective?			
Side Effects	83.9% - 90.5% of participants had short-term pain at the injection site, and 71.9% - 81.9% of participants experienced side effects	87% of participants had short-term pain at the injection site and 77% of participants experienced side effects	48.6% of participants had short-term pain at the injection site, and 33.2% - 38.9% experienced side effects (e.g. fever, fatigue, headache, chills)
Large Clinical Trial Size	30,000 participant randomized, double-blind, placebo-controlled trial	43,000 participant randomized, double-blind, placebo-controlled trial	44,000 participant randomized, double-blind, placebo-controlled trial
Storage and Handling	Stored in freezer, but stable in refrigerator for 30 days	Stored in ultra-cold freezers	Stored in temperatures 36 to 46 degrees Fahrenheit
Dosing	(0.5 ml) - two doses, 28 days apart Moderna or Pfizer Booster needed	(0.3 ml/.15 pediatric) - two doses, 21 days apart Moderna or Pfizer Booster needed	(0.5 ml) single dose Moderna or Pfizer Booster needed*
Age Range	18 years and older	5 years and older 5-17 year olds must be accompanied by a parent or guardian	18 years and older



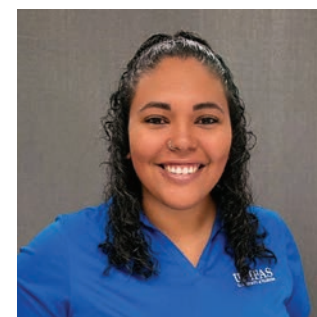
All Vaccines are free and available!
2507 Wahnish Way, Tallahassee, FL 32307
8 a.m. to 4:30 p.m. Monday through Saturday

*According to the CDC, boosters of an mRNA vaccine are preferred over the Johnson & Johnson vaccine (Dec. 2021).

Lourdes Pérez Cordero

Class of 2019, Bachelor Degree, Agricultural Sciences

Guest feature by J. Scott Angle, University of Florida's Vice President for Agriculture and Natural Resources and leader of the Institute of Food and Agricultural Sciences, University of Florida, jangle@ufl.edu, with Q&A by Cynthia M. Portalatin, Communication Coordinator, Florida A&M University, College of Agriculture and Food Sciences, cynthia.portalatin@famu.edu



To maintain the world's largest university-based citrus science organization, the University of Florida's Institute of Food and Agricultural Sciences (UF/IFAS) is constantly bringing in new talent. Fortunately, Florida A&M University (FAMU) produces some of this talent.

FAMU alumna Lourdes Pérez Cordero, a 2019 graduate of the College of Agricultural and Life Sciences (CAFS) with a bachelor's degree in

agricultural sciences, began work as an Agriculture and Natural Resources Extension Agent of Highlands County, with the University of Florida, Institute of Food and Agricultural Sciences (UF/IFAS) in September 2021.

UF/IFAS and FAMU have a great partnership through the Florida Cooperative Extension Service, and I see lots of potential for us to collaborate in preparing the next generation of agriculture professionals as well.

We did a national search for the citrus agent, but we discovered that FAMU and UF/IFAS had grown our own best person for the job. We found Pérez at the UF/IFAS Citrus Research and Education Center working on her master's degree in entomology.

But she may never have been working on agricultural pests in one of our own labs had FAMU not helped her identify her passion. Pérez had been working in a supermarket when she took Dr. Benjamin Hottel's entomology class at FAMU. He noticed her interest in the subject and got her connected to another job as a biological aide at the United States Department of Agriculture's Agricultural Research Service. She's been working in entomology ever since.

It wasn't long into her USDA assignment that Heather McAuslane, Ph.D., of UF/IFAS, found Pérez. McAuslane, currently the interim UF/IFAS entomology chair, was the UF College of Agricultural and Life

Sciences assistant dean at the time, and she had set up a table at the annual FAMU Feeder Scholars conference in Tallahassee to recruit graduate students. Pérez came to her table and soon after to UF.

The Highlands County assignment is so important that we wanted Pérez on the job ASAP. She'll work towards completion of her master's degree this academic year. Pérez will be the first to tell you she has a lot to learn, but she has also already learned a lot. Pérez has worked for the United States Department of Agriculture's Agricultural Research Service, distinguished herself as a student award winner at the Entomological Society of America and made important

contributions to the work done at the UF/IFAS Citrus Research and Education Center, where she has been based for the past year and a half.

Pérez won't be 100 percent citrus. She has some 4-H responsibilities, and her full title is agriculture and natural resources agent. That covers a lot of ground. But in Highlands County it means citrus is a priority, and her training and connections are in fighting the Asian citrus psyllid that spreads the disease that has devastated the Florida citrus industry.

The land-grant mission of UF and FAMU makes homegrown talent like Pérez's possible. Without great teaching, we wouldn't have the person we needed for this Extension position. Without a dedicated Extension agent, the state's growers and packers wouldn't benefit as much from the great research she will translate and deliver.

The land-grant system is a network that strengthens each university, so I'm thankful to FAMU for preparing Pérez for the rigors of UF/IFAS College of Agricultural and Life Sciences master's level study and for giving her the grounding in the land-grant mission that will serve her in serving Florida agriculture.

Recently Cynthia Portalatin, with CAFS Communications, caught up with Pérez for her perspective on her new role with UF and her prior FAMU experience:

Originally from Mayagüez, Puerto Rico, Pérez worked as a graduate research assistant at the UF/IFAS Citrus Research and Education Center, in Lake Alfred, Florida, for nearly two years after graduating from FAMU. She continues to study the behavior of the Asian citrus psyllid and work on the development of a novel repellent device for its management as part of her research. She plans to earn her master's degree in entomology from the UF by spring 2022.

What are you most looking forward to learning and doing in your new role as an Extension agent at UF IFAS?

I am very excited to create educational programs that provide the latest science-based information for the betterment of common agricultural

practices. I am looking forward to understanding the needs and challenges of the community that I serve, as well as learning their production practices and management techniques.

How has your FAMU degree helped you grow in your career?

My degree in agricultural sciences from Florida A & M University has helped me open many doors throughout my career. Starting with my first experience on the field, working as a biological aid with an entomologist from the USDA Agricultural Research Service in Tallahassee, Florida. Subsequently, this experience helped me earn an assistantship as a graduate student in the Department of Entomology and Nematology from the College of Agricultural and Life Sciences at UF, ranked #1 worldwide.

Why did you choose FAMU CAFS for your agricultural science degree?

As I looked for options to finish the degree I had started at the University of Puerto Rico, FAMU seemed to go along with my values and offered the opportunities I was looking for at the time.

What is your fondest memory of your experience as a student at the College of Agriculture and Food Sciences?

My fondest memory was definitely the day I graduated with my bachelor's degree. We all work very hard in anticipation of that special day, when we finally get to check that goal off of our bucket list. This moment is when we finally sit back and recognize ourselves and those who supported us along the way. That day is the beginning of a new dream, when we walk out to the world with a new goal in mind, but with the certainty that we will always have a home to come back to.

For more information, visit the UF/IFAS Citrus Agents website at: citrusagents.ifas.ufl.edu/agents

Celebrating 1890 Land-Grant Universities

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