

The 1890

CAFS MAGAZINE

THE OFFICIAL MAGAZINE OF
THE FAMU COLLEGE OF
AGRICULTURE AND
FOOD SCIENCES

GLOBAL

Training of a
Borlaug Fellow
from Indonesia

OUTREACH

New Remote Learning
Produce Curriculum
Aims to Increase Food
Safety Awareness
to Minority Farmers

RESEARCH

CAFS Professor
Receives USDA
NRCS Grant Awards
on Partnerships
for Climate-Smart
Commodities

STUDENT SUCCESS

Agribusiness Student
Kyha Nelson Attends
Annual HBCU Conference
in Washington, D.C.

GOING *the* DISTANCE

to transform the
future of agriculture

AGRICULTURE IS WHO WE ARE!

As the only surviving publicly-funded historically Black college or university (HBCU) in the state, Florida Agricultural and Mechanical University (FAMU) remains committed to advancing knowledge, resolving complex issues, and empowering citizens and communities. Here in the College of Agriculture and Food Sciences (CAFS), we share in that commitment as the original land-grant arm of the university, equipping our students with the tools and resources to become highly qualified professionals and agents of change in finding solutions to local and global food security and the fight to ending world hunger.

We are small, yet MIGHTY, standing firm as one of the nation's leading institutions of its kind, continuing to meet the ever-changing needs of the food and agricultural industries. We lead the university in grants, contracts, patents and are recognized as one of the leaders in Peer Review publications. Among 1890 land-grant universities, we are the only college to have both an undergraduate and graduate program in Entomology (joint Ph.D.), a Viticulture Research Program and one of the only two Biological Systems Engineering (BSE) Programs. Our Center for Biological Control is the only research unit among 1890 land-grant colleges and universities to successfully address threats posed by invasive pest species to U.S. agriculture, natural resources and public health, and it is internationally known for its excellence in these endeavors.

Through our Center for Water Resources, we promote stewardship for managing, protecting and conserving water resources via education, research and outreach activities. We have received 3,800 acres of land from the U.S. Department of Agriculture (USDA), the largest land donation for agricultural research among 1890 schools, and we continue to provide researched-based resources to Florida's farmers, individuals, producers, communities and agri-businesses through our Cooperative Extension Program. As you can see, our history is rich, our legacy is strong and our impact is indelible!

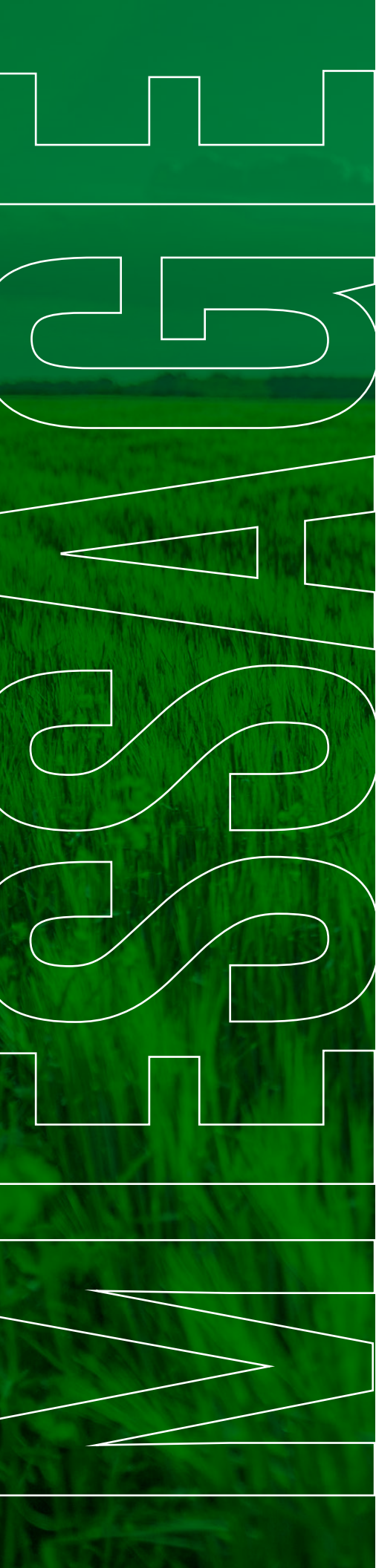
We are FAMU CAFS!





**WE ARE THE
A IN
A FAMU**





MESSAGE From the DEAN

GREETINGS ALUMNI & FRIENDS

Welcome to the College of Agriculture and Food Sciences (CAFS)! It is my pleasure to introduce the first edition of “The 1890” CAFS Magazine. This name change reflects our efforts to better align ourselves with the college’s mission to remain steadfast in providing excellence in research, academics, and outreach, while paying homage to the University’s status as an 1890 land-grant institution.

Looking back at the past year, we celebrated numerous faculty and staff achievements that demonstrate how extremely involved we are, both in the community and in our professions. It is that commitment that motivates us as leaders and innovators of life-changing discoveries that will help to advance us locally, nationally and internationally.

The need to address global climate change impacts on agriculture and food production relative to the effect on mankind is paramount, indeed. With this comes the necessity to adopt cutting edge advanced modern technology such as biotechnology involving Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR), Artificial Intelligence (AI), drones, 3-D and 4-D Printing, along with other precision agricultural methods to successfully increase crop and animal yields and production.

CAFS continues to be a great place for students to explore different agricultural fields of study that will lead to successful careers that make indelible impact. Our goal is to ensure that students are well trained in advanced relevant technologies in concert with traditional food production methods in this era of global climate change.

Whether working to solve global food insecurity, protecting the environment, or developing new technologies in farming, our ambitions are high, and it starts with having hope and enthusiasm intended to increase scholarly success beyond graduation. CAFS faculty and students are doing remarkable things in many different areas. In this issue, you will meet some amazing students who are making a difference both here and abroad. You will read about Kyha Nelson, a recent alum who was selected to represent FAMU at an annual Historically Black College and University (HBCU) conference in Washington, D.C., during her last semester, and Chai Comrie, a freshman who spent six weeks aboard a scientific ocean drilling research vessel, while on an educational journey to Greece. You'll also learn about three CAFS researchers whose grant projects were selected to receive funding totaling \$15 million to support climate-smart practices. This issue also includes faculty and student scholar highlights from fall 2022 through spring 2023.

As you read our magazine, it is my hope that you are impressed with the incredible stories of our faculty, staff and students, and I think you will agree that the next generation of leaders in the agricultural and food industries are *growing* here in CAFS!

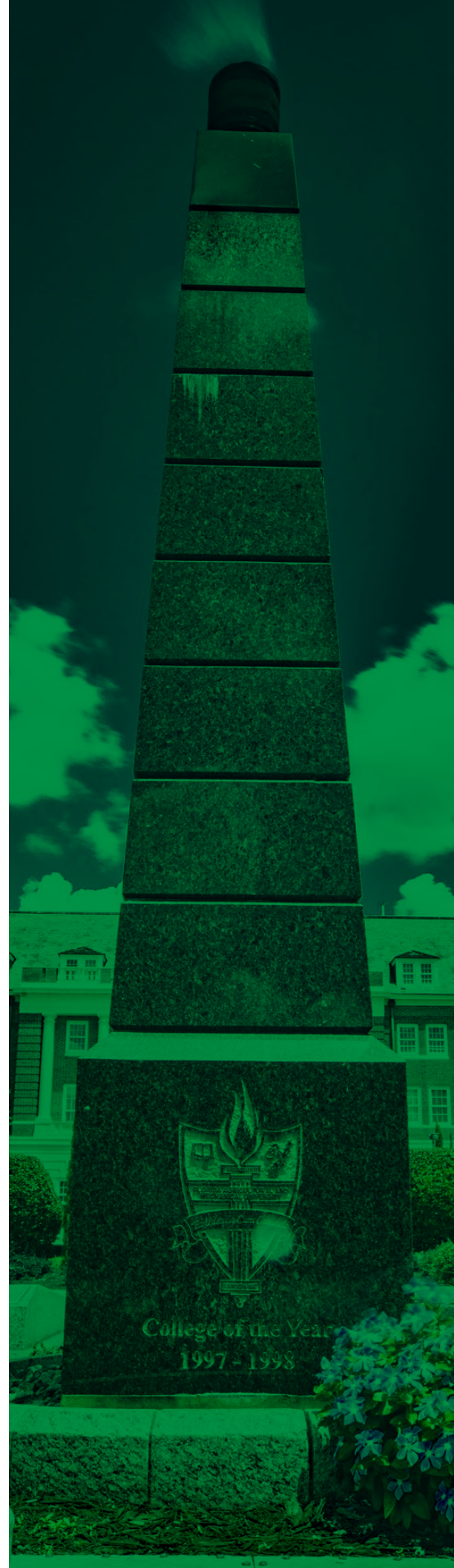


Robert W. Taylor, Ph.D.

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



FLORIDA AGRICULTURAL AND MECHANICAL UNIVERSITY



CREATIVE TEAM

Editor and Writer Kilisha Fain

Layout & Design Grova Creative

CONTRIBUTING WRITERS

Andrew Skerritt

Harriet A. Paul

Muhamad Haseeb, Ph.D.

Odemari Mbuya, Ph.D.

CONTRIBUTING PHOTOGRAPHERS

Kilisha Fain

Glenn Beil

Grova Creative

OFFICE OF THE DEAN

Dean and Director of Land-grant Programs

Robert W. Taylor, Ph.D.

Sr. Administrative Assistant

Phyllis Moore

Assoc. Director of Research Programs/Services

Wayne Walker

Assoc. Director of Research and Coord. of Administrative Services

Jenaya Anderson

Asst. Director, University Relations/Public Affairs

Kilisha Fain

Coord., Information Technology

Cedric Spradley

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Vonda Richardson

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STUDENT ACHIEVEMENT & RECOGNITION HIGHLIGHTS



CAFS STUDENTS Showcase

By Kilisha Fain, with contributions from Tommeron D. Timmons

Scientific Research Posters During Presidential Recruitment Tour, Orlando Classic Weekend



CAFS staff and students engaging high schoolers during Recruitment Fair

Several Florida A&M University (FAMU) students participated in a mini research poster showcase during the 2022 Florida Blue Florida Classic weekend, held in Orlando. Over the last five years, student

research scholars from FAMU and Bethune-Cookman University (BCU) have presented scientific posters during the event to showcase some of the STEM related projects students are engaged in on each campus.

The event was held in conjunction with FAMU President Larry Robinson's, Ph.D., annual Central Florida President's Recruitment Tour, a three-day, university-wide outreach, aimed at engaging potential high school students. The tour, which takes place in the days leading up to the rival game between FAMU and BCU, was held November 16-18, and included rallies at St. Petersburg College in St. Petersburg on Wednesday, Jefferson High School in Tampa on Thursday, and concluded with the Scholarship and Recruitment program at the Hyatt Regency Grand Cypress Hotel in Orlando on Friday.



Robert Taylor, Ph.D., FAMU President Larry Robinson, Ph.D., CAFS Students, Florida Blue Classic Presenters.

Each recruitment event featured presentations by Robinson, Assistant Vice President for University Engagement and Alumni Affairs, Carmen Cummings, Vice President, Student Affairs, William Hudson Jr., Ph.D., Trustee and Student Government Association President, Zachary Bell, Mister FAMU, Armani Jones, Miss FAMU, Aliya Everett, local alumni and a performance by the FAMU Connections.

“The rallies are designed to show students what FAMU has to offer,” said Tommeron Timmons, assistant director of research program services for FAMU's College of Agriculture and Food Sciences (CAFS). “Each speaker shares important highpoints about FAMU, and then the highlight of the event is the FAMU

Connections, who talks about our history, the programs and majors offered, and the great things that are happening here at FAMU.”

To culminate the event, a kickoff luncheon hosted by the Florida Classic Consortium was held on Friday at the Rosen Shingle Creek Hotel, where students were recognized by Robinson for the contributions they have made in STEM research. In an effort to boost recruiting efforts, a recruitment fair was held prior to the luncheon, with academic deans, faculty, staff, and students from each college within FAMU in attendance to actively engage high school students and parents. Concurrently, CAFS students showcased their research posters to event participants and utilized the opportunity as a means to recruit future students who expressed interest in research.

Recruitment staff from CAFS spoke to more than 100 students throughout the course of the event week, including students who were already interested in agriculture. However, a stronger push was made to student who were previously not interested in the field or those unfamiliar with the college's current program areas.

“Agriculture is not necessarily the first thing students consider as a major,” said Shanteva Leonard, coordinator of career developmental services for CAFS. “So, when we see students walking by we pull them over and find out their interests, see if they're interested in FAMU, and then give them further information about all of our programs to really share the opportunities that AG has for all majors.”

When it comes to educating potential students about CAFS majors and programs, Leonard said sharing information about the different career options, scholarship opportunities, and starting salaries, coupled with the engagement from students who presented poster displays, helped to draw high schoolers to the recruitment table.

A total of six FAMU students participated in the research showcase, some shared their thoughts on the opportunity to display their posters during the annual event:

MAIA WOODARD

Maia Woodard, a soil and water graduate student, presented the project “Sediment Arsenic Pollution under Different Land Uses in Little Washita River Experimental Watershed in Oklahoma, USA.” Woodard conducted research on the adverse health effects to humans and animals associated with exposure to Arsenic (As), a heavy metal and known carcinogen. The overall objective of the study was to evaluate the presence of arsenic in the Little Washita River Experimental Watershed (LWREW) in Oklahoma and its impact on environmental safety.



“It was an excellent experience to showcase the research going on at our university. I truly enjoyed it and I’m grateful for FAMU giving me the opportunity.”

MIKIYAH BALDWIN

Mikiyah Baldwin, a fourth-year animal science, pre-vet medical student, showcased the project “Custom Bovine Heifer Development to Advance Onset of Puberty in a Limited-Resource Beef Cow-Calf Operation”. As part of her research, Baldwin evaluated the utility of cool season forages for heifer development in a limited resource beef cow-calf system in Northern Florida.



“Representing FAMU as a STEM student at the Florida Classic Consortium Kickoff Luncheon this year was an honor. Witnessing the school spirit and being able to network with professionals while showcasing my research was truly an experience to remember.”



CAFS Student Mikiyah Baldwin displays research poster during the Presidential Recruitment tour, Orlando Classic weekend.

ALMANDO MORAIN

Almando Morain, a biological system engineering graduate student, presented “Freshwater Use in Florida: Trends and Drivers”, a project to examine the quantity and trends of water use in north, central, and south Florida, compare urban and

rural water use in Florida and identify the drivers of water use in the state, and analyze the relationship between population and water use, utilizing linear regression analysis.

RACHEL FERNANDEZ

Rachel Fernandez, an animal science graduate student, showcased her research on the “Effects of Hurricane-Related Stress During Gestation on Replacement Heifer Development in a Limited-Resource

Beef Cow-Calf System”. Fernandez conducted a study on 24 black Angus cross beef heifers to evaluate potential factors affecting heifer development in a limited-resource operation.

RYAN NEDD

Ryan Nedd, a biological system engineering graduate student, shared his study on “Land use changes in the Southeastern United States: Quantitative changes, Drivers, and Expected Environmental Impacts”. The objective of this research was to show changes among the five (5) major land types from 1945-

2012 in twelve states in the Southeastern United States (SEUS); to assess the quantitative changes in the SEUS as a result of Land Use and Land Cover Change (LULCC) using literature review; and to show the drivers associated with LULCC that lead to environmental change in the SEUS.

KASEY ELDER

Kasey Elder, an animal science graduate student, conducted research on “Effects of Prenatal Stress on Beef Steer Development.” Elder’s study sought to investigate how

maternal stressors caused by natural disasters during gestation can negatively impact growth in beef steers.

*Funding for student research projects was provided by the National Institute of Food and Agriculture of United States Department of Agriculture (USDA-NIFA).



AGRIBUSINESS STUDENT
Kyha Nelson
**ATTENDS ANNUAL
HBCU CONFERENCE
IN WASHINGTON, D.C.**

By Kilisha Fain

When Khya Nelson, a Florida A&M University (FAMU) fourth-year agribusiness student, was invited to take part in the White House Initiative on Advancing Educational Equity,

Excellence, and Economic Opportunity through Historically Black Colleges and Universities ninth cohort of HBCU Scholars Program, she knew it would be a monumental experience.

Nelson traveled to Washington, D.C. to attend the 2022 HBCU Week National Annual Conference, held September 20–23, 2022. Eighty-six student representatives who were selected as HBCU Scholars from more than five dozen institutions, met in the nation’s capitol for the conference, designed to enhance professional development and create post-graduation opportunities within nonprofit, business, and federal agency partners to ensure that as a nation we remain globally competitive. Scholars consisted of undergraduate, graduate, and professional students, recognized for effectively planning to compete for high prospects that aid in increasing standards of living. The 2022 Conference theme was Advancing Educational Equity, Excellence and Economic Opportunity.

Developed through a collaboration with NASA, the program began in 2014 during the Obama Administration, as an initiative to provide direct support to HBCU students by showcasing their talents and giving them access to NASA networks, resources, partnerships, and connections that are housed both in the public and private sector. A component of the HBCU Scholar Program, through its partnership with NASA, is the Minority University Research and Education Project (MUREP) Innovation Tech Transfer Idea Competition (MITTIC), also referred to as “Mini MITTIC.” Through this program, students partner with other Scholars to develop ideas to commercialize technology derived from NASA intellectual property. During the national HBCU Week Conference, students presented their team pitches for an opportunity to win cash prizes and a full ride to participate at the annual NASA Minute Conference.

For Nelson, the chance to collaborate with students from other HBCU’s was an exciting opportunity to network and share creative ideas. A moment of inspiration came during her visit to the White House and the chance meetings she had with key political leaders. “The entire experience was great. I felt very honored, but I was

extremely proud that I could tell my grandmother, who is also a FAMU alum, that her granddaughter was personally invited to the White House to showcase my talents as a scholar.” said Nelson. “I had a chance to meet Keisha Lance Bottoms who is my Soror, and someone whose walked in my same footsteps and went through the same chapter as me. To see her excel in this political arena is inspiring and I hope to continue in the same path of inspiring other young Black girls like me to be influential in politics.”



**“I HOPE TO CONTINUE
IN THE SAME PATH OF
INSPIRING OTHER YOUNG
BLACK GIRLS LIKE ME
TO BE INFLUENTIAL
IN POLITICS.”** - Khya Nelson

The Tallahassee native, who served as the Student Government Association Director of Student Lobbying, said taking part of the HBCU Scholar Program was important because it was an opportunity that is not granted to every student. “Being a part of the program was personal to me because this is one of the highest levels of distinctions that you can have at your university as a student, not everyone can say that they were a White House HBCU scholar,” Nelson said. “I think that shows that no matter the background, I can come in and be an addition to the team in any political arena. It’s also an opportunity for employment opportunities post-graduation. I’m not looking for what’s next, I have options, I now have networks that I can reach out to while I’m looking for career opportunities.”





Agribusiness student Khya Nelson attends HBCU Conference in Washington, D.C.

In addition to making networking connections, Nelson said the experience allowed her the chance to tour and stand along the steps of the nation's Capital, and encounter several members of Congress, including sitting in on a live speech from Congresswoman Maxine Waters, which the senior agribusiness student noted as a once in a lifetime moment. Nelson aspires to attend law school to aid in her professional journey of advocating for accessibility to nutritious food and quality health in underserved communities.

Selected from a competitive pool of more than 350 students, applicants were nominated and endorsed by their institution president, adding a level of prestige to the application selection process. Scholars from more than 20 states, the Bahamas and Africa were chosen based on their academic achievement, leadership, and civic involvement. Elyse Jones, management and program analyst for student engagement and outreach for the White House Initiative on Advancing Educational Equity, Excellence and Economic Opportunity

through HBCU's said while the selection process is extensive, it ensures student accountability. "Each student is required to submit a letter of interest explaining why they want to become a scholar, how they can leverage this position on their campus, and then provide a letter of recommendation, transcripts, resume, and an application signed by their respective HBCU president or designated surrogate," said Jones. "The reason for this, is because in the past, students would apply for the program, but their leadership didn't know they were selected, so this is just to cover all the bases to make sure everyone is aware while also holding the students accountable and allowing leadership on campus to aid and nurture the student through the HBCU scholar program." Jones said once applications are submitted to the initiative office, they go through a first and second round review from initiative stakeholders, which includes federal partners and HBCU conference sponsors.

After the second round, Jones said students are called for a brief interview and then selections are made. Only two (2) students from each HBCU are selected into the program. Senior political science student, Makira Burns of Orlando was also



selected as an HBCU Scholar. Burns serves as FAMU Student Government Association (SGA) vice president.

During the three-day conference, scholars had the option to attend a Greek step show, hosted by Howard University, and a career and recruitment fair to receive information about mentorships, networking, scholarships, grants, access to research labs, and on-the-spot interviews and hires.



Photo credit, FAMU Office of Communications

They also participated in daily professional development sessions, visited the African American Museum, and attended a meet and greet at the White House hosted by former Atlanta Mayor and current Senior Advisor to the President for Public Engagement, Keisha Lance Bottoms and Second Gentleman, Doug Emhoff. As an extension of the program, Jones said following HBCU week, their office offers monthly master classes led by representatives from Department of Education, The White House or a federal or private partner, who speaks to students

about their personal HBCU testimony. “They provide technical assistance as it relates to jobs, interviews or educate students about entrepreneurship, financial literacy, LGBTQ rights or other issues. Sometimes we have town hall meetings with the Department of Justice or representatives from the House of Representatives and talk about things like voting, bomb threats, FAFSA and loan forgiveness and things taking place at Department of Education and how they’re utilizing these policies.” Jones said these conversations are necessary in keeping HBCU’s aware of occurrences taking place within the federal government and policies that may impact them. “We want to ensure that we have student representation and student voices to better inform the policy decisions that are happening here from our constituents.”



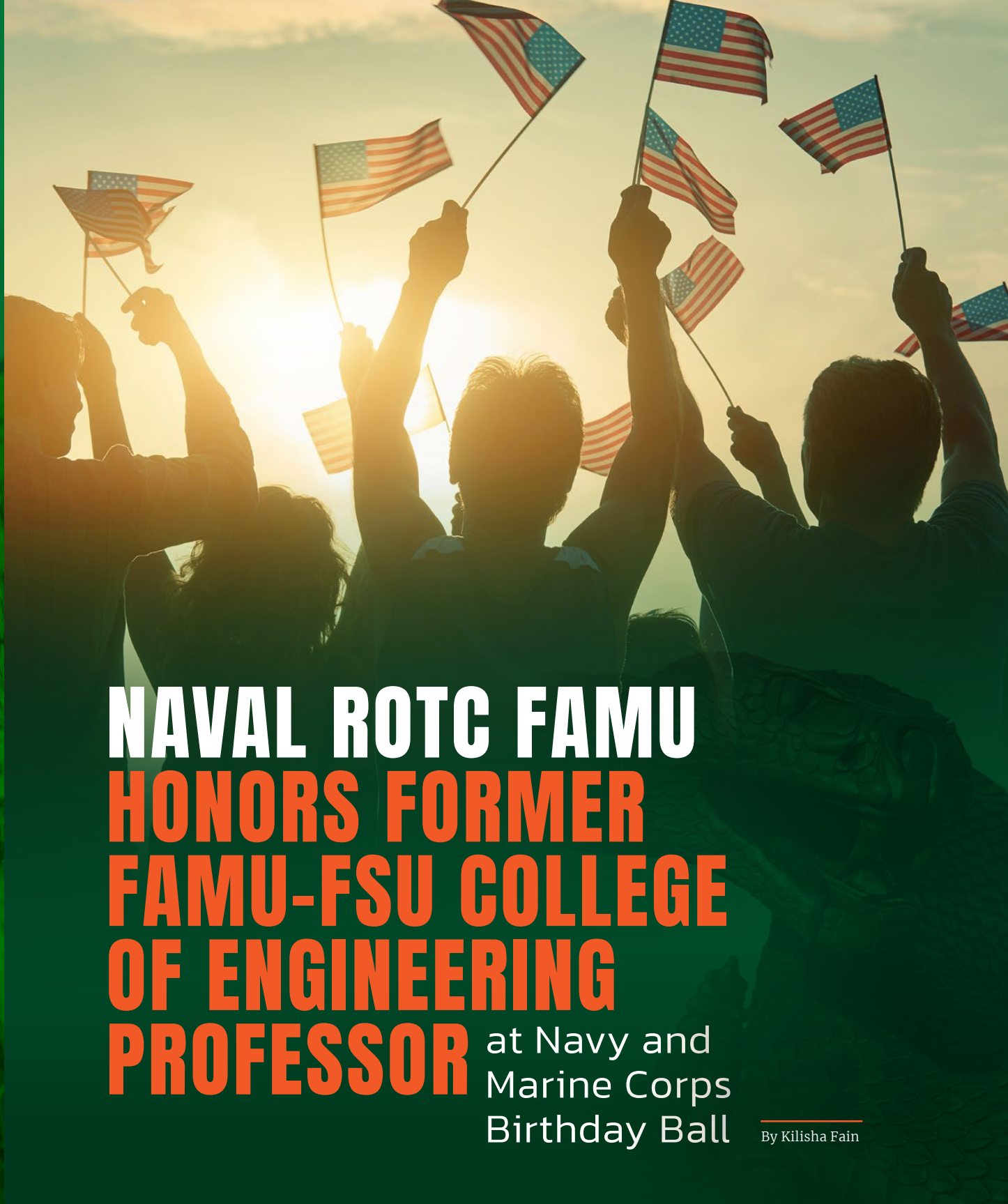
“I now have networks that I can reach out to while I’m looking for career opportunities.”

- Khya Nelson



For more information about the HBCU Scholars Program, visit <https://sites.ed.gov/whhbcu/whhbcu-competitiveness-scholars/>.





NAVAL ROTC FAMU HONORS FORMER FAMU-FSU COLLEGE OF ENGINEERING PROFESSOR at Navy and Marine Corps Birthday Ball

By Kilisha Fain

Former FAMU-FSU College of Engineering professor and retired U.S. Marine Col. Norman E. Thagard, M.D., was the guest of honor at the 247th Navy and Marine Corps Birthday Ball held on Friday, November

11, 2022. Open to all midshipmen, unit officers, families, and honorary guests, the annual event commemorates the Navy and Marine Corps years of dedicated service to our country.

Hosted by Col. Benjamin Ringvelski, NROTC FAMU Unit commanding officer, festivities for the evening included, among others, a sword detail and color guard presentation and the symbolic cake cutting celebration. During this presentation that pays homage to traditions of the past and present, the oldest service member and youngest service member are presented with a slice of the honorary birthday cake. Thagard, who served as guest speaker for the ceremony, received a small statuette of the iconic FAMU rattlesnake as a token of appreciation.



Retired U.S. Marine Corp Capt. Dr. Norman E. Thagard received a small statuette of the iconic FAMU rattlesnake as a token of appreciation.

Thagard is a NASA astronaut, naval aviator, physician and engineer. Shortly after graduating from Florida State University with Bachelor and Master of Science degrees in electrical engineering in 1965 and 1966, respectively, he entered active duty with the U.S Marine Corps Reserve. Achieving the rank of Captain in 1967, Thagard was designated a Naval Aviator in 1968 and was subsequently assigned to duty flying F-4s with VMFA-333 at Marine Corps Air Station, Beaufort, South Carolina. He flew 163 combat missions in Vietnam while assigned to VMFA-115 from January 1969 to 1970. Following his return to the United States he was assigned as aviation weapons division officer with VMFA-251 at the Marine Corps Air Station, Beaufort, South Carolina.

Resuming his academic studies in 1971, Thagard single-handedly pursued degrees in electrical engineering and medicine, receiving a doctor of medicine degree from the University of Texas Southwestern Medical School. Following the completion of his academic endeavors, he served as an intern at the Medical University of South Carolina, later earning his physician license. In January 1978, Thagard was selected by NASA as an astronaut candidate and completed a one-year training and evaluation period in the following year, making him eligible for assignment as a mission specialist on future space shuttle flights. A veteran of five space flights, he has logged more than 140 days in space. Serving in many capacities, he was a mission specialist on STS-7 in 1983, STS 51-B in 1985, STS-30 in 1989, payload commander on STS-42 in 1992 and was the cosmonaut and researcher on the Russian Mir-18 mission in 1995.

Following his retirement from NASA in the winter of 1995, Thagard returned to his alma mater, Florida State University, as a visiting professor and director of external relations for the FAMU – FSU College of Engineering. As an esteemed pilot, he has logged more than 2,200 hours of flying time – the majority in jet aircraft. Recognized as the first American to ride to space aboard a Russian space vehicle and the first American cosmonaut, Thagard is a member of the United States Astronaut Hall of Fame and has received scores of awards throughout his career, including 11 Air medals, the Navy Commendation medal with Combat “V”, the Marine Corps “E” Award, the Vietnam Service medal, the Vietnamese Cross of Gallantry with Palm, five NASA Space Flight medals, two NASA Distinguished Service medals, and two NASA Exceptional Service medals.

Midshipman Brooklyn Ford said Thagard’s many accomplishments and his connection to the FSU-FAMU school community is what motivated their decision to select Thagard as guest speaker for the evening. “We chose him because he is an alum of FSU and taught at

the FAMU-FSU College of Engineering, so we thought it was cool that he had roots here and had accomplished so many great things.” Ford, a junior chemical engineering major, served as chair of the events planning committee and referenced the opportunity to relish in the rich history of the Navy and Marine Corps as the highlights of the evening. “Seeing people enjoy themselves, watching this amazing ceremony take place and having the honor of seeing so many people witness what the military stands for, makes me proud of my decision to serve in the future.” Over 130 guests attended the ball.



(From left): CAFS Dean Robert Taylor, Ph.D., Retired U.S. Marine Corp Capt., Dr. Norman E. Thagard, M.D., Mrs. Beverly Taylor and FAMU NROTC Unit Commanding Officer, Col. Benjamin Ringvelski.

As noted on its webpage, NROTC FAMU was founded in 1972 and “has graduated and commissioned hundreds of Navy and Marine Corps officers and was the fourth of six NROTC Units to be established on the campus of a Historically Black University. NROTC FAMU is comprised of students from FAMU, Florida State University (FSU), and Tallahassee Community College

(TCC).” Upon graduating the program, students – known as Midshipmen – are commissioned into the U.S. Navy and U.S. Marine Corps.



“Seeing people enjoy themselves, watching this amazing ceremony take place and having the honor of seeing so many people witness what the military stands for, makes me

PROUD OF MY DECISION TO SERVE IN THE FUTURE.”

- Brooklyn Ford



For more information, visit NROTC FAMU online at <https://cafs.famu.edu/departments-and-centers/navy-rotc/index.php>

CAFS Dean Robert W. Taylor, Ph.D. was among several university leaders and CEO of Aura Air, Roei Friedburg, participating in the ribbon cutting ceremony for the opening of the new Center of Excellence for Indoor Air Quality.



RIBBON CUTTING RIBBON CUTTING CEREMONY CELEBRATES LAUNCH of New Center of Excellence for Indoor Air Quality

University leaders, partners and friends celebrated the official opening of the new Indoor Air Quality (IAQ) Center of Excellence (COE) during a ribbon cutting ceremony on Wednesday, November 30. The new facility will be housed on the second floor of the Frederick S. Humphries Science and Research Center, located at 339 W Pershing St., on the Florida A&M University (FAMU) campus.

The center, directed by Victor Ibeanusi, Ph.D., dean of FAMU's School of the Environment, will be utilized for studying, testing, and analyzing indoor air quality in the State of Florida. In partnership with

Aura Air, an innovative technology provider of smart air monitors and purifiers, the COE will serve as a conduit in raising awareness of the increasing hazards of contaminated and poorly ventilated indoor spaces and the environmental impacts to IAQ on Florida residents.

Ceremonial guest for the ribbon cutting included FAMU President Larry Robinson, Ph.D., academic deans, faculty, staff, students and community members. Chief Executive Officer (CEO) of Americus-Aura Air, Roei Friedburg served as guest speaker for the momentous occasion.



For more information visit the School of the Environment online at <https://soe.famu.edu/index.php> or email Dr. Ibeanusi at victor.ibeanusi@famu.edu.

CAFS

Welcomes

NEWLY APPOINTED CHANCELLOR TO THE "HILL"

By Kilisha Fain



FAMU President Larry Robinson Ph.D, Chancellor Ray Rodrigues, Director of FAMU's Center for Viticulture and Small Fruit Research, Violeta Tsolova, Ph. D and CAFS students look on as Dean Robert W. Taylor, Ph.D. shares the outstanding work being done in grape research. (Photo Credit: Glenn Beil)



CAFS Associate Dean for Academic Programs, Neil James, Ph.D. talks to Chancellor Ray Rodrigues and FAMU President Larry Robinson about food and bioprocessing research being implemented in biological systems engineering. (Photo Credit: Glenn Beil)



"It's a pleasure for us to **WELCOME MR. RODRIGUES"**

- President Larry Robinson

On Tuesday, December 6, Florida State University System Chancellor Ray Rodrigues joined Florida A&M University (FAMU) President Larry Robinson, Ph.D., university administrators, and student leaders for a tour of the College of Agriculture and Food Science (CAFS), during his first official visit to the university as the recently appointed chancellor.

Rodrigues, who was appointed by the Board of Governors in September following the resignation of Marshall Criser III, met with CAFS administrators, students and faculty representatives in the lobby and auditorium of the Perry Paige building. While a packed agenda equated for a time sensitive schedule, the visit provided the chancellor with an opportunity to learn about the college's unique strengths, opportunities and successes. "It's a pleasure for us to welcome Mr. Rodrigues here for his first official visit to Florida A&M

University," said Robinson. "While we have a short period of time here today, we want to use this as an opportunity to show him some of the great work being done in the College of Agriculture and Food Science."

During the visit, CAFS leaders illustrated some of their programs highlights, including advancements in agronomy, entomology, water resource management, food and animal science research, and the outreach efforts being made via cooperative extension programs to communities and families that aid in improving quality of life. Students utilized the cChancellor's visit as an opportunity to showcase and share details about their scientific STEM research posters.

The Chancellor's visit wrapped up with tours of the School of Architecture and Engineering Technology building and a lab tour at the School of the Environment.

USDA DEPUTY UNDER SECRETARY

Montaño Greene

Discusses Climate Smart Initiatives at FAMU

USDA Executive Addresses New Funding Initiative Supporting Climate-smart Commodities

By Kilisha Fain



“There was a need to figure out how to

DO SOMETHING DIFFERENT”

- Montaño Greene



USDA Deputy Under Secretary Gloria Montano Greene with CAFS Dean Robert W. Taylor, Ph.D., and USDA 1890 Scholars.

A senior U.S. Department of Agriculture (USDA) official recently visited Florida A&M University (FAMU) to highlight the University’s receipt of three grants totaling \$15 million as part of the federal agency’s Partnership for Climate-Smart Agriculture and Forestry Program.

On Wednesday, February 8, Gloria Montano Greene, deputy under secretary of farm production and conservation, spoke in front of a crowd of university leaders, faculty, staff, students, partnering agencies, and farming producers in FAMU’s Perry-Paige Auditorium, to discuss the partnership and recognize the investigative efforts of three FAMU researchers whose grant projects have been selected to receive funding to support climate-smart practices.

“We’re excited to celebrate what this wonderful investment means, and not just for Florida A&M University, but also for the development and strengthening of agriculture in making it more centered in some of the spaces it has not been previously,” said Montano Greene. “Understanding the pipeline and the direction of how we’re moving forward with agriculture will help us serve better, learn from the past, and impact how we think and prepare, so we really thank you for this partnership.”

Montano Greene said the decision to develop the grant opportunity came because of continuous feedback from the public.

“It was about a year ago today that the Secretary of Agriculture announced this opportunity for climate imprint,” she said. “We decided to create this funding opportunity in response to the constant theme of concerns and problems we

heard from consumers wanting to know what agriculture is doing to mitigate or address climate change. There was a need to figure out how to do something different.”

The University of Arizona alum said the design of the grant application was developed specifically to ensure partnerships would be inclusive of rural and underserved communities.

“We put in the expectation that there was collaboration for partners who were used to serving underserved communities and that they had to consider it as part of their plan,” she said. “This was something we weighed into the scoring.”

The Arizona native said growing up in a rural community gave her first-hand knowledge about the impacts of agriculture and the importance of investing in communities.

“For many of us, it is our generational normal to have farming, agriculture, and to live in an area where the closest corner store is a 45-minute drive away and the closest grocery store is an hour and a half away,” she said. “For me, that was my normal.”

For this partnership, FAMU principal investigators will carry out fundamental research in climate-smart practices over the next five years, that will expand markets for climate-smart commodities, leverage the greenhouse gas benefits of climate-smart commodity production and provide economically viable climate-smart cropping options for small and underserved producers, ultimately benefiting the environment, agriculturalists, and manufacturing sectors.



During the three-hour event, each principal investigator highlighted details about their respective projects.

Odemari Mbuya, Ph.D., an agricultural sciences professor and director of the FAMU Center for Water Resources, has been awarded \$4.9 million and will serve as principal investigator, focusing on research that will improve the carbon sink by encouraging small and underserved farmers in the southeastern U.S., specifically Florida, Alabama, and Louisiana, to plant industrial hemp, a crop with high carbon sequestration efficiency and a climate-smart commodity crop.

Juzhong Tan, Ph.D., a CAFS assistant professor, received \$4.8 million to investigate the development of biochar-based climate-smart practices and technologies that may be implemented on farms, especially in underserved areas, and to market the resulting climate-smart commodities.



(From Left) Juzhong Tan, Ph.D., FAMU assistant professor, Gloria Montaño Greene, USDA deputy undersecretary, Odemari Mbuya, Ph.D., FAMU professor and director of Center for Water Resources, and Jennifer Taylor, Ph.D., FAMU associate professor.

Jennifer Taylor, Ph.D., a CAFS associate professor, was awarded \$4.9 million and will lead investigations to advance equity by minimizing transaction costs and addressing cultural dynamics for Black and indigenous producers using a farmer-to-farmer collaborative training approach.

“We understand the importance of the work that we do in agriculture and want to continue our efforts to emphasize that, which is why FAMU is proud to uphold

the mission of the USDA,” said Allyson L. Watson, Ph.D., interim provost and vice president for the Division of Academic Affairs. “We know that America’s commodities produced using climate-smart practices are important as we move forward in this nation. This work allows FAMU, as an 1890 land-grant institution, to continue to focus on our work with small and underserved producers.”

In addition to each project lead’s core team, FAMU graduate students will be selected, recruited, and trained to assist with the research projects as part of their thesis.

Following presentations made by each principal investigator, Montaño Greene facilitated a question-and-answer discussion with students on issues impacting the agricultural sector, then participated in a brief tour of FAMU’s campus.

“Florida A&M University has shown up in all areas...the science, the research, and the capacity,” Montaño Greene said. “You guys have also shown up indirectly by asking how we can support the next generation of agriculture to be a part of this effort. Congratulations on almost \$15 million on these projects. You are small, yet powerful, moving mountains with what you have to make ripple effects for generations.”

The grants are part of a \$325 million federal investment in 71 projects under the second funding pool of the Partnerships for Climate-Smart Commodities effort. In total, the investment from both funding pools is more than \$3.1 billion for 141 tentatively selected projects, which includes over 30 minority-serving institutions and groups dedicated to working with small and underserved producers.

A complete list of projects is available at usda.gov/climate-smart-commodities.



For more information about USDA resources supporting farmers and ranchers in producing climate solutions, visit farmers.gov/climate-smart.

CAFS PROFESSOR RECEIVES USDA NRCS *Grant Awards* on Partnerships for Climate-Smart Commodities

By Kilisha Fain,
with contributions
by Odemari Mbuya, Ph.D.



The impacts of climate change have had an alarming effect on farmers, ranchers and forest landowners. From persistent droughts, declining freshwater resources and severe floods, it is more critical now than ever, to forge new developments that will cultivate sustainable climate-smart commodities and aid in improving the carbon sink and preserving the health and endurance of American agriculture.

To address the critical significance of these issues, A team of researchers, led by Odemari Mbuya, Ph.D., professor of agricultural sciences and director of the Center for Water Resources, developed and submitted two proposals to U.S. Department of Agriculture (USDA) National Resources Conservation Services (NRCS), resulting in approval of rewards totaling over \$9 million in federal grant funding.



The first proposal entitled “A Comprehensive Evaluation of the Impact of Industrial Hemp (*Cannabis sativa*) and Soil Microalgae Consortium (*Chlorella spp* and *Scenedesmus spp*) as High-Efficiency Carbon Sequestration Model Plants: Implications for Climate Change and Soil Improvement,” is a collaborative effort developed from a network of three 1890 Land-grant minority serving institutions including Florida A&M University, Alabama A&M University, and Southern University via partnership

with the University of Florida (UF) and the National Hemp Growers Cooperative, LLC (NHGC), to create a unique synergy for engaging small and/or underserved farmers in production agriculture. The focus of this project, which was approved for \$4,990,000, will be to improve the carbon sink by encouraging small and/or underserved farmers in the southeastern United States, specifically Florida, Alabama, and Louisiana to plant industrial hemp (*Cannabis sativa*), a crop with high carbon sequestration efficiency and a climate-smart commodity crop.

“Climate change is a big topic. It is not only necessary, but compelling to find ways of mitigating the challenge of climate change. One of the biggest problems of climate change is too much carbon dioxide in the atmosphere, which causes global warming, we call it greenhouse gases,” Mbuya said. “The way to resolve this problem is to remove the carbon dioxide from the atmosphere. Plants can be used as a sink to remove carbon dioxide, which is a good thing because as the plants remove carbon dioxide, fresh oxygen is pumped into the atmosphere.”

Mbuya, who also serves as a university branch director for The Florida Climate Institute, said fiber from industrial hemp has the potential for developing new markets including food, plywood and hempcrete (blocks) for new building construction, bioplastics, livestock bedding, cloth, medicine, and biochar, which helps to improve soil fertility. For hemp farmers and other stakeholders, the introduction of this new market has the potential to generate a profitable added source of income.

Direct training and education will be provided to small and/or underserved farmers about the economic and environmental benefits of hemp production. Field days will be conducted at all participating institutions to familiarize farmers with all activities involved in hemp production, including marketing.

THE PROJECT WILL FOCUS ON FOUR MAJOR OBJECTIVES:

- 1 Evaluate the carbon sequestration ability of industrial hemp, and the ability of soil microalgae to improve soil health and soil dynamics properties in different agroclimatic zones in the southeastern United States (Florida, Alabama, and Louisiana)
- 2 Recruit, enroll and engage small and/or underserved farmers, and other stakeholders, to implement and evaluate a comprehensive set of regenerative practices that include cultivating industrial hemp for carbon sequestration, the use of rotational cover crop(s) to improve soil carbon and health while reducing soil erosion and pest/disease buildup over time in the area noted above
- 3 Couple the development of best agronomic practices with new, appropriately targeted, markets for industrial hemp in southeast of the United States to foster the adoption of industrial hemp as an economically viable, climate-smart cropping option for small and/or underserved farmers
- 4 Develop a program to monitor, report and verify activities related to carbon sequestration and greenhouse gases (GHG) reduction in participating farms with the intent of potentially creating a carbon credit system for the benefit of small and/or underserved farmers

The second proposal, entitled “**Reviving the Chestnut: The Climate Smart Crop,**” was approved for approximately \$4,980,000; and will re-introduce chestnuts as a viable and profitable climate-smart crop, with an emphasis on enabling underserved and minority farmers to establish chestnut orchards in southwest Georgia. The chestnut has a notable history in this country as a staple commodity consumed by Americans in large capacities. Despite its decline in consumption, chestnuts are inherently a climate-friendly crop. Reviving chestnut production in the U.S. is an opportunity to foster restorative and carbon sequestering agricultural practices that can increase incomes for small and underserved farmers, allowing the preservation of working farmland in southwest Georgia. “Chestnuts was a popular crop used back in the 1700’s, but it was decimated by diseases,” said Mbuya. “Now, chestnuts are making a comeback, and can be used as a crop for carbon sequestration, which means that once the carbon is removed

from the atmosphere, it is no longer able to cause global warming. It can also be found in plants or in the soil, so we are trying to see how much carbon the chestnut can sequester and then market them as a 'climate smart' commodity.”

Mbuya said bringing chestnuts back to the mainstream public will also create a new market for developing self-sustaining food production in this country. “Sometimes we don’t know how the food coming to us from outside countries was produced, there are a lot of chemicals being used and a lot of times we consume these foods without knowing what was used to make them.” Mbuya said efforts from this project will increase the acreage of farmland planted in chestnuts, so they are planted and managed in the most environmentally friendly and carbon-conscious methods available.

In comparison to all tree nuts grown in America, chestnuts generate the least amount of greenhouse gas emissions for a fresh nut, making it the most carbon





friendly nut that can be grown in the country. The revival of chestnuts at the national market level creates enormous opportunities for development of climate-smart chestnut production on minority-owned or underserved farmers' land.

The project, led by Georgia Alabama Land Trust, will center around Dougherty County, GA, and surrounding counties due to the areas well-known agricultural center with significant production of a wide variety of commodity and specialty crops.

EFFORTS TO REVIVE THE CHESTNUT WILL FOCUS ON FOUR MAIN GOALS:

- 1** | Develop climate-smart chestnut production on agricultural land that is well-suited to chestnut orchards, utilizing sustainable agricultural practices
- 2** | Focus on providing financial and technical assistance to underserved and minority growers in southwest Georgia to convert underutilized pasture and/or row crop land to chestnut production- enabling farmers to make a better living by growing a higher valued crop
- 3** | Pioneer methods for tracking carbon sequestration of climate-smart chestnut production, enabling a transparent and verifiable method to market the carbon impacts of this crop
- 4** | Market chestnuts grown in this manner as a premium specialty climate-smart crop, to supplant larger carbon footprint foods and replacing carbon intensive imported chestnuts.

FAMU and Pippin Farms will serve as the primary technical leads for the project. Pippin Farms, owned and operated by Clarence (Trey) M. Pippin, will work collaboratively with additional partners, Southern Farmers Collaborative Group, and The University of Georgia Cooperative Agricultural Extension, to recruit producers and host training programs.

A total of four FAMU graduate students (two students per project) will be selected, recruited and trained to assist

with the research projects as part of their thesis. "The long-term goal of each of these projects is carbon sequestration and mitigating climate change," Mbuya said. "Climate change is not something you can change overnight, so we are optimistic that over time, these efforts will aid in addressing the issue of climate change and also improving soil health."

Partners for the Reviving the Chestnut... project include The University of Georgia Cooperative Agricultural Extension;

Carbon Farmer LLC; Florida Agricultural and Mechanical University (HBCU), Ray Griffin—small-scale, beginning farmer; Clarence (Trey) M Pippin—specialty crop farmer, and owner of Pippin Farms, LLC.; Shena Pippin, specialty crop farmer, and owner of Pippin Orchards, LLC; Willie Jones— minority, small, limited resource, beginning farmer, Southern Farmers Collaborative Group— Alfred Greenlee, President.

Co-principal investigators on the “... impact of industrial hemp...” project include Wei Zhou, Ph.D., associate professor of agricultural sciences at FAMU and lead for Industrial Hemp Research team; Zack Brym, Ph.D., assistant professor at UF/IFAS, where he leads the Hemp project; Marilyn Swisher, Ph.D., professor of family, youth and community sciences at UF/IFAS; Gilbert L. Queeley, Ph.D., research associate of agricultural sciences at FAMU with major assignment in Extension; J. David Cornett, Ph.D., chief agronomist for the National Hemp Growers Cooperative (NHGC); Carlene Chase, Ph.D., associate professor of horticultural sciences at UF/IFAS with expertise in cover crops, living mulch for weed management, and enhancing cropping system sustainability and lead for the UF team; Amita Jain, Ph.D., research associate, analytical chemist and laboratory manager responsible for sample analysis at the Center for Water Resources, FAMU; Ernst Cebert, Ph.D., associate



Odemari Mbuya, Ph.D., receives grant funding totaling over \$9 million to research industrial hemp and chestnuts, and introduce them as new markets that can be economically viable, climate-smart cropping options for small and/or underserved farmers.

professor, Department of Biological and Environmental Sciences at Alabama A&M University and lead of the industrial hemp pilot program; Rosalie Koenig, Ph.D., senior lecturer and director for the Center for Stress Resilient Agriculture at UF/IFAS; Tara Wade, Ph.D., assistant professor of agricultural and resource economics at UF/IFAS Southwest Florida Research and Education Center; and James Obuya, Ph.D., assistant research professor and hemp program lead at Southern University.



PROVOST *Listening* TOUR

Provost Watson, Dean Taylor, and Dr. James listen to a group of CAFS Students in the dean's conference room.

Provost Allyson L. Watson, Ph.D., toured the College of Agriculture and Food Sciences (CAFS) facility on Friday, March 24th as part of her “Listening Tour” of FAMU’s colleges, in an effort to engage in informal conversations with CAFS faculty and staff. The tour was led by Robert W. Taylor, Ph.D., dean and director of land-grant programs, along with several members of the CAFS leadership team.

During the two-hour tour, Provost Watson participated in brief meetings with

Research, Cooperative Extension and Academic Programs faculty and staff, and ended the day with a roundtable discussion with CAFS students, Dean Taylor, and Neil James, Ph.D., associate dean for academic programs.

The listening tour offered opportunities for students, faculty and staff to communicate with Provost Watson, and sequentially, for her to gather feedback related to faculty and student highlights, issues, perceptions, and needs within the college.



CAFS graduate student Kristen Adkins shares details of her ongoing research project to Provost Watson as Dean Taylor, Dr. Haseeb, and Dr. Hix look on.



CAFS students Jevon Bell and Anthony Cordero talking with Provost Watson about testing cannabinoids in hemp flower by SRI gas chromatograph systems.



Top to Bottom, Left to Right

Dean Robert W. Taylor, Ph.D., welcomes Provost Allyson Watson, Ph.D. | Dr. James describes activities in the Food Science program to Provost Watson as Dr. Robinson and Dr. Janen look on. | Dr. Sharma shows Provost Watson an insect collection. | Dr. Hsieh shares details of his new invention with Provost Watson outside of the wetland ecology lab. | Provost Watson is met with welcome favors and warm greetings from staff, both virtually and in-person, during her tour of the Cooperative Extension office. | Alexander Orfinger (Ph.D. Entomology Student) presents his ongoing research work to Provost Watson and Dean Taylor. | Research Entomologist, Dr. Rasmussen speaks with Provost Watson about his current work. | Provost Watson listens as Dr. Jain discusses her new analytical machine in the water resources lab. | Dr. Kanga introduces Provost Watson to two entomology graduate students, Jamesia Henderson and Kristen Adkins. | Provost Watson takes a brief intermission to snap a photo with Shanteva Leonard, coordinator of transfer students and career development support. | Mrs. Peters showing Provost Watson a part of the aquatic insect collection.



Dr. Ihsan Nurkomar installing an automatic insect trap in Gadsden County, Florida with two graduate students, Ann Marie Baker Robinson and Larisner Simeon.

TRAINING OF A BORLAUG FELLOW FROM *Indonesia*



By Muhammad Haseeb, Ph.D.





Dr. Muhammad Haseeb observing nursery plants for insect pests in Yogyakarta, Indonesia.

During the fall semester of 2022, Florida A&M University (FAMU), hosted the Dr. Ihsan Nurkomar Borlaug Fellow training, a project funded through the USDA Foreign Agriculture Service (USDA-FAS). Two mentors, Muhammad Haseeb, Ph.D., FAMU College of Agriculture and Food Sciences (CAFS) Center for Biological Control (CBC), and Jesusa Legaspi, Ph.D., USDA Agricultural Research Service (USDA-ARS), Center for Medical, Agricultural and Veterinary Entomology (CMAVE), trained the fellow for three months, from August to October 2022. The major goal of the training was to timely monitor and manage cucumber moths to sustain selected cucurbit crops productivity.

Insect pest monitoring is a crucial part of agricultural cultivation practices because it helps provide important information related to pests present or absent and

their density to make a timely decision for pest management. Insect monitoring can be accomplished by observing several plants in an area. The population of a pest is recorded by calculating the number of insects caught either in traps or by counting their numbers per plant, per leaf, per fruit, per flower, etc. The number of insects found then undergoes the statistical procedure to determine the economic thresholds by a systematic modeling procedure to warrant pest control measures available.

Numerous agricultural cultivation activities are generally carried out on a small to large scale in the open fields. Large-scale agricultural activities would undoubtedly require more resources and trained pest scouts. Indeed, insect monitoring activities require skilled human resources, time, and operational costs to manage and

control a pest properly. Technology can be deployed to facilitate agricultural activities as a form of adaptation to the times. The use of technology also contributes to precision agriculture, such as the use of pest population monitoring tools. Using automatic monitoring tools not only reduce human labor and costs but increase data accuracy because data can be accessed anywhere, anytime, in real-time.

The cucumber moth *Diaphania indica* (Saunders - 1851) (Lepidoptera: Crambidae) is a major pest of some commercial cucurbit crops. The pest is widespread in Japan, Korea, Pakistan, India, China, Taiwan, Tropical Asia, Africa, the Netherlands, some Pacific Islands, and the United States. However, this pest has been recognized as a minor pest in Indonesia. This may be due to the low population density in the field and the high parasitism rate by *Apanteles taragamae* Viereck (Hymenoptera: Braconidae), a gregarious larval parasitoid of *D. indica* with a 96% parasitism rate in cucumber plants in the field. This pest has also been reported in the United States in Florida. However, the extent of the attack, types of natural enemies, and host plants that can

be potential hosts are not clearly known. In this three-month training study, the infestation rates of *D. indica* on several cucurbit plants and associated natural enemies were carried out with a view to validate an automatic monitoring system based on pheromone for *D. indica* in selected cucurbits which was carried out in the Florida panhandle. Most of the insect monitoring and trapping activities occurred in Leon and Gadsden Counties. Also, several students and interns participated in the research work. Based on the research findings the Borlaug Fellow presented his work last fall in during the World Food Program in Des Moines, Iowa, and Global Fresh Produce show in Orlando, Florida.

Haseeb traveled to Yogyakarta, Indonesia for the follow-up of the Borlaug Fellow's training, March 9-13, 2023, to observe the fellow's progress, which consisted of visiting onsite small-farm growers' fields and several localities. During this time, he also visited an extension agent and two commercial pesticide dealers. After three months of training, the Borlaug Fellow had improved his knowledge, necessary skills, and abilities to support small-farm growers, students, and extension agents.



Dr. Ihsan Nurkomar observing and collecting cucumber insects, assisted by an undergraduate student, India Watson in Gadsden County, Florida.

New

REMOTE LEARNING PRODUCE CURRICULUM

Aims to Increase
Food Safety
Awareness to
Minority Farmers

By Kilisha Fain,
with contributions
by Harriett A. Paul



Consumers and farmers both have a common interest in the consumption and growing of harmless foods. Influences such as changes in food production and supply, new and emerging bacteria and toxins, and changes in consumer habits, are quite largely, major contributors to the growing challenges to food safety. According to the National Institute of Food and Agriculture (NIFA), millions of Americans are medically treated for foodborne illnesses each year as a result of poor food safety practices. To combat this growing problem, Florida A&M University's (FAMU) Center for International Agricultural Trade Development Research and Training (CIATDRT) and Office of Cooperative Extension, have partnered to help lead in the development of a new curriculum in food and agriculture, centered around improving producer produce safety practices, as part of a two-year \$330,000 grant from USDA-NIFA Food Safety Outreach Program (FSOP).

The FSOP project titled, **“Development and Evaluation of a Remote Learning Produce Food Safety Curriculum,”** is led by the University of Florida (UF) as the primary institution and subcontracted by FAMU, in compliance with new legislation under the Food Safety Modernization Act (FSMA), and implemented by the Food and Drug Administration (FDA). The goal of the project is to develop an engaging remote learning produce food safety

curriculum that is highly accessible to small, beginning, and minority farmers to raise their awareness about food safety and equip them with skills to adopt proven food safety risk-reduction practices. This goal is being accomplished by

- 1 | developing remote learning modules and expanding target audiences,
- 2 | developing “live” instructor-led workshop webinars on timely topics selected by stakeholders and delivering to expanded audiences,
- 3 | and developing evaluation tools and assessing short- and medium-term learning and impact.

“I reached out to my colleagues in Cooperative Extension, and (Director) Vonda Richardson agreed to collaborate with me on this project,” said Harriett A. Paul, director for FAMU's College of Agriculture and Food Sciences (CAFS) CIATDRT and Office of International Agriculture Programs. “As the managing CO-PI, I oversee the project here at FAMU and efforts to assist beginning and underserved farmers in food and produce safety training, based on the new legislation and requirements for produce safety under FSMA.”



UF-FAMU "Development and Evaluation of a Remote Learning Produce Safety Curriculum" Group pictured from Left to Right: Maxo Etienne, Entomology, Taquasha Freeman, SBI-Supply Chain Management, Aaron Francis, Agricultural Sciences, Harriett A. Paul, Center for International Agricultural Trade Development Research and Training and FAMU PI, Kristen Atkins, Entomology, Kasey Elder, Animal Science, and Almando Morain, Environmental Sciences.

While USDA-NIFA provided funding for the program in September 2020, there was an initial delay in the start of the project due to the Covid-19 pandemic, which forced most staff to work remotely. “We couldn’t engage students, couldn’t engage farmers, so my role was to promote the participation of our CAFS students into the program starting spring 2021,” said Paul. As program manager for FAMU, Paul engaged 10 CAFS students, oversaw their training on the requirements of produce safety and their participation in the development of an online curriculum led by UF’s Principal Investigator, Dr. Michelle Danyluk, Professor Food Science at the UF Institute for Food and Agricultural Sciences (IFAS) Citrus Research and Education Center.



“This project is focused on designing and delivering a remote produce safety curriculum to underrepresented, new beginning and minority farmers, which we hope will help to address

THIS NEED FOR TRAINING IN FLORIDA” - Harriett A. Paul

“Traditionally, the vast majority of limited resource farmers, inclusive of socially disadvantaged farmers, beginning farmers and other minority farmer groups, did not have access to Produce Safety Alliance (PSA) produce safety training,” said Gilbert Queeley, Ph.D., Extension Agent III, of FAMU’s Cooperative Extension Program. “This can be counterproductive, particularly considering that produce safety certification is a pre-requisite for farmers to do business with commercial markets.” Queeley, who served as CO-PI

on the project, said since the program’s inception, notable gains have been made towards filling the gaps to enhance overall food quality and to safeguarding the integrity of our food supply, by providing limited resource farmers with access to produce safety trainings.



Former CAFS MS graduate student Rachel Fernandez in the library assisting with remote learning project.

“The training curriculum will include material intended for farm owners and managers, as well as material they can use to help train employees and other farm helpers,” said Danyluk. “Short- and medium-term evaluations will indicate how participants benefitted from participating in the modules. The successful completion of the project is anticipated to generate more than 20 remote learning modules and 8 instructor-led webinar workshops targeting small and underserved farmers.” Danyluk says



Harriett A. Paul, Director, Center for International Trade Development Research and Training working collaboratively with Ashlee Skinner, University of Florida Project Manager, during a workshop held for FAMU students engaged in the project.



remote learning experiences like these will leave participants with a new portal to access food safety training information important for their own understanding and for use in training employees and other farm workers.



Graduate student Kristen Adkins.

Dr. Queeley’s target was to engage 20 farmers over the 2-year timeframe of the training program. Queeley said access to

produce safety training can open the door to farm profitability, if socially disadvantaged farmers who become produce safety certified, use it as an incentive to expand their farming operations.

“It has been a pleasure collaborating with UF and Dr. Danyluk’s in the implementation of this program at FAMU,” said Paul. “We have achieved the targets set for both student and farmer participation, capacity development, as well as new curriculum developed for the minority and socially disadvantaged producer audiences. An additional notable achievement is that our bilingual students have contributed greatly to the translation of English to Haitian Creole produce safety training content. This will be a great asset to the program long after this contract has ended.”

Students received annual stipends for their participation in the project. Currently, Haitian graduate students Maxo Etienne, Walker Marechal (doctoral candidate), and Almando Morain (doctoral candidate) are completing additional work to translate the PSA Grower Training Manual from English to Creole to benefit Creole speaking clients or recipients of the training program.



Program Manager and Director, Center for International Trade Development Research and Training, Harriet Paul and CAFS students participated in the University of Florida-Florida A&M University project, "Development and Evaluation of a Remote Learning Produce Safety Curriculum."

FRESHMAN

Chai Comrie

Returns From An Educational Voyage to Greece

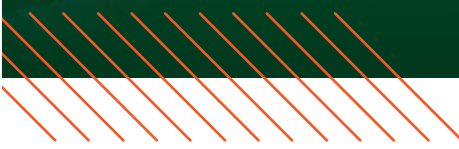
By Kilisha Fain



“I gained a new life experience.”

- Chai Comrie

CAFS freshman, Chai Comrie with students across the country participated in the JOIDES Resolution Academy.

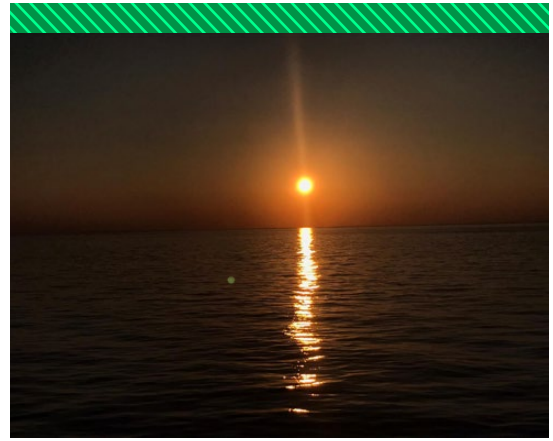


“I gained a new life experience.” Those are the six words College of Agriculture and Food Sciences (CAFS) student Chai Comrie used to describe his recent venture studying abroad. Whether taking an exciting journey countryside or abroad, traveling is one of the best ways for college students to have new experiences and witness different cultures. For Comrie, the opportunity to explore new and foreign environments meant a chance to learn new skills and gain a new network of friends.

The first-year, animal science pre-vet major recently traveled to Heraklion, Greece to participate in the International Ocean Discovery Program (IODP) for a six-week study, aboard the JOIDES Resolution (JR), a scientific ocean drilling research vessel that maneuvers into the ocean floor to collect and study core samples, giving scientist a glimpse into Earth's development.

Funded by the National Science Foundation (NSF), the program took place February 9 – March 21, 2023, to teach students about how the study of the earth’s core is significant to understanding climate control and the earth’s history. Comrie, who learned about the program from his biology professor, said he always aims to take part in opportunities that enhance his professional growth. “Last fall, Dr. {Dawn} Lewis sent out an announcement about an upcoming opportunity to participate in a program aboard a scientific ocean drilling vessel. I had been thinking about studying abroad for a while, so I saw this as a chance to see if I could do it.”

After a lengthy application process, the Fort Lauderdale native received an email confirmation of his acceptance into the program. “I’m always up for learning new things to build on my experiences,” said Comrie. “So, the fact that I had a chance to visit new countries, while also participating in field research was exciting for me. It was also a chance for me to connect with other students with the same interests as mine.”



After 20 hours of travel, Comrie arrived in Heraklion, where he took part in a brief tour of the city before boarding the ship. On board, he joined 15 students from colleges around the country, along with JOIDES Resolution crew members, professors and staff representing Columbia University, Texas A & M University, UC Berkeley, and NASA. Comrie said his first two days were spent learning about the ship, its many laboratories, practicing evacuation drills and receiving other instructions. He described a typical day at sea as one that included waking up at 6:00AM, taking COVID tests before breakfast, then assembling in the meeting room to learn the activities for their 12-hour shift.



Chai Comrie in the research lab aboard the JOIDES Resolution.

“Most days, we prepared smear slides of the core and microfossils that were collected and conducted multiple research

tests. We even had lessons in filming and writing children books,” Comrie said. “Our day typically ended around 8 p.m. each night, then, we would play games, watch movies or even sing karaoke.”

In addition to his visit to Heraklion, the ship also docked in Tarragona, Spain, where Comrie said he enjoyed tours of the city and partook of the local cuisine. Following an overnight stay in Barcelona, Spain, the group parted ways and Comrie prepared for his return trip to Tallahassee.



Dawn Lewis, Ph.D., instructor of Organismal Biology and Microbiology in the College of Agriculture and Food Sciences (CAFS) said connecting students with opportunities like these can be transformative experiences. “These programs expose students to an array of scientific research practices and techniques,” said Lewis. “It’s also an opportunity for them to network with students from across different countries.” Lewis said Comrie was the first student from an HBCU to be selected for the program.

In addition to research offerings, IODP provides opportunities to attract, retain and diversify the workforce in the field of science, which is currently a major challenge facing most countries. Lewis said the program also addresses exposure gaps among student populations of science, technology, engineering, and mathematics (STEM).

“This is an NSF funded program,” said Lewis. “My hope is that these experiences will serve as a mechanism for increased engagement in science and technology and provide a vehicle for professional development in scientific research.” Travel expenses, including lodging and meals were paid for by the Ambassadors for STEM Training to Enhance Participation (A-STEP) and the U.S. Science Support Program.



“The best part of this experience for me would definitely have to be the people, not just the students, but everyone on the ship, because they were all

EXCITED ABOUT THE EXPERIENCE”

- Chai Comrie

His advice to other students considering studying abroad is simple. “DO IT! Make sure you have an international plan to stay safe, always travel in groups, but most of all, just go for it. If the opportunity comes your way, don’t be afraid to take the leap.”

“DO IT!”

- Chai Comrie



For more information about the International Ocean Discovery Program, please visit www.iodp.org.

EDUCATION



Honeybee habitat at Florida A&M University Research and Extension Center

FLORIDA A&M UNIVERSITY; GETTY IMAGES; PROVIDED BY KEVIN POOLE



Strengthening Ties

USDA expands longtime partnership with HBCUs



By Sarah Sekula

T WAS A FEW days after Kevin Poole's 18th birthday in mid-August when he got the news.

An admissions officer from Florida A&M University (FAMU) was on the phone. Poole anxiously pulled his mom close and put the phone on speaker. The admissions officer told him to pack his bags. He'd be moving into a FAMU residence hall the next week. Better yet, his tuition, room and board and books were all covered. "We both were ecstatic," Poole recalls. "It was like a late birthday present."



Kevin Poole, Florida A&M University student

That day drastically changed the course of his life. Fast forward to today, and the scholarship he received from the USDA/1890 National Scholars Program has allowed him to major in biological systems engineering and fully focus on calculus, physics and engineering classes without worrying about money. It's one of the ways that the Department of Agriculture has shown its support of historically Black colleges and universities (HBCUs) over the years.

"I smile thinking about it even now,

CONTINUED »

EDUCATION



2.5M

**HONEYBEE HIVES
EXIST IN THE U.S.,
DOWN FROM
6 MILLION
IN THE 1940s**

SOURCE: USDA



Working with drone bees at Ohio's Central State University

GETTY IMAGES; HONGMEI LI-BYARLAY; PROVIDED BY LAUREN HAWKINS



**CAMPUS
CONNECTION**

There are 19 historically Black universities participating in the 1890 land-grant institutions program:

- ▶ Alabama A&M University
- ▶ Alcorn State University, Mississippi
- ▶ Central State University, Ohio
- ▶ Delaware State University
- ▶ Florida A&M University
- ▶ Fort Valley State University, Georgia
- ▶ Kentucky State University
- ▶ Langston University, Oklahoma
- ▶ Lincoln University, Pennsylvania
- ▶ North Carolina A&T State University
- ▶ Prairie View A&M University, Texas
- ▶ South Carolina State University
- ▶ Southern University and A&M College, Louisiana
- ▶ Tennessee State University
- ▶ Tuskegee University, Alabama
- ▶ University of Arkansas at Pine Bluff
- ▶ University of Maryland Eastern Shore
- ▶ Virginia State University
- ▶ West Virginia State University

USDA

almost three years later," Poole says. "It was one of those life-changing achievements that only comes about as a result of small, consistent efforts over a long period of time."

After Poole graduates in fall 2023, he will work as an engineer for USDA's South Carolina Natural Resources Conservation Service (NRCS) for four years in exchange for the scholarship. Over the past three summers, he participated in a paid internship with NRCS to train for his future position.

"It is an amazing program and a great way to attract young, skilled individuals into the agricultural field while dispelling the stigma of African Americans in agriculture and the stereotype that you must be a farmer if you're in agriculture," he says. "And I have the opportunity to leave college with no student loan debt, one of the biggest financial burdens for many U.S. adults, especially today for Gen Z and millennials."

Since 2020, the Department of Agriculture has named more than 230 students

USDA/1890 National Scholars. The program "is aimed at bolstering educational and career opportunities for students from rural or underserved communities around the country," says Lisa Ramirez, director of

USDA's office of partnerships and public relations. "It helps to create a pipeline of skilled employees for USDA and the U.S. agriculture sector, which is a crucial part of USDA's Next Generation efforts."

Lauren Hawkins, another USDA/1890 National Scholar and FAMU student, fell in love with all things outdoorsy at a young age, participating in science camps, Girl Scouts and anything nature-related.

"Learning the role that nature plays in the growth of flowers, pollination and the

production of food was amazing to me," she says.

As a teen, she attended the USDA AgDiscovery Summer Enrichment program at the University of Maryland Eastern Shore, which immerses students in grades 8-11 in the world of agriculture.



**Lauren Hawkins,
Florida A&M
University
student**

"After this camp, my agriculture interest was piqued," she says. "I learned all the possibilities a career in agriculture could offer me. It was also during this summer program that I was introduced to the USDA/1890 Scholars Program."

She's now a biological and agricultural system engineering senior who has interned two summers with USDA's Natural Resources Conservation Services, where she intends to work upon graduation.

"Searching for employment is a long, gruesome process for most but more specifically a college student," she says. "With this scholarship, I have eliminated the stress of finding internships and a job in my major post-graduation."

HEMP TO HONEYBEES

Beyond direct financial assistance for students, USDA also supports research efforts at 19 HBCUs in the U.S.

Take Craig Schluttenhofer, research assistant professor of natural products at Ohio's Central State University, which participates in the program. His hemp-production studies are partially funded by USDA, and

CONTINUED »

EDUCATION

his undergraduate students are given projects where they focus on designing experiments, collecting data and summarizing results for distribution through peer-reviewed publications, extension programming, fact sheets and presentations.

Hemp is an important crop because it can be used for food, fiber and medicinal products, Schluttenhofer says.

"Few plants are able to provide such a diverse array of valuable products," he says. "The

"I have the opportunity to leave college with no student loan debt, one of the biggest financial burdens for many U.S. adults, especially today for Gen Z and millennials."

— Kevin Poole, USDA/1890 National Scholar, Florida A&M University

grain is a highly nutritious human food with potential applications for animal feeds, and it can provide a domestic source of fiber that has different properties than cotton."

Central State is also engaged in extensive research on honeybee and pollinator health using tools in genetics, genomics and molecular ecology.

"We are very thankful for all the support from USDA on a lot of our bee research," says Hongmei Li-Byarlay, research associate professor of entomology. "Honeybees are the most important managed pollinators in North America. They go to flowers and collect pollen as their protein source and at the same time, they carry pollen from flower to flower which is essential for the plant reproductive system. One-third of human food is pollinated by pollinators."

According to USDA, beekeepers have been losing colonies at a steady rate. There were 6 million honeybee hives in the



ILLUSTRATION BY LISA M. ZILKA/USA TODAY NETWORK AND GETTY IMAGES

nation in the 1940s; today there are only 2.5 million.

Since launching this study, more than 30 students have been trained at Central State's bee research lab. Li-Byarlay says the research is tremendous in

terms of helping the students develop their careers and preparing them for graduate school and medical school.

HUB FOR INNOVATION
In June 2022, USDA invested

\$1.92 million to help establish an Agriculture Business Innovation Center at North Carolina A&T State University. It's designed to serve as a technical assistance hub to enhance agriculture-based business

development opportunities.

"The agricultural business industry is currently facing several challenges, including increasingly high risks and shocks to agribusiness systems and rural communities, a declining number of farms, aging farmers and fewer ... young people engaged in farming," says Manoharan Muthusamy, national program leader for the 1890 programs at USDA's National Institute of Food and Agriculture. "Other challenges include a lack of support for farm/agribusiness innovation; a shortage of transitioning research outcomes to assist farmers and agribusinesses; and (a) dearth of multistate collaborations to facilitate learning, training and information exchange."

The innovation center aims to serve as a stepping stone to address and overcome some of these challenges. More specifically, it will work to enhance agriculture-based business development opportunities, provide technical assistance to food and agricultural producers,

"Few plants are able to provide such a diverse array of valuable products (as hemp)."

— CRAIG SCHLUTTENHOFER, research assistant professor of natural products, Central State University

assist startups in agriculture business, deliver educational support for students interested in careers in agriculture business and provide outreach services and activities to stakeholders.

To continue fostering an environment where scientific innovation can happen, USDA last summer announced the creation of an 1890 task force focused on strengthening collaboration with HBCUs in the food, agriculture and forestry sectors.

FACULTY HIGHLIGHT

CAFS PROFESSOR EXCELLING IN *Groundbreaking* RESEARCH



Islam El-Sharkawy, Ph.D., is an associate professor of Grape Breeding and Fruit Crop Production, and Program Leader for the Genetic and Breeding Program at the Center for Viticulture. Since his brief tenure at FAMU he has been able to not only attain an outstanding record as related to his research productivity (refereed publications, research presentations, new patent submission, and research grantsmanship) but also to excel in student teaching, facilitate new academic courses/programs, and provide exemplary University and clientele service. Notably, he was able to implement a groundbreaking molecular breeding platform for accelerating the production and release of much-needed new superior-quality grape cultivars for the southern viticulture industry.

Some of his latest groundbreaking research achievements include:

- US Patent PP34483-P2 -08-09-/2022: New premium white wine grape 'Blanc du Soleil', US Patent Application 2436.67, PL. The new FAMU grape cultivar has been licensed to one of the top nursery producers for grape clean planting stock in the nation "Double A Vineyards, Inc" in Fredonia NY and it is under 10 Material Transfer

Agreements (MTA) with growers and wine producers from Florida, Texas, Alabama, Louisiana, and Georgia.

- The 1st in the nation and the world Whole Genome Sequence (WGS) of commercial muscadine cultivar 'Noble' (Park et al., 2022). The new knowledge is a revolution in the national/international grape breeding research and practices by accelerating the procedure and reducing the duration, labor, expenses, and land space necessary to produce new disease resistance grape cultivars. The Muscadine genome sequences have been deposited in the National Center for Biotechnology Information (NCBI), and the accession number is PRJNA738474.
- New publicly released *Muscadinia rotundifolia* grape transcriptome data in the GenBank database of the National Center for Biotechnology Information (NCBI) under the accession numbers PRJNA775666 and PRJNA810835.

A Great CAFS KUDOS to Dr. El-Sharkawy for his hard work and many achievements!

FAMU TEAM TRAVELS TO DAKAR



A team from FAMU, led by Harriett A. Paul, director of CAFS Office of International Agriculture Programs (OIAP) and Center for International Agricultural Trade Development Research and Training (CIATDRT), recently traveled to Dakar, Senegal from May 24-31, 2023 as part of a collaborative initiative between FAMU OIAP, Cooperative Extension, Agri-business Program and the Université Cheikh Anta Diop (UCAD) of Dakar Higher Institute of Agriculture and Entrepreneurship (ISAE). The group was awarded a Higher Education University



Harriett Paul, project PI, Helen Worthen, Ph.D., co-PI, and Conchita Newman, project 4-H Leader.

Partnership Grant to strengthen UCAD's capacity to produce youth entrepreneurs in the agriculture sector. Through the initiative, FAMU and UCAD are advancing vocational agriculture training and Extension Education 4-H Youth Outreach training focused on youth development and entrepreneurship.

The grant project, entitled "FAMU-UCAD Higher Education Partnership: Promoting Youth Entrepreneurship in Senegal" was funded through the US Embassy DAKAR, which operates under the US Department of State. The project, funded at \$150,000, is intended to be a two-year higher education program, with a period of performance from September 27, 2021 through December 31, 2023. FAMU has requested and been approved for a six month no cost extension to June 30, 2024.

Paul, who served as project author, is also the Principal Investigator (PI), and leader of the Capstone Program. She traveled to Senegal with Helen Worthen, Ph.D., Co-PI and Extension Agent III, Cooperative

Extension Program at FAMU and Stephan Tubene, Ph.D., Project Instructor for Leadership and Entrepreneurship for the Vocational Ag Certificate Program and Professor of Agriculture Economics at University of Maryland Eastern Shore. During their time in Senegal, the team conducted a site visit to UCAD and met with officials from the Senegalese Ministry of Higher Education office that coordinates 4-H Youth Development nationally. They also met with several other public and non-profit partners. Daniel Solis, Ph.D., Associate Professor and Program Leader for CAFS Agribusiness Program serves as the Leader of the Vocational Agriculture training aspect of the project, but was not a part of the travel team.

The Youth Entrepreneurship program has three main objectives: 1) Develop a Vocational Agriculture Certificate Program in Youth Entrepreneurship in collaboration with UCAD/ISAE faculty, technicians, and graduate students; 2) Provide an Extension education training for UCAD faculty, technicians, graduate and undergraduate students to increase their capacity for developing and delivering Extension educational content for youth; and 3) Collaboratively design the face to face and virtual exchange experiences for UCAD participants who visit FAMU, identifying key FAMU faculty, students, and community partners who will participate, ensuring the representation of youth and women.

A total of 35 students currently participate in the Extension Education training via an electronic platform and have been trained in the history and culture of 4-H with a focus on food, agriculture, and natural resources.

At the end of the Extension training program, five UCAD trainees will be

selected through a competitive process to participate in an internship with five local community public/private organizations. The UCAD interns will provide 4-H Youth Development and Entrepreneurship programming for 50 middle to high school age students. The Vocational Agriculture Online Program started May 15. Thirty UCAD upper level undergraduates and masters' students are enrolled in the program. By the completion of this program, at least seven of the participants will be assisted with the start-up of a small agricultural enterprise. Four UCAD program participants, and UCAD faculty, will be selected for a two-week Capstone Exchange Program to FAMU, organized by the CIATDRT, for an experiential learning hands-on immersion focused on U.S. youth and entrepreneurship development. During the two-week Capstone experience, the UCAD participants will shadow FAMU Extension personnel, FAMU Community partners, and other supporters engaged with youth and other agricultural business clientele.



Photo Credit: Harriett Paul

CAFS FACULTY AND STUDENTS TRAVEL TO *Kenya*

for Summer AGG 4952 Service Learning in International Agriculture Course



International travel to Kenya Group, pictured L to R: A'Llasia Bartee (CAFS Junior), Maia Woodard (graduated BS), Mehboob Sheikh, Ph.D. Professor, Plant Biotech & Project Collaborator, Aaron Francis (CAFS Sophomore), Harriett Paul, Director International Ag, Course Instructor, Project Co-PI and travel leader, Shayla Rawls (CAFS Junior), Satya Dev, Ph.D., Associate Professor & Program Leader Bio Systems Engineering & Project Collaborator, Anamika Sharma, Ph.D., Assistant Professor Entomology & Project Collaborator. Missing from the photo is Romy Charleston (CAFS Senior).

Harriett A. Paul, director, Office of International Agriculture and Center for International Agricultural Trade Development Research and Training is a co-principal investigator in the USDA 1890 Universities Center of Excellence in Global Food Security and Defense (CEGFSD) grant, received from USDA National Institute for Food and Agriculture, funded at \$1.3 Million. Paul is also FAMU's representative on the Center's Governing Board. FAMU's engagement in the CEGFSD is through the East & Southern Africa cluster. The Cluster includes the University of Maryland Eastern Shore (as the Cluster lead), Southern University, Alabama A&M University, and FAMU. The Cluster's project is titled, "Strengthening Learning, Discovery, and Engagement in Global Food Security and Defense in East/Southern Africa

through a Cluster of 1890 Universities." Paul's AGG 4952 Service Learning in International Agriculture course is a key aspect of the project which is focused on the internationalization of the curricula in food, agriculture, and natural resources; and student experiential and service learning international engagement. The course is held during Summer A term, from May 15-June 23, 2023, with International Service Mobility from May 27-June 7, 2023. A total of five (5) CAFS students are registered for the course.

The Office of International Agriculture in CAFS has had a signed MOU since 2020 with Egerton University and has been partnered in several previous grant programs through the USDA 1890 Universities Center of Excellence in Global Food Security Program.

CAFS RESEARCH CENTER HIGHLIGHTS

CENTER FOR VITACULTURE & SMALL FRUIT RESEARCH

Twelve (12) grants (both federal and state) for more than \$3.8 million in 2022-2023. Highlights include:

2023 Academics Productivity

- Facilitate the 1st in Florida and among the 1890 university system academic concentration in ‘Grape and Wine Sciences’ under B.S. degree in Agriculture Sciences.
- Facilitate and teach a total of 8 academic courses at graduate and undergraduate level.

Graduate Student, Eniola Olaoye

- Award Winner and Recipient of Travel Scholarship from Urban Connoisseurs to attend the 3rd Annual Black Winemakers Summit in Seattle, WA, March 25-27
- Award Winner and Recipient of the FL Grape Wine Growers Association (FWGGA) "Golden Ticket Award" to attend and present her research at the Annual conference of the FWGGA , January 13-15

Undergraduate Student, Camden Kruis

- Award Winner and Recipient of the FL Grape Wine Growers Association (FWGGA) "Golden Ticket Award" to attend and present her research at the Annual conference of the FWGGA , January 13-15

Undergraduate Student, Eryse White

- Award Winner and Recipient: Scholarship for Summer Research at the University of California Davis- Plant Agricultural Biology Graduate Admissions Pathways Program

CAFS RESEARCH CENTER HIGHLIGHTS

BROOKSVILLE AGRICULTURAL AND ENVIRONMENTAL RESEARCH STATION (BAERS)

Three (3) grants funded, totaling over \$2.5 million in 2021-2023. Highlights include:

- **\$704,200 funded project.** Equity Conservation in Florida, Georgia and Alabama (EC-FLAG): USDA-NRCS. Grant funding includes (but is not limited to): utilizing USDA-NRCS best management practices for a comprehensive watershed management for enhancing and reducing problems associated with wildlife management and conservation planning at BAERS. *PI: Fred Gainous, Ph.D.; Co-PI: Oghenekome U. Onokpise, Ph.D.*
- **\$1.1 million funded project.** Conservation Collaboration for Selected States Project: Florida, South Georgia and South Alabama (CCSSP-FGA): Grant funding to (but does not limit): identifying socially disadvantaged and limited resource farmers (SDLRF) in the Florida, South Georgia and South Alabama region who need intervention and can be helped by exposure to Natural Resource Conservation Service (NRCS) focus areas: improving property soil health, combating the



issues related to endangered species, reducing water quality and quantity issues and enhancing conservation planning by utilizing climate smart agriculture practices and principles. *PI: Dr. Fred Gainous. Co-PIs: Oghenekome Onokpise, Ph.D. AND Nathan Bailey, Ph.D.*

- **\$911,750 funded project.** Brooksville Training Program: Title III Grant to develop interdisciplinary learning modules in agricultural sciences, develop undergrad research in water, plant and animal science, increase the number of faculty able to infuse interdisciplinary modules in course curriculum, conduct research in plant and animal science. *PI: Fred Gainous, Ph.D.; Co-PI: Oghenekome U. Onokpise, Ph.D.*

ADDITIONAL (BAERS) HIGHLIGHTS

- **1.6 million non-research funded project** for infrastructure development carryover from 2021-2022. (State of Florida). *PI: Fred Gainous, Ph.D.*

CAFS

RESEARCH CENTER HIGHLIGHTS

OFFICE OF INTERNATIONAL AGRICULTURE PROGRAMS (OIAP)

Two (2) grants totaling \$490,000 in 2023, including:

- \$400,000 funded project. USAID Innovation Lab for Horticulture Trellis Program.** The Trellis Program is a graduate International Internship Program. Graduate students will be recruited from the 19, 1890 Universities to participate in research opportunities in Central America – Honduras; South Asia–Nepal; West Africa–Ghana; and East Africa–Kenya. Selected students will receive a Trellis Research Stipend from \$3,500 – \$5,000, depending on the region of assignment. They will also have a two-week in-country research experience working in-person with the research project local participants. This grant is a sub-grant from the University of CA-Davis through USAID funding. Funded is from 2023–2027.
- \$90,000 funded project. Strengthening the Capacity of the Partner Institutions to Address Global Food Security in East and Southern Africa: The Case of the Democratic Republic of the Congo and Kenya.** This is a subgrant under the USDA 1890 Universities Center of Excellence for Global Food Security and Defense Program, led by the University of Maryland Eastern Shore. The work under this new 12-month \$300,000 Cluster Partnership award builds on the global food security and defense teaching, research, and engagement work over the past three years in Eastern and Southern Africa. The Cluster partners include: UMES, FAMU, Southern University, Alabama A&M University, and University of Arkansas Pine Bluff. FAMU's subaward is for the period of performance April 1, 2023 to April 30, 2024.



AWARDS & RECOGNITION

Center of Biological Control

2022 Excellence in Integrated Pest Management Award from the Southeastern Branch of the Entomological Society of America.

Lambert Kanga, Ph.D., was selected as the Chair of the Panel Reviewer of National Programs for the USDA National Institute of Food and Agriculture in Washington, DC

First Discovery Worldwide of Insecticide Resistance in the Small Hive Beetle

This break-through on a major and destructive pest of honeybees will increase honey bee health and be very useful to the beekeeping industry as bee health is critical for the success of pollination-based agriculture, which produces about one-third of our diet in the United States.

Tallahassee Democrat

Three separate articles were published By Drs. Lambert Kanga, Muhammad Haseeb and Ben Hotel in the Newspaper "Tallahassee Democrat" entitled (a) "Simple Ways to Conserve Beneficial Insects for Healthy Gardens", (b) "The brown marmorated stink bug is a new Florida pest" and (c) "Crazy ant in Florida."

Anamika Sharma, Ph.D.

- Nominated and elected for Full Membership in 'Sigma Xi', the Scientific Research Honor Society on August 26, 2022.
- Interviewed to express an opinion on a publication on Pheromones by New Scientist Magazine, August 31, 2022.

STUDENT ACHIEVEMENT AND RECOGNITION HIGHLIGHTS

Center of Biological Control

Master of Science Graduation

Almado Morain (currently a Ph.D., student at Florida A&M University)

Tashani Brown (currently a Ph.D., student at the University Georgia)

Jasmine Moffet

Breonna Davis, (currently a Ph.D., student at the University of Florida)

Chinemenma Okoroji

Successful Doctoral Qualifying Exams

Worrel Diedrick

Alexander Orfinger

Awards and Recognition

Kristen Joy Adkins: 1st place Award Winner for Elevator Pitch Competition at Minority in Agriculture, Natural Resources and Related Sciences national conference.

Alexander Orfinger:

- 1st place Award Winner at the Annual Meeting of the Florida Association of Aquatic Biologists, 2022.

- Awarded Best Graduate Student Oral Presentation at 2022 HBCU Agricultural Student Conference (Virtual):
“Improved Larval Taxonomy of Nearctic NetSpinning Caddisflies (Trichoptera: Polycentropodidae) to Ultimately Enhance Resolution of Freshwater Bioassessment”
- **Sharise James** was a 1st place Award Winner for graduate poster competition at the Minority in Agriculture, Natural Resources and Related Sciences national conference.

First Discovery of Egg Parasitoid of the Kudzu Bug in Florida (North America)

Graduate student Worrel Diedrick was

the first to discover of 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 which affects essential food crops such as soybean and legumes. The discovery of this new biocontrol tool can avoid the need for the use of pesticides in soybean production (the second most planted field crop in the US) which has an estimated annual revenue of \$39 billion.

Center for Viticulture

Eniola Olaoye (Graduate student)

- Award Winner and Recipient of Travel Scholarship from Urban Connoisseurs (www.urbanconnoisseurs.com) to attend the 3rd Annual Black Winemakers Summit in California. March 25-27, 2023.
- Award Winner and Recipient of the FL Grape Wine Growers Association (FWGGA) "Golden Ticket Award" to attend and present her research at the Annual conference of the FWGGA, January 13-15, 2023

Camden Kruis (Undergraduate student)

- Award Winner and Recipient of the FL Grape Wine Growers Association (FWGGA) "Golden Ticket Award" to attend and present her research at the Annual conference of the FWGGA, January 13-15, 2023



FAMU-CAFS award winners at the 100-year anniversary of the Florida Wine and Grape Growers Association: Camden Kruis, Frank Humphries, Eniola Olaoy, Dr. Jingqui Chen, Jiovan Cambell

Office of International Agricultural Programs (OIAP)

AWARDS AND RECOGNITIONS**UF-FAMU USDA Food Safety Outreach Program Participants****Marechal Walker**

- Recipient of the UF-FAMU USDA Food Safety Outreach Program Participant Award, 2022, \$1,250

Almando Kessy Morain

- Recipient of the UF-FAMU USDA Food Safety Outreach Program Participant Award, Fall 2022, \$1,250

Maxo Etienne

- Recipient of the UF-FAMU USDA Food Safety Outreach Program Participant Award, Fall 2022, \$1,250

Rachel Fernandez

- Recipient of the UF-FAMU USDA Food Safety Outreach Program Participant Award, Fall 2022, \$1,250

Kristen Adkins

- Recipient of the UF-FAMU USDA Food Safety Outreach Program Participant Award, Fall 2022, \$750
- Recipient of the Produce Safety Alliance Grower Training Program Certificate Spring 2023

Kasey Elder

- Recipient of the UF-FAMU USDA Food Safety Outreach Program Participant Award, Fall 2022, \$750
- Recipient of the Produce Safety Alliance Grower Training Program Certificate Spring 2023

Jamesia Henderson

- Recipient of the UF-FAMU USDA Food Safety Outreach Program Participant Award, Fall 2022, \$750
- Recipient of the Produce Safety Alliance Grower Training Program Certificate Spring 2023

Bethany Noel

- Recipient of the UF-FAMU USDA Food Safety Outreach Program Participant Award, Fall 2022, \$750
- Recipient of the Produce Safety Alliance Grower Training Program Certificate Spring 2023



COOPERATIVE EXTENSION

Florida A&M University 4-H Tech Changemaker youth participants.

4-H Tech Changemakers: Empowering Change Through Digital Literacy and Accessibility



4-H Tech Changemaker, Stephen Hayes on the Tamron Hall Show

The Florida A&M University (FAMU) 4-H Tech Changemakers program empowers youth to close the digital divide by providing them with unique opportunities to lead digital skills training to adults in their communities. Over 24 million people in the U.S. lack high-speed internet access, while many others do not have the skills needed to take full advantage of online resources. These and other deficiencies contribute to the growing opportunity gaps plaguing rural areas and communities of color, specifically in the areas of education, employment, healthcare, social fulfillment, and entrepreneurship.

Through the program, teens build leadership skills, learn to use new technologies, and build their resumes, all while giving back to the community. Youth participant Stephen Hayes believes the program provides an opportunity for

digitally inclined teens to help people overcome barriers and become active participants in a digital society. “As teens, we’re often overlooked because older generations don’t believe we have much to offer since most of us are engrossed in technology all the time. But the truth is, we’re growing up in the digital age, so we’re the perfect people to teach adults the skills they need to be successful with technology and other digital practices,” said Hayes. The high school junior recently appeared on the Tamron Hall show, where he discussed his role as a local tech changemaker and national spokesman for the program. During the show, Hall presented the 4-H Tech Changemakers program with a **\$16,000 check**, awarded by the National 4-H Council, to be used to further efforts of making a difference in the community.

RESEARCH AND EXTENSION CENTER

(Noteworthy Student Acknowledgement)

Assata Johnson - First prize recipient of the FAMU Undergraduate Research Symposium held Friday April 14, 2023. Assata is a Freshman Cardiopulmonary Science major (Allied Health) under the mentorship of Dr. Jillian Pope (Biology) and in collaboration with Dr. Jesse Edwards (Chemistry) and Dr. Alejandro Bolques (FAMU Research and Extension Center). Her poster title was Aquaponics: Plant Area Growth of Lettuce in a Small Demonstration System.



Assata Johnson, first place winner of Undergraduate Research Symposium

ANIMAL SCIENCE,

Pre-Vet Student Attends Cannabis Clinical Outcomes Research Conference

Dr. Carmen Lyttle-N'guessan and CAFS student Victoria Adigun presented a scientific research poster at the Cannabis Clinical Outcomes Research Conference in Orlando.



CAFS undergraduate student, Victoria Adigun recently attended the Cannabis Clinical Outcomes Research Conference (CCORC) held on May 18-19, 2023 in Orlando, Florida. Hosted by the Consortium for Medical Marijuana Clinical Outcomes Research (the Consortium), the conference aims to advance participant understanding of the clinical effects of medical marijuana by sharing the latest research findings and promoting the dissemination of scientific evidence on the effects of marijuana, drug-drug interactions, and safety. During the two day event, researchers, physicians,

and medical marijuana industry leaders promote scientific exchange through the creative use of virtual spaces including an exhibit hall, keynote speakers, panel discussions, and poster sessions.

Carmen Lyttle-N'guessan, Ph.D., Research Associate and Program Manager for Cooperative Extension, attended the conference with Adigun, who is an Animal Science, Pre-Veterinary major, and collaboratively presented on a scientific research poster entitled "Assessment of Farmers' Perspectives of Medical Marijuana as an Alternative Treatment for Chronic Pain: A Survey."



CONGRATS

to all our graduates

FALL 2022 MASTER GRADUATES

Rachel Fernandez – MS Agriculture Science/Animal Science
Thesis Title: *Replacement Heifer Development in a Limited-Resource Beef Cow-Calf System*

Roderick Duckworth – MS Agriculture Science
(Non-Thesis)

Saheed Bolarinwa – MS Soil and Water
Thesis Title: *Effect of Soil Microalgae (Chlorella vulgaris, Chlorella minutissima, and Scenedesmus acutus) Amendment on Nitrogen and Phosphorus Dynamics of Florida Soils to Mitigate Harmful Algal Blooms*

FALL 2022 GRADUATES

- | | |
|-----------------------------------|--------------------------------|
| Jaylin Jacobs | Food Science – Sci & Tech opt |
| Zaria K. Williams | Animal Science – Pre/Vet opt |
| Kortni A. Harrell | Veterinary Technology |
| Keinah K. Brathwaite | Animal Science – Industry opt |
| Dylan Alexander Lenczewski-Jowers | Food Science – Sci & Tech opt |
| Brianna A Lambert | Animal Science – Pre/Vet opt |
| Khya D. Nelson | Agri-Business |
| Amaris R. Turner | Food Science – Bus & Ind opt |
| Rae'gan G. Burton | BioSys Engr-Bioproc &Food Eng. |
| Katie B. Light | BioSys Engr-Bioproc &Food Eng. |
| Hanna L. Triplett | Agri-Business |
| Alexis L. Alcime | Animal Science – Pre/Vet opt |
| Christen D. Bryant | Agri-Business |
| Justin Anderson | Agri-Business |
| Amaury Marie Cecil Toure | Agri-Business |

SPRING 2023 GRADUATES

BACHELOR OF SCIENCE IN AGRI-BUSINESS

Brooke Taylor Eliasson***

Staci Nicole Gamble**

Kristyn Cierra Mobley*

Isa Salaam***

BACHELOR OF SCIENCE IN AGRICULTURAL SCIENCE

Andrew Giles

Alacia E. Murphy

Mya N. Wallace

BACHELOR OF SCIENCE IN AGRICULTURAL SCIENCE CONCENTRATION IN ANIMAL SCIENCE-INDUSTRY OPT

Kayla Amari Davis

BACHELOR OF SCIENCE IN AGRICULTURAL SCIENCE CONCENTRATION IN ANIMAL SCIENCE-PRE-VET OPT

Ashanti Baptiste**

Alyssa Nicole Brown

Ahja Divine Butler**

Africa Imperial Jardine

Manuel Martinez

Kiara Shaliyah Mccalister**

Aluria Denise Williams*

BACHELOR OF SCIENCE IN IN FOOD SCIENCE-BUS & IND OPT

Courtney Josephine-Olivia Campbell*

BACHELOR OF SCIENCE IN FOOD SCIENCE-SCI & TECH OPT

Jiliah Cierra Henderson**

Zebadiah Hudson**

BACHELOR OF SCIENCE IN AGRICULTURAL SCIENCE CONCENTRATION IN VETERINARY TECHNOLOGY

Nakia Shantel Long

Miranda Jade Persinger**

Mulleak D. Pitts

BACHELOR OF SCIENCE IN BIOLOGICAL & AGRICULTURAL SYSTEMS ENGINEERING

Shomar Kerwyn Okera Bullen**

Jayden Burnett*

Lauren Annette Hawkins**

Melvin Angelo Jordan

Brian K. Washington***

SCHOOL OF GRADUATE STUDIES AND RESEARCH

COLLEGE OF AGRICULTURE AND FOOD SCIENCES

MASTER OF SCIENCE IN AGRICULTURAL SCIENCE, NON THESIS

Larisner Simeon

B.S., Universite Caraibe, Haiti, 2018
Advisor: Dr. Muhammad Haseeb

spp in BL21(DE3) E. coli

Thesis Chair Violeta Tsoleva, Ph.D.

MASTER OF SCIENCE IN AGRICULTURAL SCIENCE, THESIS

Victor Douglas Cupp

B.S., Florida A&M University, 2020
Thesis Title: *“In silico Identification, characterization, and in vitro expression of phage endolysins from Streptomyces*

MASTER OF SCIENCE IN AGRICULTURAL SCIENCE CONCENTRATION IN ENTOMOLOGY

Sharise Danielle James

B.S., Florida A&M University, 2019
Thesis Title: *“Detection and Monitoring of Brown Marmorated Stink Bug (Hemiptera: Pentatomiade) in the Florida Panhandle”*
Thesis Chair: Dr. Muhammad Haseeb

NAVAL ROTC UNIT FLORIDA A&M UNIVERSITY (NROTC FAMU) GRADUATES



BACHELOR OF SCIENCE IN CRIMINAL JUSTICE
MIDN 1/C, Peyton Gustafson



BACHELOR OF SCIENCE IN POLITICAL SCIENCE
MIDN 1/C, Nathan Bright



BACHELOR OF SCIENCE IN CONSTRUCTION ENGINEERING
MIDN 1/C, Zachary Rachfal

PUBLICATIONS

Center of Biological Control

Diedrick, W.A., L. H. B. Kanga, M. Haseeb, M. Srivastava, and J. C. Legaspi. 2022. Population dynamics and parasitism of the kudzu bug, *Megacopta cribraria*, by egg parasitoid, *Paratelenomus saccharalis*, in southeastern USA. *Journal/Agriculture*. doi. org/10.3390/agriculture 13010013.

Francis, N., L.H.B. Kanga, C.M. Mannion, M. Haseeb, A. Ananga and J.C. Legaspi. 2022. First Report on Voracity and Feeding Preference of Predatory Beetle, *Thalassa montezumae* (Coleoptera: Coccinellidae) on Croton Scale, *Phalacrocooccus howertoni* (Hemiptera: Coccidae). *Agriculture*, 12, 990. <https://doi.org/10.3390/agriculture12070990>.

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Perier, J., M. Haseeb, L.H.B. Kanga, R.L. Meagher and J.C. Legaspi. 2022. Intraguild interactions of three biological control agents of the fall armyworm *Spodoptera frugiperda* (JE Smith) in Florida. *Insects* 13(9), 815; <https://doi.org/10.3390/insects13090815>.

Sharma A and Raman A. 2022. Gall-inducing Psylloidea (Insecta: Hemiptera)—plant interactions. *Journal of Plant Interactions*. 17, 580-594.

Wu, P. Y. Ge, J.He, M. Haseeb and R. Zhang. 2022. Positive interactions between *Aceria pallida* and *Bactericera gobica* on gogi berry plants. *Insects*, 13, 577. <https://www.mdpi.com/2075-4450/13/7/577>.

Wu, P., M.L. Head, C. Liu, M. Haseeb, R. Zhang. 2022. The high invasion success of fall armyworm is related to life-history strategies across a range of stressful temperatures. *Pest Manag Sci.* (wileyonlinelibrary.com) DOI 10.1002/ps.6867.

Wu, P., Y.Ge, J.He, M. Haseeb and R. Zhang. 2022. Positive interaction between *Aceria pallida* and *Bactericera gobica* on Goji berry plants. *Insects* 13, 577. <https://doi.org/10.3390/insects13070577>.

Zimba, K.J., Q.D. Reed, M. Haseeb, R.L. Meagher and J.C. Legaspi. 2022. Potential of silicon to improve biological control of fall armyworm, *Spodoptera frugiperda* on maize. *Agriculture* 2022, 12, 1432. <https://doi.org/10.3390/agriculture12091432>.

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Center for Water Resources

Hsieh Y.P., D. Nemours, and G. Bugna, 2022. A field-scale soil erosion study: An example from a North Florida farm. *Catena* **218**, 106551.

Jain, Amita, Taylor, Robert. 2022. Determination of cation exchange capacity of calcareous soils: comparison of summation method and direct method. *Communications in soil science and plant analysis*.

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Kirit N. Shelat, **Odemari Mbuya**, Nisha Shah. 2022. *Energy Security in India: Aatmnirbhar Bharat*. Bhagwati Graphics City Mill Compound, Kankaria Road, Ahmedabad – 380 022.

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Osei G.K., Abazinge M., **Ngatia L.W.**, Chauhan A., Bolques A., Jagoe C., Pathak A. 2022. Characterization of Microbial Communities and Naturally Occurring Radionuclides in Soilless Growth Media Amended with Different Concentrations of Biochar. *Applied Microbiology* 2(3):662-679.

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Center for Water Resources (continued)

Akinbi G.O., Ngatia, L.W., Grace III J.M., Fu R., Taylor R.W., Abichou T., Ibeanusi V., Dubex J., Chauhan A., and Pathek A. 2022. Influence of Vegetation Types on carbon dynamics, microbial response and methanogenesis processes in Apalachicola National Forest. *Heliyon Journal*. In press.

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Research and Extension Center

DeLong, A.N., Swisher, M.E., Chase, C., Liburd, O.E., Zhao, X., Gao, Z., Bolques, A. and Gu, S. *Stakeholder-Driven Adaptive Research (SDAR): Better Research Products, Renewable Agriculture and Food Systems*, RAFS-D-21-00127R2.

Center for Viticulture Students Publications, 2022

Graduate Students:

Pranav Gajjar, Ph.D., student

Jiovan Cmbell, M.S., student

- Ismail A., Darwish A.G., Park M., Gajjar P., Tsoлова V., Soliman K.F.A., El-Sharkawy I. (2022) Transcriptome profiling during muscadine berry development reveals the dynamic of polyphenols metabolism. *Frontiers in Plant Science* 12: 818071.
- Park M., Vera D., Kambiranda D., Gajjar P., Cadle-Davidson L, Tsoлова V., El-Sharkawy I. (2022) Chromosome-level genome sequence assembly and genome-wide association study of *Muscadinia rotundifolia* reveal the genetics of 12 berry-related traits. *Horticulture Research* 9: uhab011.
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