THE HARVEY & IRMA POTENTIAL EFFECTS ON FOOD & WATER

GLOBAL
- CHINA COLLABORATIONS
- KEEPING INVASIVE SPECIES IN CHECK

OUTREACH
- FAMU FARM FEST
- CONNECTS WITH COMMUNITIES

TECHNOLOGY
- BIOSENSORS
- PORTABLE VIRUS AND BACTERIA DIAGNOSTIC PRODUCTS IMPROVE

NATURE
- HURRICANE IRMA
- THE BEAST OF HURRICANES
Welcome to the Florida A&M University College of Agriculture and Food Sciences. Whether you have been a part of the FAMU community for decades, one year, one semester, or you are just joining us, welcome to the start of the new semester and the 2017-2018 academic school year. With parents dropping off a new cohort of students, faculty and returning students coming back to campus, hopefully with restorative and renewed enthusiasm and vigor, makes the beginning of a new academic year always feel like a new start.

Each semester and each year I still get excited, welcoming our students and feeling the energy, enthusiasm and determination they bring with them, and the intellectual and personal growth they will experience at our institution.

As I embark into my sixth year as dean, I am motivated and excited about new life-changing discoveries that will be made and new connections that we will make locally, nationally and internationally.

Great things are happening in the College of Agriculture and Food Sciences (CAFS). Over the last year as a college, we have successfully added to our curricula a Bachelor of Science degree in Food Science, a minor in Global Agriculture; an international course (Service Learning International Agriculture); increased student recruitment, retention and graduation rates and have welcomed two new faculty and are in the process of hiring another. Our reach is global, we have established a new international recruitment program with the Université de Caraïbe in Haiti; farmer-2-farmer training programs in the Dominican Republic, Ghana, India, and Haiti; and strengthened collaborations and partnership with the Chinese Academy of Sciences to identify, monitor, and manage invasive species that pose economic and environmental risks.

Our students, faculty and staff continue to earn well-deserved awards, and have been recognized by several organizations as well as by the University community. Our students were award winners at several professional conferences, copped coveted internship spots at private and government agencies, and some of our recent graduates have already secured gainful and lucrative employment. CAFS’ faculty continues to pursue groundbreaking research; scholarly publications and grantsmanship such as the partnership with the FAMU-FSU College of Engineering, College of Science and Technology, and the College of Pharmacy and Pharmaceutical Sciences, which yielded a $5M grant award and another in collaboration with Purdue University for $488,000, both funded by the National Science Foundation (NSF).

I look forward to a rewarding semester. As we seek to absorb the opportunities and tackle the challenges, I am confident that together we will continue to be dedicated in making the kind of investments that will strengthen our community; create and foster an environment for our students, faculty and staff, to pursue their dreams and goals and position CAFS to be a premier 21st century world-class land-grant college.

Here’s to a wonderful year ahead.

Robert Taylor
Dean

Robert W. Taylor, Ph.D.
China Collab

Keeping Invasive Species in Check

The goal of the partnership is to identify, monitor and manage invasive species and reduce economical and environmental risks.

Farm Fest

Connects with Communities Near and Far

“What you see here today is an example of what extension is all about at FAMU,” Robinson said. “People are coming here to learn from us about how to do things better when it comes to agriculture.”

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The free movement of goods, produce and other merchandise from one country to another always poses the potential threat of invasive and harmful species and lead to trade implications. Trade between China and the United States occurs on a large scale, and therefore provide potential links for the transport of pest and disease organisms across continents. Study invasive species and how they might affect global agriculture is at the forefront of researchers at FAMU CAFS - Center for Biological Control (CBC) and the Chinese Academy of Sciences. So much so that both institutions have forged a partnership since 2013, through a Memorandum of Understanding (MoU) to train graduate students and conduct research on potential invasive species.

The specific goal of the partnership, which is coming to an end, is to properly identify, monitor and manage invasive species and reduce economical and environmental risks.
associated with serious invasive species.

Robert W. Taylor, Ph.D., dean of the College of Agriculture and Food Sciences and Muhammad Haseeb, Ph.D., assistant professor in the CAFS-CBC at the invitation of the Institute of Zoology, Chinese Academy of Sciences (IOZ-CAS) traveled to Beijing, China June 2017 to present on and observe ongoing research and academic progress on the collaborative project entitled “Potential Invasive Weevil Species of the World,” but more specifically to discuss the MoU, which is set to end December 2018.

Qi Zhang, Ph.D., director of IOZ-CAS and Runzhi Zhang, Ph.D., director of the Key Laboratory of Zoology Systematics and Evolution, and professor of entomology who initiated the trip of Taylor and Haseeb, was very excited about having them tour their facilities and more importantly discuss extending the partnership by renewal of the MoU for another five years. Taylor and Zhang also discussed the possibility of enhancing the current MoU, which would help to recruit more faculty and students that will be able to carry out critical research needed in native ecologies of serious pests. During the past four years, four students (two masters and two doctoral) collectively from both institutions have participated in the exchange training, two of which are currently in CAFS from China.

Haseeb, who spearheads the CAFS component of the MoU and coordinates the “Potential Invasive Weevil Species of the World” research project, has been working on 140 economically important weevil species in North America. He along with Zhang organized a symposium during the 25th International Congress of Entomology (ICE), which was held in Orlando, Florida, September 2016. The ICE is held every four years and attracts entomologists from all over the world.
CONNECTS WITH COMMUNITIES NEAR AND FAR
Organizers couldn’t have come up with a more appropriate theme for this year’s FAMU Farm Fest. They billed it “Connecting Farm to Community.” Seemingly, though, the community wasn’t just limited to Tallahassee and surrounding areas.

Daphnee Lisa had an experience at the farm fest where FAMU runs its Cooperative Extension Program in Quincy, Florida that she drove four hours to attend. Being at the FAMU Farm Fest was just that important to Daphnee and her two friends, both FAUM alums, to take the more than 200-mile journey. They drove from Mableton, Georgia just to attend the annual event that drew hundreds this year.

“I like the feeling of connecting with nature and the feeling of picking my own food,” Lisa said. “It makes me happy.” A native of St. Martin in the Caribbean, she said being on the farm brought back memories of a common lifestyle in her country. “I’m from an island and this is what we do,” strolling through rows of bell peppers and strawberries. “We grow our own fruits and vegetables (and) I like doing stuff like that.”

Many of the visitors weren’t as fortunate as Lisa to have grown up with farming. That’s one reason that Farm Fest is important, said FAMU interim president Larry Robinson. “What you see here today is an example of what extension is all about at FAMU,” Robinson said. “People are coming here to learn from us about how to do things better when it comes to agriculture.”

Robinson acknowledged that this generation has missed what those like Lisa knows about growing up on a farm or event producing their food in the backyard.

Take for example Jayland John, a seventh-grader who was one of 21 boys brought to the event by the 100 Black Men Tallahassee Chapter. He said he had no idea where milk came from until he saw
Interim President, Larry Robinson, Ph.D., talking about the importance of agriculture and the significance of Farm Fest to the community.

Interim President, Larry Robinson, Ph.D., his daughter Nicole, and wife Sharon, supporting the annual Farm Fest.

a balloon simulation of how a cow produces milk.

The boys’ trip was of a life skill enrichment that the 100 Black Men have them participate in twice each month, said Col. Ronald Joe, who supervised the boys.

Robinson praised the organization’s initiative to bring the boys to the Farm Fest. “It’s important for those young people; not only to connect with knowing where milk comes from, but also to understand the sophistication with regards to the science and technology associated with today’s agriculture,” he said. “There is a lot to this agricultural arena that’s both fundamental and at the cutting edge.”

Several of the visitors, on the 232-acre farm, got a taste of everything they wanted to know about growing their own food. They even had the opportunity to participate in informative conversations with workers on the farm. An entertainment section was cordoned off for children to play and adults had a choice of vendors offering roasted corn and drinks.

Coordinator Renysha Harris didn’t skip a beat, trying to answer questions of visitors while handling ongoing logistics. “What unfolded on the farm in Quincy took about three months of planning,” Harris said. “It’s a whole lot of energy. It gets bigger and bigger each year,” she said. “We come up with ideas and decide what we want to showcase to the community; how we are going to make it interactive, fun and educational.”

There was plenty to learn. Visitors had a choice of touring the farm in a trailer or walking through the many sections, where they were allowed to pick from the fruits, vegetables and herbs.

Alex Bolques, assistant director of the FAMU Extension and Research Center, was one of the people offering lessons on some of the science involved in farming today. The method of growing plants in a water-based, nutrient-rich solution fascinated most of his audience.

Using hydroponics instead of soil, allows farmers to grow many different plants in a controlled environment. Tropical plants grow better in a hydroponic setting, Bolques said.

It has been discovered

Interim President, Larry Robinson, Ph.D., talking about the importance of agriculture and the significance of Farm Fest to the community.
that the hydroponics method of growing has several upsides; most importantly it generally yields (about 30 percent) larger than usual plants. Hydroponic growing also increases up to 25 percent of the growing speed of a plant.

Food like pineapples and avocados are among the plants that struggle to grow in northern temperature without being in a controlled environment. “You cannot make tropical plants grow in a northern environment unless you provide some protection for it,” he said. “You will be able to get fruit from it if the environmental conditions are not suited for it.”

Goliheh Davis, a regular at the Farm Fest, said he was motivated to start growing some of his food after his first visit a few years ago. He said he gets a takeaway of something new each year. “It’s good to sit down at some of the seminars to learn about hydroponics,” he said. “Before I came here, I knew what hydroponics was but I didn’t realize that there were many different types.”
Each summer, the College of Agriculture and Food Sciences offers opportunities to elementary, middle and high school students to participate in various summer programs. The camps cover a broad range of sub-disciplines within the college and provide a chance for the students to gain valuable knowledge and skills, discover hidden talents, explore future careers and experience college life. Each camp is filled with multimodal-learning activities with an interest to keep them engaged, interactive and exposed through theoretical and hands-on experiences. Students come from all across the country to experience what it is like to be a Rattler. The five programs offered this year were: Food Science Enrichment Program, Entomology Insect Science Summer Camp, Ag Discovery, Forestry and Conservation Education Summer Program, and Ag-Tech Century 21.

"Touring the grape vineyards and learning about the health benefits of grapes and that it might be able to cure cancer, I found it to be very interesting" said Arianna Jones, student at Elizabeth Cobb Middle School. "I am interested in food science and chose to attend this camp so that I could learn more about food science and healthy eating," said another student. These are just two of the ten students who were accepted to participate in this summer’s week-long CAFS’ Food Science Summer Program, conducted by the College of Agriculture and Food Sciences. The camp, which is tailored specifically for middle school students is so designed to give students a better understanding and appreciation of food science through experimental-learning activities that are linked to the Sunshine State Standards.

Although the camp was geared mostly towards exploratory and experiment-based projects, we ensured that students had an opportunity to engage in other diverse and fun-filled activities," said Camp Coordinator Conchita Newman. "Whether it was learning about food product development, processing, packaging or marketing, the goal was to get students interested and excited about the diverse range of food science and the industry."

Faculty in the food science department assisted with several lab experiments. Keawin Sarjeant, Ph.D., and Heidi Copelanad lead experiments where students enumerated bacteria from a plate count method and compared the bacterial count before and after proper hand-washing. This was an eye-opening exercise for the students. They also thought about food safety, food contamination and the importance of cooking food at the correct temperature. DNA extraction and its use to improve various fruit and crop cultivars was another exercise the students were exposed to by Anthony Ananga, Ph.D., faculty in the Center for Viticulture and Small Fruit Research. Jenelle Robinson, Ph.D., food science faculty, covered the benefits of food science to nutrition with specific emphasis on nutrition labels. The students learned how to read food labels and understand the terms and nutrient claims on food products. Newman
and Neil James, Ph.D. associate dean for Academic Programs and Food Science professor, also lead other exciting projects such as the determination of the starch content in certain foods, assessing the appearance and taste of cookies made without gluten, the science behind making butter and sensory science. Linda Sapp, CAFS extension agent rounded off the week’s activities talking about herbs, how to identify herbs using their distinctive aroma, their culinary and medicinal uses. The students were also treated with Linda’s signature mint lemonade.

It was not all classroom and lab activities, the students were given the opportunity to visit and see the inner workings of a food processing plant—Flowers Bakery in Thomasville, Georgia. They were also able to understand the design and functioning of a grocery store—Publix; and explore aquatic life at the Apalachicola National Estuarine Research Reserve (ANERR) where they learned about food safety as it relates to ocean cuisines such as oysters, shrimp and fish.

Since its inception five years ago, the Food Science camp has educated 56 middle school students, some of whom were hearing about food science for the first time.

“I like this summer camp,” said Osceola Middle School student Zylan Barnett. “The other summer camps that I attended were also good, however, I enjoyed this one more because I learned about food science, which I did not know about before.” “One of the most fascinating things was learning about temperature and how it affects bacteria. Also I knew our hands had bacteria, but I did not know it had that much and that it is important to wash hands properly before preparing food and eating.” Although he has a way to go before he goes to college, Zylan already knows he wants to attend FAMU and is considering becoming a pediatrician.

Aurelia Reid who attends Pine Grove Middle School in Valdosta, Georgia, came to visit her aunt, specifically, so that she could attend the summer camp. When asked why she chose this camp she said “I chose this camp because I am interested in food science and thought it would be an interesting camp to attend.” “I learned that making a product is actually harder than it looks, you have to ensure that there is consistency in the product and that the packaging is right and that it takes a lot of team work to get one product done.”

“One of things that amazed me was our visit to Flowers Bakery,” said Taylor Newman, a student from Cobb Middle School. “I did not know that so many people worked in a bakery, it is not just a couple of machines doing the work, but lots of people monitoring the machines, packing the bags and doing other things.”

A 10-Year Review of the Food Science Summer Scholars Program: A model for research training and recruiting undergraduate students into graduate programs and careers in food science (Roberts, Robbins, McLandsborough, and Wiedmann, 2010), reveals that the number of qualified students graduating from food science programs is not sufficient to meet the demand in the food industry, government agencies and even in academia. The enrollment in food science both in the U.S. and internationally are declining. FAMU-CAFS is aware of this problem and uses this and other program specific camps to expose, engage, educate and inspire students at an early age about food science, the industry and the diverse career path one might take.

If you or someone you know is interested in participating in the program next year, contact Conchita Newman at conchita.newman@famu.edu or by telephone at 850-599-8110.
Children ages 8 -11 years old experienced “bugs are fun” while participating in the second hosting of the College of Agriculture and Food Sciences entomology summer camp. A total of 23 students from elementary schools across the Tallahassee area participated in a week-long camp, from June 12 – June 16 on the campus of Florida A&M University (FAMU).

The camp exposed students to the world of entomology, teaching them about the importance of insects to the environment, food security and humans. Lambert Kanga, Ph.D., director for the Center of Biological Control and entomology professor, said: “If children get involved in hands-on programs like this camp at a young age, they will not only appreciate and embrace entomology, but will also choose to study this field at the college level.

The camp coordinator Sabrina Hayes said “last year was our first year and we were trying it out to see if the interest was there and so activities were only for half a day.” “We had 16 students participating last year and they were all excited, so this year we decided to have full days of activities from 8 a.m. to 5 p.m.” “Last year camp we touched on a lot of topics in entomology” said Hayes, “but this year the focus was on the importance of bees and pollinators.”

The students learnt about insect biodiversity, as well as what they could do to help protect and save pollinators. They experienced ‘Aha’ moments while participating in several fun hands-on activities, such as building solitary bee homes which they placed around campus, collecting and identifying aquatic insects, collecting and pinning insects for their individual collection which they got to take home.

An entomology camp for kids would not be complete without experiencing the thought of eating ‘bugs.’ That experience was made possible by Seginus Farms, the first urban cricket farm in Florida devoted exclusively to raising human-grade entomological products. They sent a variety of insect treats, including old bay spiced crickets, chocolate covered grasshoppers, garlic silk worms, and cricket brownies, which was their favorite.

The kids were very interested in the activities, they asked a lot of questions, they were very involved and they learned a lot and they were engaged, said Hayes.

My mom asked me if I wanted to go to an entomology camp, and “I said yes,” says Olivier Jacobs a student at The Magnolia School. “I like bugs and entomology is a fun subject of study because it involves collecting bugs and doing so is a lot of fun. It also involves looking at their anatomy, how many legs they have, do they have hair on their wings, and identifying species as well.” “I learned a lot of things, I learned about insect orders, mouth parts and adaptation.” “One of the most interesting projects was pinning of insects. I made multiple new friends and I am looking forward to coming back next year.” Olivier wants to be a zoologist.

“I enjoyed camp. I learned about...
insects' life and adaptations, and I enjoyed catching bugs and making solitary bee hives” said Bo Joseph, a 9-year old Conley Elementary School student.

“I found pinning insects to be exciting and enjoyed learning about the importance of pollination,” said 8-year old J.R Butts, who attends Northside Christian Academy.

Parents were excited to hear about their children’s daily activities.

“Kadie had a great time. Every evening when she got home, she talked about the field trips, bug collections, the bees and the important roles they play in pollination. Although she collected bugs at home, she does so now with a new found enthusiasm, knowing the role they play in the environment” says Kadie’s dad. “I would definitely have her participate again next year, I believe she learned a lot and was really engaged in what was going on. This camp has really helped to expand her knowledge.”

“Bo and Jin came home with camp applications from their school, Conley Elementary and right away I knew I wanted them to attend the FAMU Entomology Summer Camp” says dad, Allan who teaches at Tallahassee Community College. “The camp was great, the counselors were great and I am looking forward to next year to have them enrolled.”

If you or someone you know may be interested in coming to the Entomology Insect Science Camp, contact Camp Coordinator Sabrina Hayes at sabrina.hayes@famu.edu.

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**AG-DISCOVERY PROGRAM EXPOSES STUDENTS TO CAREER OPPORTUNITIES**

By ST. Clair Murraine and Carmen Lyttle-N’guessan

Like most of the other boys and girls who participated in this year’s Ag-Discovery program, Jordyn Poole left the campus of Florida A&M University (FAMU) with a renewed interest in the field of veterinary science.

Admittedly, Poole and most of her peers went into the two-week program thinking their experience would be primarily about theory. They ended up having several hands-on experiences.

“I know it’s a lot of science,” Poole said, explaining her biggest realization. “It’s going to take a lot of science and I’ve got to like it all the time now, because if you want to be a veterinarian you’ve got to like science.”

Poole, a junior at Darlington High School in South Carolina, plans to have a career in veterinary science.

FAMU is one of several campuses around the country that host the Ag-Discovery program annually. FAMU Ag-Discovery is a two-week program that exposes middle and high school students, 14-17 years old, to careers in animal science and related fields such as veterinary medicine and also to learn about careers in different agricultural disciplines such as plant and animal science as well as agribusiness. The two-week long resident camp gave the students an opportunity to experience college-like living and the academic and social experiences that makes up college life.

They learned about career options from university professors, veterinary professionals, animal scientists and specialists, plant scientists, botanists, and other related professionals working in the public and private sectors to help them better understand and refine their career path.

Students learned the science through hands-on activities (e.g. labs, field) working with a variety of animal species, and attended various field trips to animal industries in North
Florida, South Georgia and Alabama. Some experiential highlights of the FAMU Ag-Discovery program included a two-day stay at the University of Florida experiencing careers in veterinary medicine through their College of Veterinary Medicine; a day at the Tallahassee Animal Service Center learning about shelter medicine, animal control and surgery relating to small companion animals; a day at the Florida Capital meeting with the Division of Animal Industry; two days at the FAMU Extension and Research Center with veterinary professionals learning about animal health through examination of animals and examining samples under microscopes; a visit to the Gulf Specimen Marine Laboratory learning about marine life; and a mini-career fair held as an extension of Ag-Discovery activities that exposed the students to disciplines in College of Agriculture and Food Sciences (CAFS) and workforce opportunities.

It was just what Alexandra Baughn, a student who attends Oak Leaf High School in Jacksonville, was anticipating.

“I want to figure out the cause and affect; how something happens and solutions to kill diseases that affect our crops and animals,” she said. “I went there with an open mind (and) I got to meet a variety of different people and even made some friends.”

Keawin Sarjeant, Ph.D., assistant professor of animal and food science, said he observed many wow moments from the students. “Most times it’s when they have a hands-on experience.”

“They might start off with a perception that they’re not going to work with animals or they are not going to do this or that, but through participatory activities and learning more about a subject matter it is delightful to see their reactions when they have accomplished something.”

“Also some of the students will say, I didn’t know I could do this, or specialize in this or I didn’t know I could work with animals that way,” he said. “A lot of time young kids who are interested in animals think that the only career path is to become a veterinarian, but we want to expand that knowledge and show them that there are other fulfilling and lucrative careers that one can choose.” One of the goals of the program is to expose students to the various avenues that can be pursued through agriculture.
“The students have been very engaging,” said Carmen Lyttle-N’guessan, Ph.D., director of Ag-Discovery program. “The way they come out of what they have experienced gives me a full sense of accomplishment and that our objectives were met.”

Evaluation and feedback of the program from students and parents were mostly favorable. In an evaluation of the program, almost 100 percent of the students and their parents agreed that the program met their learning expectations about options in animal science and veterinary medicine, and that the program would help them to decide whether to pursue a career in the animal science field. Similarly, they agreed that they would recommend the program be continued in its present form.

At the closing ceremony, parents and students took turn in expressing their gratitude of the program and praised its quality. Overall, both parents and students were happy about the opportunities the Ag-Discovery program provided to them.

“After the closing of Ag-Discovery program,” said Lyttle-N’guessan, “some parents and students spoke with me one-on-one expressing how excited they were to be a part of Ag-Discovery and expressed interest in coming back to FAMU.”

FAMU also uses the program as a means to recruit students for its agriculture program. Several of the students have expressed their interest in attending and have submitted applications.

The Ag-Discovery camp, which was free to participants, is a jointly sponsored program by FAMU, the U.S. Department of Agriculture (USDA), Animal and Plant Inspection Service (APHIS) and Animal Care. This year’s Ag-Discovery program was held June 11-24 with a total participation of 19 students from all over the United States.

For more information on the Ag Discovery program, contact Carmen Lyttle-N’guessan at (850) 561-2095.

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**FORESTRY AND CONSERVATION EDUCATION (FACE) SUMMER CAMP**

*By Kimberly Davis and Andrine Stanhope
Photos Courtesy Kimberly Davis*

“The FACE Program was informative, interesting and fun. It opened my eyes to a number of professions that I would not have been exposed to generally,” said a senior at Rickards High School International Baccalaureate Program. The Forestry and Conservation Education (FACE) Summer Program is another summer program emanating out of the College of Agriculture and Food Sciences, which exposes high school students to another facet of the STEM programs.

“FACE was conceptualized and offered for the first time in 1998,” said Kimberly Davis extension educator and coordinator. It is designed to target disadvantaged and underrepresented youths to the scientific disciplines of forestry and natural resources conservation, including the genetics of plants and other related disciplines.

Twenty-two students participated in the two-week long program filled with diverse sets of activities. The students spent activity-packed days learning about forestry, natural resources management and conservation, the watershed and plant sciences. The students were engaged in hands-on activities through interactive lecture, laboratory exercises and field trips to terrestrial, estuarine and marine ecosystems. They had an opportunity to interact with professors, graduate students, foresters and natural resources specialist. The major lab exercise entailed studying maize...
(corn) genomes. This was a collaborative effort between Florida A&M University (FAMU) and Florida State University (FSU). The students conducted their experiments under the tutelage and guidance of Oghenekome Onokpise, Ph.D., FAMU professor and Hank Bass, Ph.D., professor at FSU. Three full days were dedicated to studying and learning about the various mutations of maize at the FSU genetics lab. At the end of the study a “corny” mutant’s field day was held at the FSU Biological Research Station, where the students served as interpretative hosts and guides for visitors through the corn maze on site.

The line-up of field tours took them to Tall Timbers Research Station, where they learned about wild fire ecology and the importance to forestry ecosystem. At Bear Creek Educational Forest, they learned about products, which emanate from the forest and the many career types in the forest industry. During their trip to the Coastal Plywood Company, they received a first-hand and up-close look at the logging operation and the dynamics involved. At the St. Marks National Wildlife Refuge, they learned about wildlife habitat management and toured sections of the 70,000-acres refuge.

The aquatic environment was not to be left out, the students studied the flow of storm water through the watershed to the Gulf of Mexico by visiting Wakulla Springs and the Apalachicola National Estuarine Reserve. Boat tours and swimming were some of the leisurely fun parts of the program.

The FACE Summer Program was held June 19 through June 30 and was funded through a National Science Foundation grant.
AGTECH CENTURY 21. EXPOSING LOCAL STUDENTS TO CAREERS IN ANIMAL SCIENCE

By Erica Willis and Andrine Stanhope

AgTech Century 21 is a summer outreach program for middle and high school students from Tallahassee and the surrounding area. The program is offered through the College of Agriculture and Food Sciences (CAFS) Cooperative Extension Program (CEP) and is funded by the U.S. Department of Agriculture National Institute of Food and Agriculture (USDA-NIFA).

For the past six years, CAFS has hosted the program each summer with the aim to introduce and expose local underrepresented and underserved middle and high school students to careers in agriculture and food science, specifically animal science and related field such as veterinary medicine. It also serves to enhance students’ knowledge in science and stimulate an interest in animal science and related fields. The camp provides a hands-on opportunity for students to learn about the anatomy and physiology of animals and to see up-close various types of land and sea animals.

Part of their hands-on activities included field trips to several animal industries in North Florida and South Georgia. Each year, the field tour increases in number and gets more diverse. In Florida they visited: Madison Livestock Auction Market where they got exposure to livestock marketing; Gulf Specimen Marine Laboratory learning about marine life; Tallahassee Museum learning about mammals, reptiles and birds in their natural habitats; the Florida Department and Agriculture and Consumer Services Division of Animal Industry learning about animal health care and animal husbandry and management. At the Ocheesee Creamery in Altha, they were to view milk being bottled. They spent a day at FAMU Extension and Research Center with veterinary professionals learning about animal health through examination of animals and viewing samples under microscopes; visited a dairy production and processing facility where they got an overview of dairy cattle and milk production and processing. At the Chehaw Zoo in Albany, Georgia, they got to see various wildlife animals.
and learned about their care in the industry setting.

“Visiting the Marine Lab was truly a great experience,” said Kiyle Gardner. “I was able to see as well as touch different marine life and learn several facts about them as well.”

“One of the interesting things I learned at the Gulf Specimen Lab,” said Zoe Brammer, “was that the horseshoe crab produces a special chemical that is used in the lab to determine the effectiveness of certain medicines.”

The one-week program ended with a closing ceremony where the students were presented with certificates of completion, a book about becoming a veterinarian, as well as, their very own stethoscope.

Participants and their parents had high praises about the program. “I got to interact with a lot of the animals,” said Zoe. “Most kids at my age don’t normally get to do that at other camps.” Zoe was one of several students who, because of this experience, want to become a veterinarian. Kiyle Gardner said, “I had an amazing experience and enjoyed my time here, I got to meet new people and learn interesting facts about animals.” Kiyle is interested in marine biology as well as veterinary medicine.

It was also the consensus of parents that the program provided a good background and exposure to animal science and the various career fields one might choose from. “I loved seeing Kiyle come home excited,” said Kiyle’s mom, “most local summer camps don’t offer this kind of opportunity for hands-on-learning, or field trips for free.”

Although students are only permitted to participate in AgTech only once, based on their enthusiasm, participation, interest shown and questions asked during the week of activities it is a fair assessment to say that the program will have a profound and positive impact on their lives.
Apalachicola, a quiet seafood town in Franklin County Florida, is situated on the shore of the Apalachicola Bay, an inlet of the Gulf of Mexico. The roughly hour and a half drive via US-319 and US 98 will get you there from Tallahassee. The scenic and quiet 75-mile stretch hugging the Gulf of Mexico, boasts the world’s smallest police station, white sand beaches, beautiful resort cottages and RV camp sites, national and state forests.

This charming fishing town was once the third busiest port on the Gulf of Mexico, behind New Orleans, Louisiana and Mobile, Alabama. Home to a variety of seafood, it is most famous for its plump, salt and sweet oysters, and produces 90 percent of the state’s oysters. The town also has its fair share of historic buildings and homes, art galleries, artisan studios and a rich and creative folklore. Along with some of the most awesome seafood restaurants, there is a vibrant night life, and quaint and one of a kind boutiques.

However, with all these sources to provide economic stability and growth there are areas of the town that need revitalization to boost business and economic development.

One such area is the historic Bowery District. In its former years, it was home to the Apalachicola Northern Railroad Depot, cafes, meat markets, dry goods stores and a barber shop. However, when the trains stopped rolling Bowery District business doors began to close.

Although the District has been experiencing a revival, boasting several quality established businesses and newer enterprises, it is not as frequented and travelled as other more established commercial parts of downtown. And while it is on its way to becoming a vibrant district once again, there is still much more to be done.
Several projects aimed at revitalizing the Bowery District are in the pipeline. One of significance is the Bowery Market, which had its opening on June 28. Bowery Market is an open-air street market for locals and people from adjoining counties to come and sell their arts and craft, jewelry, plants, fresh produce, baked goods and food, services, activities and other items. The Market will be open every Wednesday from 11 a.m. - 3 p.m.

Bowery Market is a collaborative effort with Apalachicola Main Street, the local downtown business owners and the Florida A&M University (FAMU) College of Agriculture and Food Sciences (CAFS) Cooperative Extension Program (CEP) – Business Incubator Program.

“Apalachicola Main Street is all about downtown economic development and historic preservation” said Augusta West, executive director of Apalachicola Main Street. “When I heard that FAMU's Business Incubator Program was here (in Franklin County) I reached out Fallan Goff, program coordinator in Franklin County, to see how we might work together to partner and promote economic development, and new business entrepreneurs getting started.”

“With FAMU agreeing to partner with us, they bring to the table two great elements: (1) their connection with the Cooperate Extension Program who are able to identify and refer fresh produce vendors and (2) provide contacts and refer budding entrepreneurs,” said West.

“Initially, there will be space for 20 vendors who want to participate for a small set-up fee of $10,” said West. “We have invited a diversity of entrepreneurs, which will be able to draw locals and visitors to the District.

West said “we are especially excited about our fresh produce vendors who have shown an interest, because other than a farmer’s market every other Saturday and the grocery stores, we do not have a place on a regular basis where we can buy fresh produce.”

A local solo guitarist provided live entertainment while customers moved from vendor to vendor. There was custom made jewelry, arts and craft, homemade baked goods and freshly harvested produce. In addition to the CAFS Cooperative Extension booth, there was Jane Kirk “Worn by the Sea,” Faye Johnson “Talking Cat Pottery” and New North Florida Cooperative just to name a few that were at the opening.
KATHERINE MILLA, PH.D., professor in the Center for Water Quality, and MUHAMMAD HASEEB, PH.D., assistant professor in the Center for Biological Control, have been selected as fellows of the FAMU Provost’s Digital Learning Initiative (DLI) for the 2017-2018 academic year.

Fellows were chosen through a competitive application process. The DLI is a new program at FAMU designed to assist faculty in transforming and redesigning their teaching methods and expertise, with a focus on technology infusion and student-centered learning. Each DLI fellow selected a course to redesign for increased student enrollment and engagement using blended/hybrid digital approaches to teaching and learning. During the spring and summer semesters DLI fellows have been attending professional development learning sessions led by faculty in FAMU’s Teaching and Learning Center. Fellows will introduce their redesigned courses during the 2017-2018 academic year, and will also develop an online version of the course that will be deployed via Apple’s iTunes U.
In keeping with its tradition since 2009, National Caribbean American Heritage Month is celebrated in June. The Caribbean American Heritage Council (CAHC) honored four Tallahassee Caribbean Americans at its community leadership awards dinner on June 25.

Honorees are selected and recognized for their significant contributions to the community. To date a total of 50 persons have been recognized. At this year’s award, Commissioner Curtis Richardson presented a proclamation to the honorees on behalf of Mayor Andrew Gillum. Featured guest speaker was Neil Rambana, Esq., and John Baker, pastor at New Hope International Outreach Ministries delivered the invocation.

“We celebrate the contributions of Caribbean Americans to American life and the bonds of friendship between the United States and the Caribbean nations...” stated Pam Ridley, council member and host of the event.

The CAHC promotes knowledge of the cultural heritage of Caribbean Americans and offers programs that educate the community about their experiences, and provides a space for dialogue and intercultural exchange. The Council also offers scholarships and support for migrant workers.

**THIS YEAR’S HONOREES WERE:**

- **James Brown, Ph.D.**, a clinical psychologist of Bahamian heritage.
- **Renée Gordon, Esq.**, bureau chief of the Employment Litigation Bureau, Florida Office of the Attorney General, who is of Jamaican heritage.
- **Robert Taylor, Ph.D.**, dean and director of land-grant programs in the College of Agriculture and Food Sciences at Florida A&M University, who is of Jamaican and Bahamian heritage.
- **Shacafrica Simmons** (chef), the Food Network’s Chopped Champion, who is of Bahamian heritage.
Introduced forages are generally non-native species that have been selected for high-yield potential and drought tolerance. Management of introduced forages is characterized by the intensive use of inputs not normally associated with proper crop management. Most notable among these inputs are the use of nitrogenous fertilizers and herbicides.
The major introduced forage crops common to Jordan include forage sorghum, silage corn and sorghum Sudan grass hybrids. Producers who choose to try and take advantage of the high-yield potential of introduced forages must also provide the necessary inputs required by these forages. Forage sorghum (Sorghum bicolor), Sudan-grass hybrid (Sorghum × drummondii) and silage corn (Zea mays) production is not sufficient in irrigated eastern areas of Jordan, therefore farmer families cannot afford sufficient animal feeds. This is due to two major reasons: the first is lower crop productivity related to poor agricultural practices including no use of chemical fertilizers, herbicides, water use efficiency and low yielding hybrid variety. The second reason is diminishing of farmland resources because of urbanization and abstention from agriculture by local community farmers.

In addition, the global warming of climate change and its impact on drought conditions affected productivity of crops and made forage sorghum and silage corn crops non-effective in yield and economic return. Sorghum and silage corn are two important forage crops in Jordan. The goal of this research was to increase forage sorghum and silage corn production in the target areas. The goal of the research was to increase forage sorghum and silage corn production in targeted areas, and to determine the effective use of irrigation modeling with maximum water use efficiency to sustain forage sorghum and silage corn production for sustainable animal production.

A matrix procedure was conducted to evaluate five commercial hybrids seedling performance in open field using a soil hydrology input to model irrigation, agronomic inputs to fertilize and seeding, and seed technology parameters to evaluate seedling establishment based on seedling vigor and water use efficiency.

In brief it was concluded that growing high-yield potential and drought tolerant hybrids for both forage sorghum and silage corn in Jordan will be a potential target with high impact. Extension services will be carried out in the future to transfer the new innovation of irrigation modeling to farmers in Jordan using digital sensors of soil moisture, temperature and relative humidity.

Additional studies on the cost benefit ratio in regard to cash flow issues between Florida A&M University and the National Center for Agricultural Research and Extension in Jordan is recommended.

This research was carried out by extension scholar Mohunnad Massimi from Jordan under the Norman Borlaug Fellowship Program funded by the USDA-FAS. Massimi conducted his training research over a three-month period in the College of Agriculture and Food Sciences, evaluating the hybrid varieties of forage sorghum and field corn in north Florida. His intention was to use the information from the study to increase crop productivity in his native country. Massimi conducted his research under the mentorship of Muhammad Haseeb, Ph.D., Anandhi Swamy, Ph.D., Cassel Gardner, Ph.D., Oghenokome Onokpise, Ph.D., Jesua Legaspi, Ph.D., and Alfredo Lorenzo, Ph.D.
On June 19, 2017 Lambert Kanga, Ph.D., and Sabrina Hayes participated in the 7th Annual National Civil Rights Conference in Meridian, Mississippi. Despite the progress made over the past 30 years, women and minorities are still disproportionately and underrepresented in the STEM fields. At the youth empowerment session of the conference, Kanga and Hayes gave an overview of the entomology program at Florida A&M University, how they could pursue an entomology degree, career opportunities and the impact they could make locally, nationally and globally in the field of entomology. They also gave a hands-on workshop about the importance of insects and how they function. As a result of their participation in the conference, the mayors of Meridian and Philadelphia, Mississippi awarded them with a certificate of appreciation. The certificates were presented to them by Robert W. Taylor, Ph.D., dean of the College of Agriculture and Food Sciences at a later date.
Former CAFS Assistant Professor Marlon Thomas is leading the R&D effort at Sensor-Kinesis Corp., in Inglewood, California. He is leading a major research project in collaboration with colleagues from Sandia National Laboratory on biosensors for food safety applications.

The genesis of this project started while he was in the Biological and Agricultural Systems Engineering (BASE) Program at FAMU. The biosensors are designed to rapidly detect bacterial species and viral particles in food, water or blood for either environmental monitoring, food safety or point-of-care diagnostics. While at FAMU, Thomas filed a patent disclosure for a microfluidic-based optical sensor and was instrumental in training undergraduate students in all aspects of biosensor development.

Thomas currently works under the direct supervision of Stanford University Nobel Laureate, Roger Komberg, who was recently appointed chairman of the company. Their work on biosensors was recently featured by Sandia National Laboratory in their Partnerships Annual Report, which may be viewed at the following link: http://bit.ly/2vJ4jnA

Biosensors in Portable Virus and Bacteria Diagnostic Products Improve

Source: Sandia National Laboratories
Partnerships Annual Report FY 2016

CHALLENGE

The healthcare system has reached a breaking point. Medical science keeps advancing, but costs are rising beyond what is sustainable. One way to manage runaway healthcare costs is through early detection. By keeping people healthy and monitoring their condition regularly, diseases can often be detected sooner and treated before it becomes acute and requires more expensive interventions.

Although the technology exists, there is a lack of small, portable and inexpensive bio detection platforms to link biology to microchips that can be used easily and share test data via digital networks. These devices would run tests in seconds or minutes, producing results without sending samples to a lab.
In order to fill this need, Sensor-Kinesis, a development stage high-tech company, has come up with a medical technology platform to identify pathogens such as E. coli, Salmonella and Listeria, as well as the early stage of certain cancer biomarkers. They are developing a handheld label-free device for early detection of human diseases as well as environmental pathogens.

Sensor-Kinesis is licensing Sandia National Laboratory’s shear horizontal surface acoustic wave (SH-SAW) biosensor array technology for use in some of their devices. Sandia’s SH-SAW biosensor array is an R&D 100 award-winning technology originally developed with the University of New Mexico. These sensors have been demonstrated for the detection of bacteria, viral particles and proteins. Sandia is now working with Sensor-Kinesis to validate the commercial use of the sensor in a range of applications in medical and industrial settings.

By utilizing Sandia SH-SAW biosensors, Sensor-Kinesis is taking advantage of proven technology that will help make their vision of creating portable devices that rapidly produce accurate test results a reality. While they continue to develop products for a variety of applications, they can leverage Sandia’s research into products, which can be brought to market in the very near future.

Sensor-Kinesis is working to bring biosensor technology to market at a cost point that will make it readily available to individual doctors, smaller health care institutions, and food and air quality agencies, as well as health providers in remote locations. Early applications could include the efficient and inexpensive detection of air and waterborne pathogens in restaurants, hospitals and hotels. The long-term goal is for these medical devices to be affordable and easy to use by individuals at home to monitor conditions so that they can be caught in the early stages, before they require expensive medical care.
STUDENTS EXPLORE THE AMAZING WORLD OF INSECTS
How do most pre-college students and even some college students view insects?

They believe insects are creepy crawler nuisances. Did you know that of all the animals on earth, insects are the most abundant? And that without insects, there would be a reduction in crop yields due to the lack of pollination? Many plants would disappear and the entire ecosystem would collapse in the absence of insects in the food chain.

The entomology program in the College of Agriculture and Food Sciences at Florida A&M University (FAMU) hosted its first entomology open house for high school students to learn about the amazing world of insects. Onsite to capture the event were local media houses, which gave their reports as follows:

**Entomology on Show**

Hali Tauxe, Democrat Photographer  
Tallahassee Democrat  
April 20, 2017 - Page A07

The Entomology Insect Science open house was a success, said Department Chair Lambert Kanga, Ph.D. The department hosted its first open house on Wednesday, April 19, in the lobby of the Perry-Paige Building on FAMU’s campus. Invited were students from local high schools and colleges to learn more about insects and their impact on humans and the environment. The event showcased FAMU’s unique agricultural programs and its impact on entomology and research. Attendees participated in hands-on activities such as cockroach races, termite mind control and bug circuits.

Apart from FAMU’s entomologists and graduate researchers, industry partners, including the Department of Agriculture and Consumer Services and the United States Department of Agriculture – Animal, Plant Health Inspection Service (USDA-APHIS) and representatives from the pest control industry were also on display and students were able to ask questions and gain knowledge. The goal of the open house was to raise awareness about entomology and to introduce younger students to the range of possible careers the field offers.

“I might look into it now,” said St. John Paul II Catholic High School student Jake Hazen who attended the open house. “It’s a lot cooler than I thought.” Hazen said what he learned had even given him a new appreciation for insects themselves. “I’ll think of them differently. I won’t think of them as just that gross thing anymore.”

**FAMU Hosts Insect Science Open House**

Symone Davis WCTV  
TALLAHASSEE, Fla. (WCTV)

Middle and high school students paid a visit to FAMU on Wednesday, April 19, to get up close and personal with creepy crawlers. The display of bees, beetles and roaches was a part of FAMU’s Insect Science Open House. The entomology department invited local students to learn how insects play a key role in the environment and agriculture.

“The different dangers of insects or how they can give you different diseases and how to be prepared against them,” said high-schooler Emma Smith.

“I thought that all insects that came into farms were bad. But they actually eat the bugs that eat plants and they’re actually helpful,” said middle-schooler Jarret Johnson.

The college staff hopes that the workshop will encourage more students to pursue careers in the entomology.
CAFS PROFESSOR RECEIVES USDA-NIFA GRANT AWARD

Aavudai Anandhi Swamy, Ph.D., assistant professor of Biological Systems Engineering in the College of Agriculture and Food Sciences (CAFS), received grant funding of approximately $600,000 from U.S. Department of Agriculture-National Institute of Food and Agriculture (USDA-NIFA). The 1890 Institution Capacity Building Integrated proposal entitled “Building Capacity in the Natural Resources Engineering Research and Teaching Using Innovative Strategies (B-CURTAINS),” will integrate teaching and research initiatives in CAFS-BSE program and the Center for Water Quality (CWQ).

The teaching component of the project will focus on developing innovative teaching modules using analogies designed to help students understand important abstract concepts in natural resource engineering. The research component of the project focuses on developing and implementing a systems approach, using indicators to determine adaptive management strategies for water resource conservation in response to climate change at a watershed and regional scale.

“The project will build upon on-going research being conducted by Katherine Milla, Ph.D., and supported by NIFA and the USDA Forest Service in an agricultural/forested watershed system draining a region in South Georgia-North Florida as well as using my expertise in developing models using novel systems thinking approaches for vulnerability and adaptation of sustainable agroecosystems and water resources” Swamy said.

“In addition,” said Swamy, “the teaching and research components of the project will be integrated by developing teaching and curriculum modules from the research-based activities, and by involving 25 Biological Systems Engineering students in all aspects of the project through research assistantships.

Co-principal investigators on the project includes Katherine Milla, Ph.D., hydrogeology and geographic information systems; Nathan Baily, Ph.D., watershed modeling, best management practices; Satyanarayan Dev, Ph.D., bioprocess engineering; and Andrew Rasmussen, Ph.D., aquatic entomology and water quality. Other persons who will lend support to the project includes Charles Magee, Ph.D., (BSE); Odemari Mbuya, Ph.D., (CWQ); Yves Anglade, Ph.D., and Charmane Caldwell, Ph.D., (FAMU-FSU College of Engineering); Johnny Grace III, Ph.D., (USDA); Gulnihal Ozbay, Ph.D., (Delaware State University); Wubishet Tadesse, Ph.D., (Alabama A&M University), David Zierden, Ph.D., (Florida State University), and Clyde Fraisse, Ph.D., (University of Florida).
Complete the crossword below

**Across**
10. A period of temporary economic decline during which trade and industrial activity are reduced
11. Female sheep
12. Seed and agriculture company
14. Mature male swine, uncastrated
16. A doctor who looks after animals
19. Newest BS program added in CAFS
20. Plant based milk (a nut)
21. The growth of crop plants in a liquid medium is called
23. Young sheep under 1 year of age
24. A_______ is used to remove toxic heavy metals in your drinking water without energy input
26. Which state grows the most apples
27. Fuzzy pollinator
28. Mature male sheep, uncastrated

**Down**
1. Related to wetlands or land around rivers or streams
2. Component of plant cell walls that is not digestible by most animals
3. __ Pest Management
4. Which state is in the corn belt
5. Genetically ________ organisms
6. The branch of knowledge concerned with the production, consumption, and transfer of wealth
7. The primary milk carbohydrate is
8. Which fruit has its seeds on the outside
9. Application of mathematical precision to solve biological problems
13. The study of insects
15. An expert who can give advice on crops and soils
17. Any unwanted plant, especially those that crowd out more desirable plants
18. A sweetener found in fruits
22. Emerald Riesling, Zinfandel, Chardonnay, and Pinot Noir are all varieties of what kind of fruit
25. A mixture of sand and clay that also contains humus is called ________

Answers on pg. 55
The American Society of Agricultural and Biological Engineers (ASABE) states that their 2017 forum was designed to “expand awareness of current trends in the industry, promote and acknowledge innovations in design and technology, and to provide opportunities for professional development, with a focus on the economic, political and societal impacts facing the industry.”

Aanadhi Swamy, Ph.D., assistant professor in CAFS Biological Systems Engineering Program was one of the presenters at the annual international meeting of the ASABE, which was held in Spokane, WA, July 16-19. Swamy presentation entitled “CISTA Model: A Novel Tool to Develop Adaptation Strategies in a Changing Environment” was presented in the “Leveraging Big Data and Computational Tools for Tackling Water Resources Problems” session.

Swamy was also instrumental in the proposal, development and creation of a session that addressed the “Vulnerability Assessment of Land Resources for Sustainable Development: Overview of the Lessons Learned and Next Steps.” The invited technical session, which she moderated, explored ways to link the assessments for sustainable development of land resources. Multi-disciplinary speakers presented case studies, lessons learned, overviews of cutting-edge technology, design strategies and best practices aimed at addressed soil and water components of land resources, the vulnerability and sustainability to changes in climate and land-use.

Multi-disciplinary speakers addressed soil and water components of land resources and their vulnerability to changes in climate and land-use. They did so by sharing case studies, lessons learned, overviews of cutting-edge technologies, design strategies and best practices aimed to improve land resources sustainability through vulnerability assessment.

“A multi-disciplinary approach through a series of talks such as this session” said Swamy, “can open up avenues to explore climate and land-use stressors important for vulnerability assessments and how the stressors can be represented using indicators.”
When asked if you could go back in time, what would you do differently, LATASHA LYTE’s response was “every experience teaches a lesson, I can’t think of anything that I would do differently.” Latasha graduated with a Bachelor of Science degree in Agricultural Science – majoring in agronomy, from the College of Agriculture and Food Sciences (CAFS), formerly the College of Engineering, Science, Technology and Agriculture. She then went on to earn a Master of Science degree in Plant and Soil Science for Alabama A&M University (AAMU) and thereafter an MBA from Grand Canyon University.

While at Florida A&M University (FAMU) she received the FAMU National Alumni Association Scholarship, Florida A&M University-New York City National Alumni Association Scholarship, NBC Three Wishes Scholarship and was an honor roll and Dean’s List student. She was a member of the FAMU Chapter of SISTHUS, Natural Resource Science Club and Minorities in Agriculture, Natural Resources and Related Sciences (MANRRS).

Latasha had the opportunity to intern several summers with the USDA while an undergrad. Her first internship was with the Forest Service’s Region 9 Conservation Educational Internship Outreach Program in Milwaukee, Wisconsin. In this program she worked with youth in urban communities teaching and educating them about the importance of being good stewards of the environment, environmental protection and how they could also pursue the many career paths the USDA offers.

Her next internship with the USDA took her to West Virginia where she conducted field studies on the Monongahela National Forest as a Student Career Experience Program (SCEP) soil scientist. She gained valuable experience collecting and analyzing soil samples and working
with archaeologist on excavation projects, and civil engineers on the redesign and design of a trail.

Another one of her USDA internships was with the Forest Service Office on FAMU’s campus where she worked in the water quality lab learning instrumentation, and soil and water analysis procedures.

“Learning these skills helped to prepare me for graduate school,” said Lyte. “In addition, one of my professors Oghenekome Onokpise, Ph.D., pushed and inspired me and other students to pursue graduate school and to never give up.” While attending graduate school at AAMU, she became a member of Alpha Epsilon Lambda National Honor Society for Graduate and Professional Students, and also assisted in chartering the AAMU Toastmasters International Club, where she was their first vice president of education.

After graduate school, four months to be exact, she accepted a position as a forest soil scientist with the USDA Forest Service in Nelsonville, Ohio. There she managed and provided expertise on soil resources for the Wayne National Forest, which included using spatial analysis to create baseline information on sites before field verification. She also provided interpretations for a variety of soil uses that required considerable revision of guides and precedents to develop sound analyses and predict soil behavior, thereby, modifying procedures and policies to local conditions.

During her time with the Forest Service, she held two other positions, which helped her to gain additional experience with the agency. In one capacity, she served as a National Environmental Policy Act (NEPA) Appeals and Litigation coordinator/planner where she gathered and evaluated subject matter documents prepared by others and included the required information and assumptions into the NEPA source document. She also supported resource specialists working on interdisciplinary teams and contributed to the team as they worked through evaluations, analysis and documentation concerning the proposals and decisions in environmental assessments, and/or categorical exclusions.

The other position was as a timber resource specialist, where she supported the timber program. She reviewed monthly statements for discrepancies, audited financial aspects of completed contracts for contract closures and generating bills for collection. It was while working here that Latasha decided she wanted to extend her academic focus, which would help her to broaden her horizons that led her to obtain an MBA.

Latasha is now a program specialist in the Division of Global Climate Change at the USDA National Institute of Food and Agriculture (NIFA) in Washington, D.C., where she provides support to the development, planning and administration for the overall implementation of various programs.

Latasha has been working with the USDA for more than eleven years. “I enjoy the opportunities provided especially working with people of different cultural backgrounds,” she said. The one advice she would give to the students in CAFS is to “network and never burn bridges.”
Famers Highlighted by FAMU’s Agriculture Department

Jenelle Robinson Ph.D., and Satyanarayan Dev, Ph.D., faculty members in the College of Agriculture and Food Sciences (CAFS) at Florida A&M University (FAMU) are highlighting the efficiency of farmers. They say, over the past decades food costs have gone down dramatically due to hard work of local farmers.

Experts say, this is also in part due to food trends having changed in recent years, and people have traded cooking for convenience.

Experts also say that about 14 percent of household income goes towards food and that households need to prioritize healthier food for their families.

FAMU’s CAFS has been highlighting small businesses and are encouraging residents to buy locally grown produce to help boost the local economy.

You may view the story at the following link: http://bit.ly/2vw1FB3
The 2017 hurricane season has surely been an unprecedented one so far. Two weeks ago there was Hurricane Harvey, which severely damaged several areas in Texas, where it created the never before seen catastrophic flooding in Houston and its environs.
Thousands of buildings were flooded, highways became bed of raging rivers and the sea floor amass with surf type waves. Those away from Houston who were not victims, witnessed the catastrophic event unfold on their TV screens.

Less than two weeks after Harvey ripped through Texas and Louisiana, causing more than 50 deaths and billions of dollars in damages, on its heels was Hurricane Irma, which quickly developed into a category 5 ranking among the most powerful hurricanes ever recorded.

Prior to hitting Texas, Irma carved a merciless path of destruction in the eastern Caribbean. The tiny Islands of Anguilla, St. Barts, the British and U.S. Virgin Islands were battered and left grappling with flattened homes, flooding and widespread devastation. Barbuda have been literally annihilated, with more than ninety five percent of the buildings decimated. St. Kitts, Nevis, Puerto Rico, Dominican Republic, Haiti, Turks and Caicos, and the Bahamas also got their share of battering from Irma.

Making landfall in Cuba as a Category 5 hurricane, Irma lashed the island's northern coast with a direct hit, before losing some of its force. It was the first Category 5 hurricane to have made landfall in Cuba since 1924. As it churned towards Florida after leaving a trail of destruction across the Caribbean, it regained strength becoming a category 4 before it bore down on the Florida Keys with maximum sustained winds at 130 miles per hour (mph).

Leaving the Keys, Irma was downgraded to a category 3 hurricane before making a second landfall on Marco Island, and further downgraded to a category 2 before hitting Naples. Irma created history, since it is the first time since the recording of hurricanes began in 1851, that two category 4 hurricanes have made landfall in the U.S. in the same year. Irma clobbered and pounded Florida from coast to coast with violent winds and torrential rains leaving coastal communities with fears of deadly storm surges. Irma made its first U.S. landfall as a Category 4 leveling homes and business and leaving people without food and water. A new flood record was set when Irma slammed into Jacksonville, inundating homes, business and apartment complexes.

Florida officials directed 6.5 million residents to leave their homes making it one of the largest emergency evacuations in American history. By the time Irma left Florida, more than sixty five percent of the Sunshine State was left without power.

The storm is responsible for the deaths of at least sixty nine people in the Caribbean and the Southeastern United State, with thirty two of those across Florida, Georgia and South Carolina.

So what is the cause for these frequent formations of severe intensities? Could it be climate change? The verdict is still out depending on with whom you may converse. Nevertheless, there is no doubt that there is a relationship between global climate fluctuations and hurricane activity.

Researchers know that tropical storms and hurricanes derive their energy from warm sea-surface temperatures as well as temperature differences between the sea and the overlying, moisture-rich tropical atmosphere. The warmer the ocean, the more energy there is available for the storm. Warm seas results from increase in temperature caused by greenhouse gases mainly carbon dioxide.

Rising sea temperatures not only propels dangerous storms it can also have a devastating impact global food security. Warming oceans alters the distribution of fish and total fish catch, a vital component of global human protein supply. Many tropical communities that are strongly dependent on fisheries
...AS THE STORM APPROACHES

- Download an application to your smartphone that can notify people where you are, and if you need help or are safe.
- Use hurricane shutters or board up windows and doors with 5/8-inch plywood.
- Bring outside items in if they could be picked up by the wind.
- Clear gutters of debris.
- Reinforce the garage door.
- Turn the refrigerator to its coldest setting in case power goes off. Use a cooler to keep from opening the doors on the freezer or refrigerator.
- Fill a bathtub with water.
- Get a full tank of gas in one car.
- Go over the evacuation plan with the family, and learn alternate routes to safety.
- Learn the location of the nearest shelter or nearest pet-friendly shelter.
- Put an ax in your attic in case of severe flooding.
- Evacuate if ordered and stick to marked evacuation routes if possible.
- Store important documents -- passports, Social Security cards, birth certificates, deeds -- in a watertight container.
- Have a current inventory of household property.
- Leave a note to say where you are going.
- Unplug small appliances and electronics before you leave.
- If possible, turn off the electricity, gas and water for the residence.

...SUPPLIES

- A three-day supply of water, one gallon per person per day.
- Three days of food, with suggested items including: canned meats, canned or dried fruits, canned vegetables, canned juice, peanut butter, jelly, salt-free crackers, energy/protein bars, trail mix/nuts, dry cereal, cookies or other comfort food.
- A can opener.
- Flashlight(s).
- A battery-powered radio, preferably a weather radio.
- Extra batteries.
- A first aid kit, including latex gloves; sterile dressings; soap/cleaning agent; antibiotic ointment; burn ointment; adhesive bandages in small, medium and large sizes; eye wash; a thermometer; aspirin/pain reliever; anti-diarrhea tablets; antacids; laxatives; small scissors; tweezers; petroleum jelly.
- A small fire extinguisher.
- Whistles for each person.
- A seven-day supply of medications.
- Vitamins.
- A multipurpose tool, with pliers and a screwdriver.
- Cell phones and chargers.
Contact information for the family.
A sleeping bag for each person.
Extra cash.
A silver foil emergency blanket.
A map of the area.
Baby supplies.
Pet supplies.
Wet wipes.
A camera/camera phone (to document storm damage).
Insect repellent.
Rain gear.
Tools and supplies for securing your home.
Plastic sheeting.
Duct tape.
Dust masks.
An extra set of house keys.
An extra set of car keys.
An emergency ladder to evacuate the second floor.
Household bleach.
Paper cups, plates and paper towels.
Activities for children.
Charcoal and matches, if you have a portable grill. But only use it outside.

Continue listening to a NOAA Weather Radio or the local news for the latest updates.
Stay alert for extended rainfall and subsequent flooding even after the hurricane or tropical storm has ended.
Use the Facebook Safety Check to let family and friends know you’re safe.
If you evacuated, return home only when officials say it is safe.
Drive only if necessary and avoid flooded roads and washed out bridges.
Keep away from loose or dangling power lines and report them immediately to the power company.
Stay out of any building that has water around it.
Inspect your home for damage. Take pictures of damage, both of the building and its contents, for insurance purposes.
Use flashlights in the dark. Do NOT use candles.
Avoid drinking or preparing food with tap water until you are sure it’s not contaminated.
Check refrigerated food for spoilage. If in doubt, throw it out.
Wear protective clothing and be cautious when cleaning up to avoid injury.
Watch animals closely and keep them under your direct control.
Use the telephone only for emergency calls.
If moving livestock, make arrangements to do so as soon as possible after learning about the approaching storm.

If large livestock cannot be evacuated, turn them loose in larger pastures or pens on high ground with some solid shelter or tall brush and large trees for cover. Livestock should never remain in a closed barn. If the barn is damaged by wind, the animals could be injured or killed.

Keep livestock feed, hay, horse tack, animal medicine, and other livestock supplies stored in locations that will withstand rising water and high wind.

Have enough livestock feed on hand for at least a week, and the same amount of water – up to 150 gallons per horse or bovine.

Stock up on basic veterinary supplies. Including: bandages, topical antibiotics, ropes, and halters for restraining injured animals.

Keep a one-month supply on hand of medications and livestock supplements. Label them clearly with feeding instructions in case you cannot be there to administer.

Make sure housing, food, and supplies for small animals such as chickens and rabbits are storm ready and able to withstand high winds and rising water. Smaller animals can be brought indoors if necessary. Garage may be used as temporary pens.

Cover heavy farm equipment and tie down if possible.

Keep a written inventory of all livestock, including breeding and expense records, with your important financial papers. If you lose livestock, you may need this kind of paperwork for insurance purposes.

Make sure livestock branding, tagging or other identification programs are up-to-date in case some of your animals become lost.

Keep livestock fencing, gates, corrals, and other enclosures in good repair throughout the year. Plan to do it in May of each year before storm season starts.

Check on livestock after the storm. Do not put yourself at risk to check on livestock during the storm.

Most animals are used to being outside in bad weather and will simply need clean feed, a dry place to stand, and water to help them recover from stress.

Make sure livestock have plenty of water and food, which has not been contaminated by pollutants. In some cases, it is necessary to truck in water and food or to remove livestock from contaminated areas. Add a few drops of bleach to standing water to prevent disease.

Electrolytes and vitamins may also help livestock return to normal. However, you should be prepared for the worst. If animals are injured, be ready to administer first aid or contact your veterinarian.

If animals are severely injured, call your veterinarian. Young animals are more susceptible to stress than older animals and may need more care.

Bad weather often causes pregnant females near term to give birth. So watch for new baby farm animals.

Clean up trash, limbs, wire, and damaged equipment that could harm livestock. Clear and repair damaged fences.

Spray livestock with insect repellent in case of floods to protect against mosquitoes that may carry disease.

Observe livestock for signs of infectious disease such as pneumonia or foot rot.

If you’ve lost animal(s), contact local veterinarians, humane societies, stables, surrounding farms, and other facilities. Listen to the Emergency Broadcast System (EBS) for groups that may be accepting lost pets or livestock.

If you find someone else’s animal, isolate it from your animals until it is returned to its owner or examined by a veterinarian. Always use caution when approaching and handling strange or frightened horses or livestock.

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**SURVIVAL SALSA**

*If the storm has knocked out your electricity and you are not able to cook here is a no-cook power outage recipe that is easy to make.*

Mix all ingredients in a large bowl. Sprinkle with grated cheese (if it’s been properly stored in refrigerator or in a cooler). Serve with tortilla chips or low sodium crackers. May also be used as a filling for a wrap or taco shell.

- 1 16oz can corn
- 1 16oz can black beans
- 2 oz pouches of chicken
- 1 16oz can of tomatoes/Rotel or Salsa
- 1 teaspoon black pepper
- 1 teaspoon garlic powder
- 1 teaspoon onion powder
- 1/2 teaspoon cumin, optional
- Dash chili powder, optional
- 1 8oz Mexican Cheese Blend (optional)
HIGH TUNNELS...
VERTICAL PLANTERS...
A DUO FOR HIGH
RETURNS
I stepped inside a structure, the shape of a tunnel, totally covered with a white material. On the inside were some of the largest luscious heads of lettuces that I have ever seen. They were not in the ground as is typical, but were cascading from several pots vertically stacked. The structure under which the lettuces were being grown is a form of protected agriculture called high tunnel or hoop house; and the stacking pots (in which the lettuces were grown) from which the lettuces emerged is called a vertical system. Alex Bolques, Ph.D., director at the FAMU Quincy Research Farm leads a team that is researching several production systems in high tunnel structures.

High tunnel or hoop house is a simple greenhouse-like structure without the elaborate heating and cooling systems of a greenhouse. They are plastic-covered structures that provide an intermediate level of environmental protection control compared to open field conditions. The design of the structure allows for the sides and end walls to be opened to regulate temperature.

A vertical stacking system is one which uses specialized containers that are vertically integrated in rows to utilize space and energy in an efficient manner.

Free from the elements, Cherokee, Tropicana, Magenta, Coastal Star and Nevada were the types of lettuce being grown in verti-gro’s vertical stacking pots. Each vertical tower consisting of four stackable pots, were anchored in a main pot by means of a pole (PVC pipe) running through the center. The lettuces were grown hydroponically. “Soilless media is used,” states Dr. Bolques. “In this case coconut fiber is layered over a bottom layer of fine pine bark. The pine bark actually helps to drain water so that the media does not stay wet and lead to root rot.”

Dr. Bolques explained that water containing nutrients is delivered from the top planter and then trickles down to the second, third, fourth and finally to the base pot. The water-nutrient application system is very efficient, and we currently run the system for a total of 15 minutes per day. Although nothing was planted in the base pot it is evident that the farmer has another opportunity to grow something else in that pot. A nutrient house which sits closely by the tunnel, house two tanks with fertilizer solution from which the lettuces receives water and nutrients. One tank contains calcium nitrate and the other contains a “premix” of a complete package of nutrients without calcium. Once concentrated nutrients are mixed in the tanks, the mix is injected directly into the water line that goes to the drip system, and eventually to the lettuces.

“Although the use of high tunnels are widely used and have been
around for a long time, it is not as popular in the North Florida area, therefore, it is important to conduct the research in the locale,” said Dr. Bolques. “There are several benefits to be derived from growing crops and vegetables in a tunnel structure coupled with a vertical planter system.” Floridians are among the growing trend who are taking an interest in knowing where their produce originates, the distance travelled from farm to market and the health benefits to be derived from fresh produce.

“Given the uptick of enthusiasm for fresh, local agricultural produce, growing certain crops and vegetables in tunnels combining the vertical planter system, would offer the farmer the edge along with several advantages and many additional benefits,” said Dr. Bolques. He stated “farmers would realize extended growing seasons; it would provide protection against problems associated with pests and diseases, thereby minimizing pesticide use, and that farmers would see increases crop yield, quality, and shelf life.”

The ripple effect from the benefits mentioned would allow the farmer to realize an increase in income and profitability. Due to earlier planting, extended production periods and better growing environments the grower is able to provide good produce to the market for a longer period of time; provide higher quality produce to the market because the damage caused by insect, disease, and environmental factors are reduced; and by providing good quality produce out-of-season the farmer is able to get premium price.

The benefits of vertical production systems are just as impressive. Scientists are concerned that by the next 30 years large amounts of farmland will be required to produce food to feed the population which is estimated to increase by three billion people. This means clearing of forest land and further destruction and environmental degradation. The verti-gro system that is being demonstrated, is able to grow and produce 16 heads of lettuce on a foot print of a 5-gallon container, which is less than one foot. Whereas, in the field this would be equivalent to approximately 16 linear feet. Farmers who do not have plenty of land-space at their disposal might find this system appealing. However, vertical production systems are also applicable in commercial and home farms. Depending on the crop, plant densities of 5 to 10 times that of growing in the field can be achieved.

Popular crops grown in the verti-gro planters include; strawberries, mustard greens, collard greens, kale, beans and peas, spinach, tomatoes, beets, sweet corn, rosemary, sage, thyme, basil and even horticultural crops such as petunias, summer daisy and pansies. The crops mentioned represent just a few of the crops that can be grown in the verti-gro planters. However, if crops are grown for commercial use then selection should be based on economic value to the business and market conditions.

Other production systems being researched at the FAMU Research Farm under high tunnel are nutrient film technique, ebb and flow, Dutch bucket and floating systems, also called deep water culture. Scotch bonnet peppers are also being grown under low tunnel protected system that are more economical to construct.

One of the goals of the Cooperative Extension Program at FAMU is to bring vital and practical information to agricultural producers, by educating farmers on business operations and modern agricultural science and technologies. It emphasizes taking knowledge gained through research and education, and bringing it directly to the farmers to create positive changes. The research taking place in the high tunnel using vertical planters are platforms being used by Dr. Bolques and extension agents in the CEP at FAMU to educate limited resource and other interested clientele on the technological improvements on production systems and the options available that would not be economically prohibitive to them.

For information, contact Alex Bolques at alex.bolques@famu.edu or (850) 875-8559.
Director of the FAMU Quincy Research Center, Alex Bolques, Ph.D. adjusting nutrient delivery system to the lettuce plants.
Publications

J. AGAR, M. SHIVLANI AND D. SOLÍS.

A. ANANDHI

A. ANANDHI AND C.E. BLOCKSOME

A. ANANDHI, N. OMANI, I. CHAUBEY, R. HORTON, D. BADER AND R.S. NANJUNDAH.

D. NANDKUMAR, D. SOLIS, M. H. THOMAS, S. ALVAREZ AND D. HARDING.

L.W. NGATIA, Y.P. HSIEH, D. NEMOURS, R. FU, AND R.W. TAYLOR.

Internships

CAFS students copped coveted internship spots over the summer. The students had the opportunity to gain experience, developed skills and made professional connections.

BOONES CHAMPA
Agri-business senior, interned at the U.S. Forest Service and received training in Alabama, California and Florida.

JEFF SUBER
Agri-business senior, interned at the University of Florida – Institute of Food and Agriculture Sciences (UF-IFAS).

JARED GRANT
Spring class of 2017, interned at Bayer – Environmental Science Marketing Excellence Internship Program.

GREGORY MCNEALY
Agri-business master’s student, interned at U.S. Department of Agriculture Economic Research Service (USDA-ERS) in Washington D.C.

KENDRA MCFARLAND, BIANCA MCCRAKEN, SARA PAGAN, TAMIA CAMPBELL, AND NAILAH WILLIAMS
Animal science seniors, interned at the University of Florida – College of Agriculture and Life Sciences, Department of Animal Science.

Congratulations Summer 2017 Graduates!

Gabrielle Dukes  B.S., Food Science
Hakeem Holmes  B.S., Agri-Business
Toni Nation  B.S., Animal Science
Ashley Stewart  B.S., Animal Science
Chelsea Sylvester  B.S., Animal Science
The Council on Food, Agriculture and Resource Economics, a non-profit organization dedicated to strengthening the national presence of the agricultural and applied economics profession, appointed Daniel Solis Ph.D., as one of its newest members to its board of directors. Solis, an assistant professor in the agri-business program was appointed May 2017. Of all the historically Black colleges and universities, Florida A&M University is the only one who has a director on the board.

Professor Peter Anyang’ Nyong’o, Ph.D., and Dorothy Winfred Nyong’o visited Florida A&M University, where they met with the Interim Provost Rodner Wright, M.Arch., and other senior administrators. Professor Nyong’o also visited the College of Agriculture and Food Sciences, where he made an informal presentation. Dr. Nyong’o is a professor of Political Science and a senator for Kisumu County, Kenya.

Peter and Dorothy are the parents of Oscar Winner, Lupita Nyong’o. Lupita won the academy award for best supporting actress in the Steve McQueen historical drama “12 Years A Slave” (2013).

Michee Lachaud, Ph.D., assistant professor in the agri-business program has been certified by the Office of Instructional Technology at FAMU as an e-learning instructor. This is in partial fulfilment of the agribusiness program strategic plan to develop and offer an on-line bachelor’s of science degree.

Rochard Moricette, freshman student in the agri-business program was named 47th Student Senate Pro Tempore to the FAMU Student Government Association Legislative Branch in May 2017.

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FRANK HUMPHRIES
CAFS spring 2017 graduate, was the third place undergraduate award winner at 1890 Association of Research Directors (ARD) Research symposium, which was held in Atlanta, Georgia, April 1 – 4. His oral presentation titled Developing cell and tissue culture systems and molecular cloning of Flavonoid 5-O-glucosyltransferase (5GT) gene from Rosa Hybrida.” was presented in the Plant Health and Production and Plant Products category.

JARED GRANT
Spring class of 2017, has been awarded a full scholarship to attend the University of Georgia in Athens, Ga. Jared has been accepted in the Master of Science in Agricultural Science Program.

AKILAH GEORGE
Spring class of 2017, has been named Food Service Specialist at the Florida Army National Guard.

OLIVIA ANTILLA
Summer class of 2016, has been appointed assistant women’s basketball coach at Anoka Ramsey Community College. Olivia’s appointment became effective September 2016.

AMONTE MARTIN
Fall class of 2014, has completed his master’s degree at Purdue University and has been accepted in doctorate program in Environmental Policy at the University of Florida.
Most Read and Cited Author

Anandhi Swamy, Ph.D., was named the most cited researcher in April and achieved most read author on FAMU’s campus on the week ending May 7, by researchgate.net. Dr. Swamy is an assistant professor in CAFS Biological Systems Engineering Program (BSE).

Emerging Researcher

Daniel Solis, Ph.D., was selected by his peers to receive the Florida A&M University Emerging Researcher award for 2016-2017. Dr. Solis is an assistant professor in CAFS agri-business program.

Animal Health Corner

- FAMU CAFS in collaboration with the Jefferson County Cattle Production group hosted an Animal Health Seminar on cattle and goats. The seminar was held in Wacissa, Florida, in May.

- Keawin Sarjeant, Ph.D., led a food safety workshop on Hazzard Analysis and Critical Control Points (HACCP), for students and other persons in the food safety industry. The workshop was held at the FAMU Research and Extension Center in May.

- CAFS students, faculty and staff participated with Gadsden County 4-H to execute health screenings for cattle at a local cattle show in March.

Retirement

Jean Beaudouin, Ph.D., in the College of Agriculture and Food Sciences retired after 31 years of service. The College extends a heart-felt thank you for his selfless efforts, hard work, dedicated service and contribution to CAFS – Animal Science and Cooperative Extension Programs. We bid him farewell and best wishes as he embarks on the next phase of his life.

Biological Systems Engineering (BSE) Corner

NINA FORD
Senior in the BSE program, presented a poster at the Florida Section of the American Society of Agricultural and Biological Engineers (FL-ASABE) Conference held June 22 - 24 in Jupiter, Florida.

KAYLA VALLE
Joined the U.S. Peace Corps and commenced her volunteer service in the Philippines in June 2017. Kayla graduated suma cum laude, spring 2017. She served as an officer in several student organizations including the National Society of Black Engineers (NSBE) and the American Society of Agricultural and Biological Engineers (ASABE).

SHANA BREWTON
A 2001 Biological Science Engineering (BSE) graduate, received her doctorate degree in Sociology in May 2017, from University of Maryland. She also served in the U.S. Peace Corp in the Cameroon, West Africa.
Congratulations

It is not very often that you have three staff members in the same department graduating at the same time, two with Ph.D.s., and the other with an Ed.D. The College of Agriculture and Food Sciences (CAFS) extends their congratulations to Carmen Lyttle-N’guessan, Sandra Thompson and Gilbert Queeley, who graduated spring 2017. All three are employees in the Cooperative Extension Program with forty one years of combined service in the program.

CARMEN LYTTE-N’GUESSAN, PH.D.
Research associate, earned her degree in Pharmaceutical Sciences specializing in Health Outcomes Research and Pharmacoeconomics, from the College of Pharmacy and Pharmaceutical Sciences at Florida A&M University. Her research is titled “Willingness-to-Pay for Early Diagnosis of Endometriosis to Reduce the Adverse Risk Outcomes: An Exploratory Discrete Choice Experiment.”

GRANT AWARDS

SUBRAMANIAN RAMAKRISHNAN, PH.D.
Associate professor, at the FAMU-FSU College of Engineering and principal investigator; and co-principal investigators, Tarik Dickens, Ph.D., assistant professor, FAMU-FSU College of Engineering; SATYANARAYAN DEV, PH.D., assistant professor, College of Agriculture and Food Sciences; Nelly Mateeva, Ph.D., associate professor, College of Science and Technology; and Mandip Sachdeva, Ph.D., professor College of Pharmacy and Pharmaceutical Sciences, were awarded a National Science Foundation grant in the amount of $5,000,000 to establish the Center for Research Excellence in Science and Technology (CREST), to study Complex Materials Design (CoMand) for Multidimensional Additive Processing.

ANANDHI SWAMY, PH.D.
Awarded a National Science Foundation grant in the amount of $488,455 to study sustainable food, energy and water systems. The duration of the grant is September 1, 2017 – August 31, 2022.

HARRIET PAUL
Awarded an 1890 University Foundation grant in the amount of $18,185 to train a globally competent workforce at the 1890 Institutions for Agricultural Foreign Services using multi-institutional approach.

MICHAEL THOMAS, PH.D.
Awarded a USDA-APHIS grant in the amount of $60,000 to study the economic impact of air-potato in Florida. The duration of the grant is from April 2017 - April 2018.

DANIEL SOLIS, PH.D.
Awarded a USDA McIntire-Stennis Program grant in the amount of $31,000 to study the impact of climatic effects on timber supply in Florida. The duration of the grant is June 2017 - June 2018. He was also awarded the USDA-ERS Program grant, in the amount of $31,000, to mentor graduate students in agricultural economics. The duration of this grant is April 2017 – April 2019.
Rozier William Crew, the first appointed USDA 1890 liaison officer, earned a bachelor’s degree in teacher education from Bowie State College and a master’s degree in Special Education from Temple University. He later earned a second master’s degree from Florida A&M University (FAMU) and then pursued coursework toward his doctorate degree in Adult Education.

He taught in both the Maryland and New Jersey public school system, before entering private industry in the field of training, research and development where he spent many years creating and implementing programs for governmental entities and private agencies throughout the Continental U.S. and the Virgin Islands.

In 1976, Rozier began working for the U.S. Department of Agriculture, Farmers Home Administration (FMHA); where he served in several training and administrative capacities until April 2007. Prominent among these were his assignments to open the first national training center for FMHA employees east of the Mississippi on the campus of FAMU; and his subsequent assignment as the first USDA 1890 liaison officer, stationed on the campus of FAMU. In that capacity, he mentored and shaped the careers of hundreds of college students who now serve our nation in several professional capacities.

Rozier leaves a legacy of hard work, perseverance and achievement that continues to shine bright at FAMU.

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**IN MEMORY OF**

**Rozier William Crew**

**HURRICANE**

CONT’D FROM PG. 41

resources for both protein intake and revenue generation could experience a devastating reduction in fish supply.

The impact of hurricanes to our food and water resources can be devastating. Fields of vegetable and tree crops can be affected directly or indirectly depending on the type of crop. They can be uprooted, broken, and lose their leaves and fruits. Young plants and damaged crops become more susceptible to pests and disease. Severe flooding cause by a hurricane can lead to fertile topsoil that is essential for crop production, being washed away into water bodies. Run-off water from the land and the eroded top soil carried into water bodies are rich in nutrients. The excessive richness of nutrients to the water bodies can cause eutrophication, which then leads to hypoxia, increase algal biomass, displacement of aquatic organisms and a rise in fish kill. This can lead to food scarcity, and a hike in prices of food that will be out of the economic reach of many.

With the passage of a hurricane, the surge of water has the potential to increase contamination by pushing large amounts of debris, contaminants, and toxins into the water supply, rendering it unsafe for consumption and other uses. Shallow unconfined aquifers also have the potential to be compromised with salt water intrusion, caused from storm surges.

With so many small island states being totally obliterated and other sections of the U.S. being impacted by these storms, humanitarian crisis is certainly a fear of many.
Discover Apple.
We’re looking for innovators like you.

Apple is a place where people from all backgrounds get together to do their life’s best work. Come join us. Become an Apple HBCU Scholar.

Apple, in partnership with the Thurgood Marshall College Fund (TMCF), is proud to present the Apple HBCU Scholars Program for outstanding students with a minimum 3.3 GPA who will be graduating between December 2018 and June 2019. Selected students will participate in a 12-week internship during the summer before their senior year. Based on individual financial needs, they’ll receive up to $25,000 in scholarship funding that will be applied to their final year of study. Each student will receive guidance from an Apple mentor throughout their experience, an opportunity to develop key skills and enhance their resume, and help with launching their career through one of the top companies in the world.

As part of the program, Apple HBCU Immersion will bring students to Cupertino for a seven-day introduction event to learn about Apple’s ecosystem and experience the Apple and Silicon Valley cultures.

For more information and to apply, visit Room 204 Perry-Paige Building South