

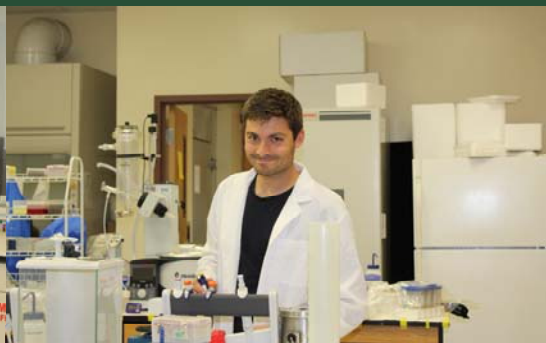
FLORIDA **A&M** UNIVERSITY

COLLEGE OF AGRICULTURE AND FOOD SCIENCES

# CAFS MAGAZINE



## Trailblazers



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# From the Dean's Office

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The festive season is a time when we reflect and a time when we express thanks, appreciation and gratitude. As the semester draws to a close and the winter break approaches, we should pause to reflect on all the blessings, achievements and challenges that this semester and year has brought us.

Together we have made significant steps forward in our land-grant mission, and together we will continue to achieve, embrace and face the challenges that lies ahead. Whether you are involved in teaching or learning; conducting research; outreach and extension activities; forging international linkages; or enrolled in the Navy ROTC, we are united in a common cause and to make a difference.

To our students who will be graduating in a few weeks, on behalf of the student body, faculty and staff, I say congratulations. We are beaming with joy for your accomplishments, and as you depart from a comfort zone you have been in for the past 4 years and set to begin a new era in your life, we expect you

to be the beacons that the world needs today. Challenges and uncertainties you will encounter but should never be seen as insurmountable, rather, in confronting these trials and uncertainties I implore you to draw on the many skills you have garnered during your period with us.

To our faculty, I commend you for the tremendous work you have done this semester and overall this year. You have been committed to teaching, research and our extension and outreach activities, and the many awards, accolades, and achievements by both faculty and students are a testament to your work. I am each day reminded by some act, small or large, of how much the College depends on our Staff you to carry out its mission as a land-grant institution. Many of you go beyond your call of duty to help the students and each other to ensure that the work of College operates more smoothly for everyone. To our students who will return in the Spring of 2017, greatness is your destiny as you continue and pursue a path of excellence. To our longstanding and highly regarded faculty and staff who have retired, I am thankful for what you have done

to help build strong programs and ensured CAFS remained on the map. Alumni, family and friends you were also a part of our success, and I am grateful for the tremendous support you gave to us.

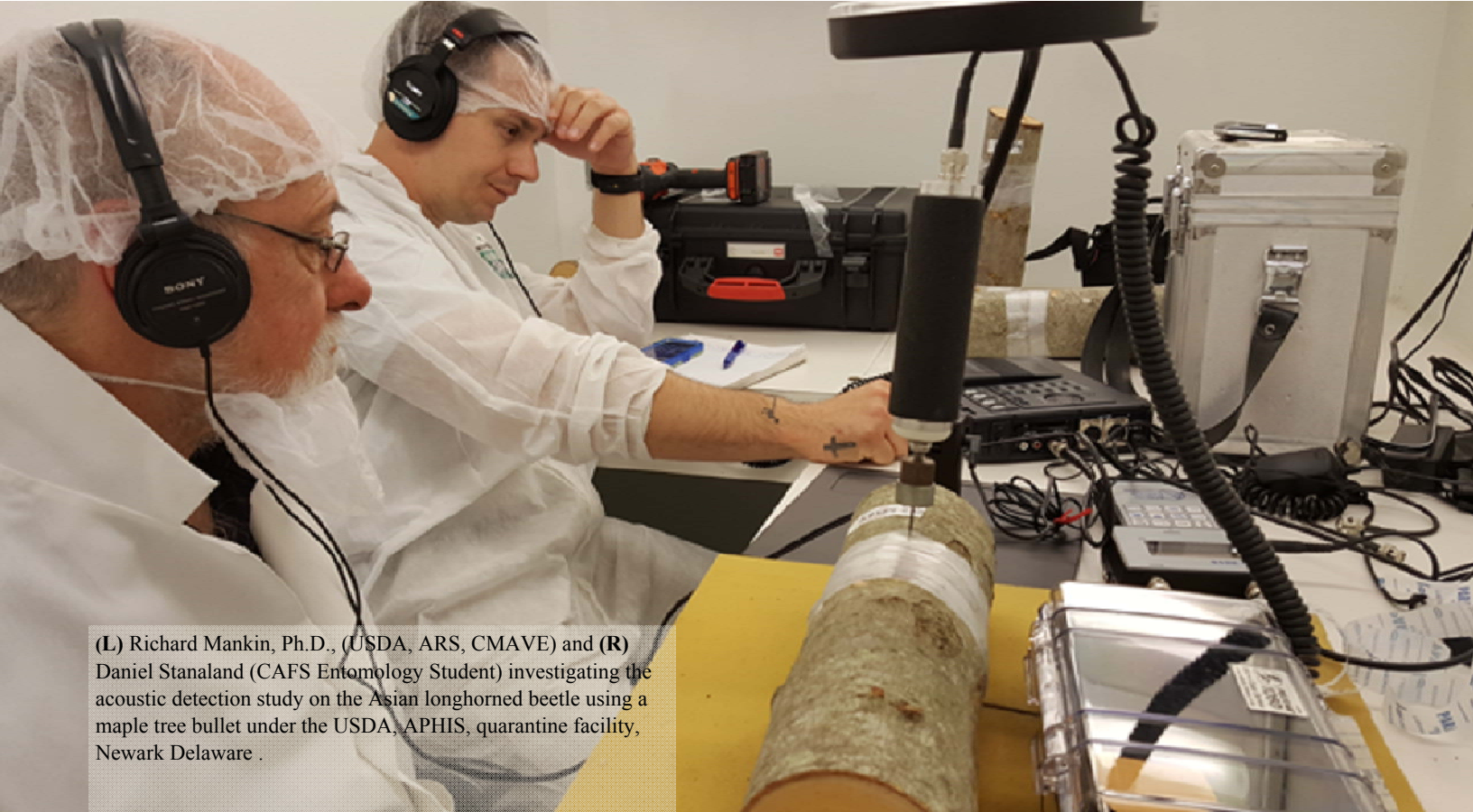
Thank you all, for a good year of teaching, advising, research and service as our combined success is attributed to the success of everyone. As we look forward to the journey that lies ahead, it is my hope that 2017 will bring new growth and even more unity to our College and together we will reach higher heights.

I wish for you and your families a healthy and peaceful holiday season and a very happy new year.



*Robert W. Taylor, Ph.D.*

Dean, College of Agriculture and Food Sciences



(L) Richard Mankin, Ph.D., (USDA, ARS, CMAVE) and (R) Daniel Stanaland (CAFS Entomology Student) investigating the acoustic detection study on the Asian longhorned beetle using a maple tree bullet under the USDA, APHIS, quarantine facility, Newark Delaware .

## New Research Project on the Asian Longhorned Beetle Initiated this Year: National and International Collaborations

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The Asian longhorn beetle (ALB), *Anoplophora glabripennis* (Motschulsky) is a polyphagous pest of healthy hardwood trees. The beetle was first discovered in Brooklyn, New York in 1996 damaging Norway maple trees and was probably introduced with solid wood packing material from China. According to an estimate, the maximum potential urban impact of this pest in the United States could reach a loss of nearly 35 percent of the total canopy cover including 30 percent tree mortality (1.2 billion trees) and a value loss of \$669 billion. The ALB is indigenous to Japan, Korea, and China. It is regularly intercepted at ports of entry into the United States as it emerges from wood used for pallets and packing materials. In the United States, this serious invasive pest has been found infesting 21 species of hardwoods across 12 genera. The current study is being conducted to detect, monitor, and manage this invasive species in the event that this serious potentially invasive pest invade Southeastern states, especially Florida. In May 2016, Muhammad Haseeb, Ph.D., (Center for Biological Control, CAFS), Richard Mankin, Ph.D., (USDA, ARS, CMAVE, Gainesville, Fla.), Daniel Stanaland (master's student in CAFS Entomology), and Jian Duan, Ph.D., (USDA, ARS, Beneficial Insect Introduction Research Unit, Delaware) conducted a joint study on the acoustic detection of the ALB under quarantine conditions. The preliminary results indicate that ALB larvae can be detected with a high accuracy of vibration sounds on infested maple logs. Further study under field conditions is planned this year. Also, this summer, Haseeb traveled to Beijing China to explore the ecology and management strategies against this serious pest in native range. A survey on the ALB was carried out South of Beijing on populus and willow trees in collaboration with Runzhi Zhang, Ph.D., the Institute of Zoology, Chinese Academy of Sciences. In China, most of the susceptible varieties of populus and other host trees of the ALB are being removed from urban and rural settings, and being replaced by ALB resistance tree. Study on the monitoring tools especially the use of traps to monitor ALB under field conditions is planned in the United States. This project is funded by the USDA, Forest Service (McIntire Stennis Program).

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By Muhammad Haseeb, Ph.D.

## Dean Robert Taylor Invited to 2016 World Food Prize Laureate Announcement Ceremony

Robert Taylor, Ph.D., dean of the College of Agriculture and Food Sciences (CAFS) at Florida Agricultural and Mechanical University, under the invitation of Ambassador Charles H. Rivkin, assistant secretary of State for Economic and Business Affairs, attended the 2016 World Food Prize Laureate Announcement Ceremony in Washington D.C. on June 28. The World Food Prize (WFP) was conceptualized and conceived by 1970 Nobel Peace Prize Recipient Norman E. Borlaug, Ph.D. The WFP recognizes contributions in food and agriculture science and technology, manufacturing, marketing, nutrition, economics, poverty alleviation, political leadership, and the social sciences, and basically any field involved in world food supply. The WFP emphasizes the importance of a nutritious and sustainable food supply and since 1968 has been honoring individuals worldwide who have worked successfully toward this goal. The Prize brings attention and focus to work done to improve global food security and highlights that can be accomplished in the future. The World Food Prize annually hosts the

Borlaug Dialogue International Symposium, which brings together experts to discuss cutting-edge issues in food security, and youth education programs to inspire young people to become engaged in agricultural studies and research on a global scale.

The theme for the 2016 World Food prize is “Let Food be thy Medicine” and best captures the ground-breaking achievement for which the four Laureates are being honored. The honorees are Maria Andrade of Cape Verde, Robert Mwangi of Uganda, and Jan Low and Howarth Bouis of the U.S. Their research and work is geared toward the development and implementation of biofortification, breeding critical vitamins and micronutrients into staple crops, which have positively impacted more than 10 million people and the potential of several million more who will have their nutrition and health enhanced thereby dramatically reducing “hidden hunger.”

Florida A&M University, a land-grant University and a leading HBCU offers through its College of Agriculture and Food Sciences’ (CAFS)

cutting edge academic, research, extension, and outreach programs in contributing to global food security. This invitation to Dean Taylor shows FAMU’s merit in this field and that CAFS programs continue to have national and international recognition and is in keeping with President Mangum’s “Forever Forward” Strategic Plan. It is noteworthy to mention that FAMU was the only HBCU in attendance. The keynote speaker was The Honorable Gayle E. Smith, administrator of the United States Agency for International Development. Also in attendance were Principal Deputy Assistant Secretary for the Bureau of Economic and Business Affairs, Kurt Tong who hosted the event; Special Representative for Global Food Security Nancy Stetson who delivered remarks and greetings on behalf of U.S. Secretary of State John Kerry; and former U.S. Ambassador to Cambodia, Kenneth M. Quinn who announced the honorees. This year marks the 30th anniversary of the establishment of the World Food Prize.

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### Graduate Students Publication: Their Position

The College of Agriculture and Food Sciences Entomology graduate students Julius Eason, Netalie Francis, Tavia Gordon, Edidiong Lnyang, and Whitley Stewart published a positional statement entitled “What is the single best tool to reduce malaria? DDT.” With assistance from their advisor Raymond Hix, Ph.D., the paper was published in the summer 2016 issue of the American Entomologist. All the students, except Whitley, graduated before publication of the paper.

### 4-H Youth Program

The Florida A&M University College of Agriculture and Food Sciences Cooperative Extension 4-H Youth Program partnered with the Havana Magnet School for the 21st Century Community Learning Centers Program (CCLC) of Gadsden County. The summer program introduced grades K- 6 students to money management and financial literacy, entrepreneurship, food nutrition, health education, etiquette, and water quality. The program was held at the East Gadsden High School in Quincy, Florida, June 16 - July 21.



# Summer Programs

Ag-Discovery Summer Program →



The Ag-Discovery Program is an outreach program designed to help students, ages 12-17 years old, learn about careers in different agricultural disciplines such as plant and animal science, and agribusiness. The program gives the students an opportunity to experience life on a college campus and learn about agricultural career options from University professors, including veterinarians (practicing and clinical), animal scientists/specialists, plant scientists/botanists, and other related professionals working in the public and private sectors.

The Ag-Discovery Summer Program, which is offered through the College of Agriculture and Food Sciences at Florida A&M University (FAMU) is one of several campuses that hosts the program annually. The FAMU's campus session gave students the exposure to some of the various opportunities in animal science and veterinary medicine, with the aim of helping them better understand and refine an agricultural career path. A total of 19 students, ages 14 - 17 years old, completed the camp, which ran from June 5 - 8, 2016.

The participants learned the science through hands-on activities, such as lab and field activities. They worked 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: 1) a two-day stay at the University of Florida experiencing careers in veterinary medicine from their College of Veterinary Medicine; 2) a day at the Tallahassee Animal Service Center learning about shelter medicine, animal control, and surgery relating to small companion animals; 3) a day at the Florida Capitol and meeting with the Division of Animal Industry; 4) two days at the FAMU Extension and Research Center with veterinary professionals learning about animal health through examina-



tion of animals and examining samples under microscopes; 6) a visit to the Gulf Specimen Marine Laboratory learning about marine life; and 7) a mini-career fair held for the first time as an extension that exposed the students to disciplines in the College of Agriculture and Food Sciences (CAFS) and workforce opportunities.

Evaluation and feedbacks of the program from both students and parents were favorable. In an evaluation of the program, 100 percent of the students agreed that the program met their learning expectations. The parents were also satisfied and happy about the opportunities the Ag-Discovery Program provided to their children. One parent wrote that her child was motivated to attend FAMU, and it is expected that other students from the program will enroll in CAFS. The Ag-Discovery team and CAFS felt elated that the program objectives were met by increasing the knowledge of the students about agriculture and its various fields, and helping them in determining a career choice.

The Ag-Discovery Program, which was free to participants, was jointly sponsored by FAMU and the U.S. Department of Agriculture (USDA), Animal and Plant Inspection Service (APHIS).

By Carmen Lyttle-N'guessan



# Summer Programs

Entomology Insect Science  
Summer Camp





The College of Agriculture and Food Sciences, through its Cooperative Extension Program, held its first Entomology Insect Science Summer Camp (EISSC) from June 13-17. The camp was specifically designed for elementary school students, grades 2-5. The inaugural program had 16 students who participated, not only from Tallahassee and its environs, but from as far as Panama City, Fla. The overall goal of the camp was to give students an introductory insight into entomology and provide hands-on activities to explore the wondrous world of insects and the role they play in the environment. Throughout the one-week program, under the tutelage of Coordinator Sabrina Hayes, the students learned about insect biodiversity and made individual insect collections by pinning insects they collected on FAMU's campus and from their homes. Students also learned about invasive species such as the Kudzu bug and Red Bay Ambrosia beetle.

The students were very interactive in the various class and experimental activities discussions, as they demonstrated their wealth of knowledge amongst their tutors and peers. The students were excited about sampling cookies made from crickets. Some of them were surprised to have learned that some insects were edible and could be used to make one of their favorite treats. The week of activities came to a close with a review of all the material covered in the format of a Jeopardy style game show.

The first EISSC received rave reviews from students and parents, with enquiry being made about its offering for next year. The program helped students develop their critical thinking and enhance their social skills. The program offers an exciting way of getting elementary students to appreciate and realize the significance of insects and the role they play in our everyday lives, and for them to see and be able to make the relationships with entomology and other disci-

plines.

If you or someone you know is interested in participating in the program next year, contact Sabrina Hayes at [sabrina.hayes@famu.edu](mailto:sabrina.hayes@famu.edu).

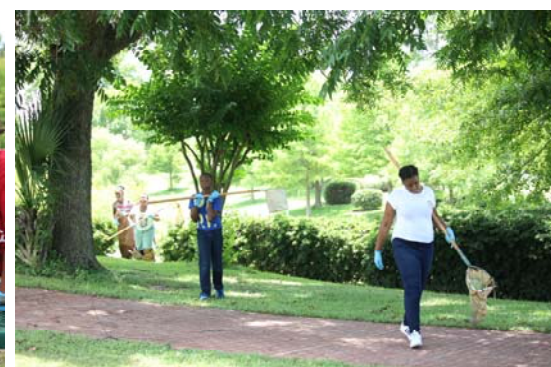
By Sabrina Hayes





# Summer Programs

AG-Tech Century 21  
B-WET Sky To Sea



## 2016 Ag-Tech Century 21 Summer Program

Florida A&M University (FAMU) Ag-Tech Century 21 is one of several summer programs offered in the College of Agriculture and Food Sciences (CAFS). It is an annual summer outreach program geared towards providing exposure to middle and high school students, ages 13-17 years, to careers specifically in animal science and related field such as veterinary medicine.

The summer program, which was funded by the U.S. Department of Agriculture National Institute of Food and Agriculture (USDA-NIFA), had 11 students that participated from Tallahassee and surrounding communities. The one-week program, which was held from July 10 -15, is used as a recruiting effort for FAMU's College of Agriculture and Food Sciences programs.

Students had an opportunity to work with various species of animals and

attended field trips to animal industries in north Florida, south Georgia, and Alabama. The experiential highlights of the Ag-Tech Century 21 program were:

- A day at the Florida Capital and 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;
- A visit to the Tallahassee Museum learning about mammals, reptiles and birds in their natural habitats;
- A visit to a dairy production and

processing facility learning about dairy cattle and milk production and processing; and

- A visit to the zoo learning about animal care in the industry setting and getting exposure to various wildlife species.

The summer activities ended with a closing ceremony where participants were presented with certificates of participation. Students and parents used the opportunity at the closing ceremonies to express their appreciation and thanks to CAFS for having delivered and met its objectives. The student's evaluations and feedback showed that the program met their learning expectations about options in animal science and veterinary medicine, and that the program would indeed help them to decide whether to pursue a career in the field of animal science.

By Carmen Lyttle-N'guessan

## B-WET Sky To Sea Summer Program

The Florida A&M University Gulf of Mexico Bay – Watershed Education and Training Program (B-WET): Sky to Sea Summer Program is a hands-on, inquiry-based program designed to increase student understanding of the hydrologic cycle as it relates to the journey of water within a coastal watershed to the Gulf of Mexico.

The summer program, which was offered through the College of Agriculture and Food Sciences (CAFS) - Center for Water and Air Quality (CWAQ), was held June 20 – 24, with 12 students participating. The week of summer activities were funded by the National Oceanic and Atmospheric Administration (NOAA) and the Gulf of Mexico Bay – Watershed Education and Training (B-WET) Program. Since the inception of the program three years ago, a total of 47 students have enrolled and participated in the program.

The students were taken on several field trips where they learned about

different features of the watershed and were able to collectively trace the flow of water through the various watersheds to the Gulf of Mexico. One of the field tours "Journey of the Water" investigated the flow of surface and ground water within a coastal watershed starting upstream. The students followed the path of storm-water collected at Cascade Park ponds to its end point at Wakulla Springs. They had an opportunity to experience a river boat tour of the Wakulla Springs, which is one of the largest and deepest freshwater springs in the world. On the tour students learned about the native species of flora and fauna in the spring. They also visited the Bear Creek Education Forest where they participated in natural resources and forestry related activities. At the Gulf Specimen Marine Lab, the students seined in the nearby salt marsh and collected various species of fish, jellyfish, shrimp, and crab. They also visited the Apalachicola National Estuarine

Research Reserve in Eastpoint, Florida. The highlight of the week was the expedition along the Apalachicola River and Bay on the Reserve's vessel, the Tideline. During this visit, students received a better understanding of the connectivity between upstream activities and downstream impacts.

The week-long program of theoretical, practical and demonstrative activities, and excursions was designed to foster stewardship and conservation of our local water resources and to make the students aware of how their actions can impact the watershed. NOAA B-WET is an environmental education program that promotes locally relevant, hands-on learning about local watershed environments. Kimberly Davis, environmental education coordinator; Christy Crandall, hydrologist; and Brianna Stewart, student assistant, served as CAFS program facilitators for the week of activities.

By Kimberly Davis

## The Food Science Summer Enrichment Program (FSSEP)

The College of Agriculture and Food Sciences through its Cooperative Extension Program held its 4th annual Food Science Summer Enrichment Program (FSSEP), which ran from June 6-10, 2016. The camp, which is specifically tailored for middle school students, had an enrollment of nine participants. The program was designed so that at the end of the one week, students would have had an appreciation and developed an understanding of the sciences through experimental learning activities in food science that are linked to the Sunshine State Standards.

Although the camp was geared mostly towards exploratory and experiment-based projects, Conchita Newman, camp coordinator made sure that the students had an opportunity to engage in other diverse and fun-filled activities. Some of the experiments that the students were engaged in included testing the role of breadcrumbs effect on the texture, taste, and appearance of meatloaf; and evaluating the color, texture, and taste of macaroni and cheese using different types of milk. One exercise the young minds found interesting and intriguing was the entomophagy activity, which is the human

consumption of insects as food. With taste buds and palate prepared, students were given “Cricket Cookies” to sample and rate, using the 9-point hedonic scale with nine being, “liked very much” and one being “dislike very much.” Amazingly, the children enjoyed this twist on an old favorite.

Jenelle Robinson, Ph.D., food science faculty, covered nutrition education with specific emphasis on the different types of milk, nutrient content, and alternative sources to the traditional cow’s milk. The students were able to make smoothies using different types of milk and then determine the outcome of taste, flavor, and consistency of the beverage. Anthony Ananga, Ph.D., faculty member at the Center for Viticulture and Small Fruit Research, also conducted experiments with the students. Dr. Ananga demonstrated DNA extraction and how it is used improve fruit cultivars. In addition to lab and classroom activities, the students got the opportunity to visit and see the inner workings at two food processing plants - Flowers Bakery in Thomasville, Georgia and Southern

Craft Creamery in Marianna, Florida, as well as the Ice River Springs Water Company, a water bottling plant also in Marianna, Florida.

Since inception, the FSSEP has had a total participation of 46 middle school students, not only from the Tallahassee area, but from as far as Virginia. The program has engaged students in hands-on food science research and provided them with unique experiential-learning opportunities to develop their critical-thinking and learning skills. The program has directly and indirectly exposed middle school students to the role food science plays in global food security. It was also an exciting way of getting them to appreciate and realize the significance and make the connection between food science and other disciplines such as entomology and agriculture.

Do you know someone who will be interested next year, or do you have children you would like to participate? If so, contact Conchita Newman at 850-599-8110.

By Conchita Newman



## Providing Cutting-Edge Research Experience

Violeta Tsoleva, Ph.D., professor and director of the Center for Viticulture and Small Fruit Research, is a firm believer that when students get a chance to do undergraduate research it has a long-term impact on their career development. The Center for Viticulture & Small Fruit Research provides academic service and experiential learning and training for graduate, undergraduate, and high school students. It is a proven concept that undergraduate students who are engaged in experimental and research work excel both academically and professionally as well. However, in-order to gain a position to do undergraduate research in the Center, one major condition is to have a 2.5 GPA or better. “Doing undergraduate research is a good thing, but it is a luxury if you cannot carry and maintain your grades. It requires an extra commitment, which means being in the lab late at night and sometimes on weekends.”

The Center for Viticulture is one of the magnet Center’s in the College of Agriculture and Food Sciences (CAFS), and over the years has provided the platform for graduate and undergraduate research, and engaging research through various summer programs for high school students. Exposing high school students to research can be a catalyst to recruit top students.

“I don’t believe that undergraduate work study students should just send faxes, answer the phones or be on the computer. In the Center they are given their own small research projects, which really gives them experience and confidence that will be useful wherever they go allowing them to perform and hit the ground running” states Dr. Tsoleva.

The dynamic environment and unique mixture of senior and junior faculty, post-doctoral researchers, graduate, and undergraduate student researchers makes the College of Agriculture and Food Sciences – Center for Viticulture and Small Fruit Research a fertile ground for high achievers.

Dr. Tsoleva has been in the Center for more than 16 years and constantly boasts about the students who have conducted research in the Center and successfully graduated from the College. Many of them have gone on to further their studies, while others have been gainfully employed in academia, government, and the private sectors, both nationally and internationally. CAFS continues to offer excellence in academia and innovative and cutting-edge research.



## Life in the College of Agriculture and Food Sciences



**Mariah Brooke Henry** had just completed her first semester as a biology student, when she began to explore opportunities that would be available to her at Florida A&M University. Given her love for the environment, she knew she wanted to pursue a path where she would be able to take courses in that area. Mariah found out about the College of Agriculture and Food Sciences from her friend who was enrolled in the forestry program, and all the exciting work she was doing in the classroom and in the field. Taking a brave step, she visited CAFS to learn more about the majors being offered. A faculty member explained in detail what each major entailed. She recalls him telling her that declaring a major in agronomy would teach her how to take a crop from seed to harvest and a major in agribusiness would teach her how to take produce from harvest to

the kitchen table. Although the decision was difficult, she decided to switch her major to agribusiness. Being an agribusiness major, she enjoyed learning about agriculture economics, and meeting and interacting with local farmers about the business operations of their farms.

Although she was pleased with her major, Mariah felt the need and the desire to incorporate more of the agricultural science courses so the summer before her sophomore year, she became an agronomy major. Mariah saw it as a strategic move that would assist her in achieving a short lived dream of hers, which was to become a sustainable cosmetic dentist. Many of her colleagues could not understand the route she decided to take, but Mariah had several ideas on how she would make the dental industry, not only environmentally friendly but also healthier for her

patients. She stated that she wanted to take a holistic approach to dentistry and to do something revolutionary by using medicinal plants and sustainable practices.

The dream of being a sustainable cosmetic dentist was short-lived after participating in several study abroad programs sponsored through the Office of International Agriculture Programs (OIAP) headed up by Harriett Paul, director. Her first study abroad program took her to Vienna, Austria. There she met Anthony Ananga, Ph.D., a CAFS faculty member in the Center for Viticulture and Small Fruit Research, who was a guest lecture at the University of Natural Resources and Life Sciences, Vienna. Dr. Ananga invited her to visit the Center for Viticulture upon her return to see and learn more about the various research that was being conducted, with the hope that she

would join their undergraduate research team. She was nervous about taking on research, but his discussion about the benefits of doing research and the exposure and opportunities it would provide, such as attending and presenting at conferences, and being included in publications, bolstered her confidence. Upon her return from Vienna, she joined the team at the Viticulture Center where she worked on a research project titled “Molecular Identification and Detection of *Eutypa lata* in Muscadine Grapes (*Vitis rotundifolia*)” until her graduation April 2016.

Mariah described her senior year as one where she had to once again make career decisions as she became more and more exposed from participating in several study abroad programs. The programs greatly impacted and expanded her view on cultures and agriculture, and the need for greater business development. During her study abroad trip to South Africa, she was given the opportunity to work at Seven Sisters Winery, a woman-owned business. After realizing that there was no marketing plan for the business, she took it upon herself to prepare one. It was then that she realized her potential. Upon her return, during the fall semester of her senior year, she was inspired to tap into her hidden talents and her new found desire to become an entrepreneur. She believed that combining her agricultural sciences background with business could be her recipe for success. Therefore, having a deep love for agriculture production, environmental studies, marketing, and business, Mariah felt the need to incorporate them all academically. In her last semester Mariah changed her major to Interdisciplinary Studies of Science. This allowed her to take courses such as environmental ethics, environmental risk management and policy, which

she believes will aid her progress in her new journey ahead.

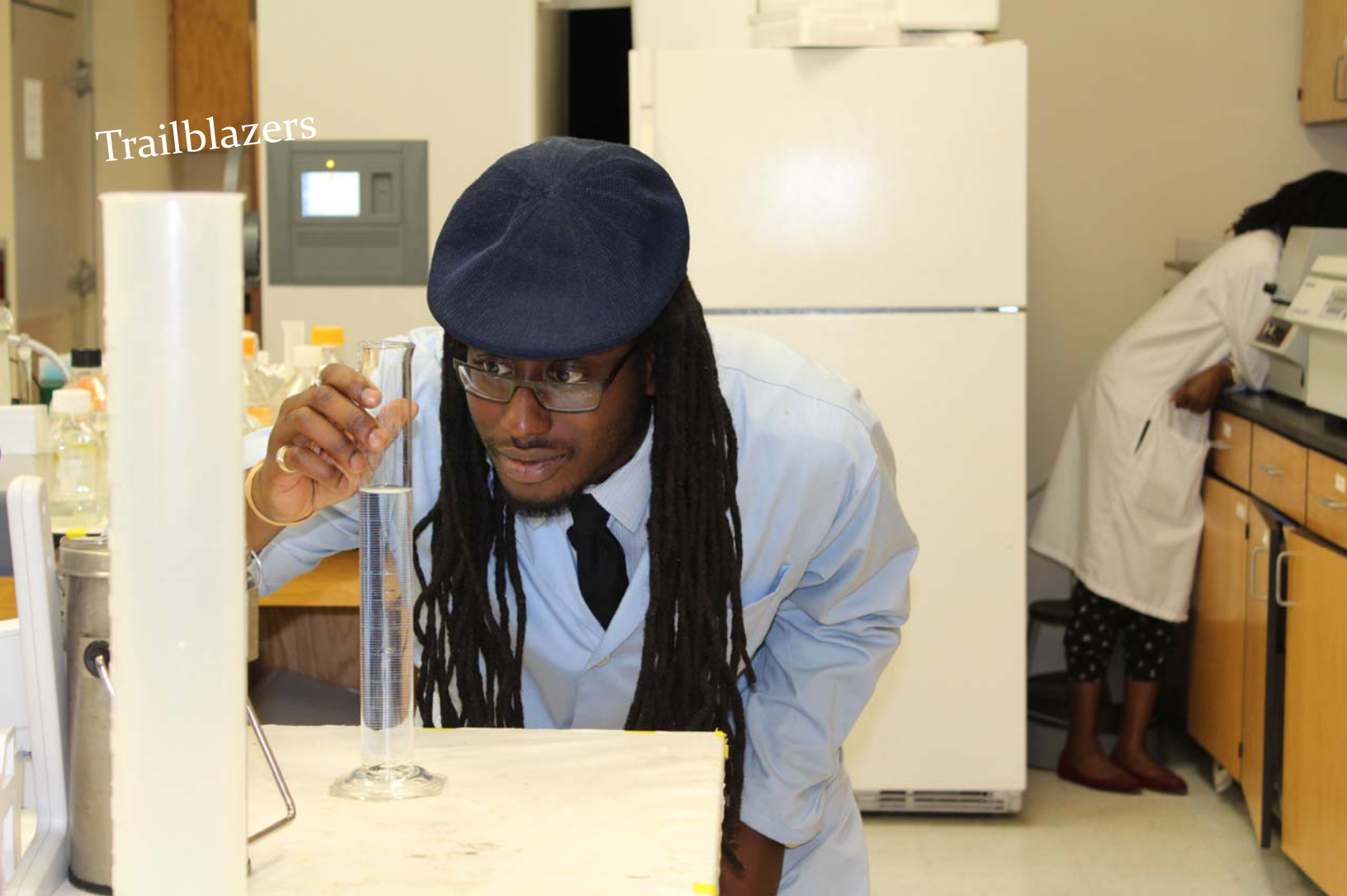
During her last semester, with all her passion and desires she began to explore what the University, City of Tallahassee, and the world had to offer for someone with her interest. Upon the recommendation of Violeta Tsoleva, Ph.D., she applied for a scholarship and was accepted to attend the Women’s Business Enterprise Council, a student entrepreneurial program, which was held June 2016 in Orlando, Florida. She also applied for the HBCU Bridge Program with the University of Chicago to pursue a graduate degree was accepted.

Looking back at her academic path and the many opportunities she had, Mariah states “My journey in the College of Agriculture and Food Sciences and conducting research at the Center for Viticulture has been one filled with opportunities. The journey was awesome, inspiring, and though challenging, I had the support of a great team of mentors and the faculty in CAFS. Being an ordinary “classroom student” was not going to cut it for me. I had the attitude and aptitude to do more and be more.” Mariah was involved in various organizations and clubs. She was Miss Sophomore for CAFS, a member of Minorities in Agriculture, natural Resources and Related Sciences (MANNRS), the Agriculture Science Club, a CAFS ambassador, an undergraduate researcher at the Center for Viticulture and Food Sciences, and by maintaining 3.3 GPA, accepted an invitation to join the Alpha Kapa Mu Honor Society where she became the vice president for the 2015-2016 academic year. Mariah was also the vice president of FAMU Green Coalition, an international scholar, and a member of the Citizen’s Climate Lobby in

Tallahassee. Making full use of all opportunities presented, she completed her fourth and final study abroad trip to Costa Rica in the summer 2016.

As a freshly minted alumna, Mariah encourages incoming freshmen to get involved in the various clubs in their colleges and disciplines, as it is one of the gateways that can open a world of opportunities. “Try something you have never tried before, take risks.” She implores juniors and seniors to get involved in undergraduate research as it helps to hone practical skills. She believes that only participating in theoretical classes and not getting hands-on experiences such as research, are key to landing the right job as job seekers are looking to employee persons who have at least 3 years of working experience. Mariah is emphatic that her journey in CAFS and the hands-on experience gained at the Center for Viticulture, have equipped her to tackle and rise above all the challenges that the competitive graduate program at the University of Chicago will throw her way. “I know I will have to keep up the pace, but I am prepared as the research professors in Viticulture and faculty in CAFS have inculcated a winning spirit in me” she said.

Mariah started her MBA degree at the University of Chicago in August.



## CAFS Provides Life-Changing Research Opportunities for Students

**Quincy Hardy's** journey at FAMU started when he enrolled on a scholarship for track and field, and football, however he was unable to accept the scholarship offer as he was missing a few of his high school transcripts. His dad was in the military, which had them moving from place to place. Since he had already started college, he thought it would be in his best interest to utilize the opportunity. It was while looking for classes to register for that he stumbled upon food sciences. "I felt that I could make a career out of food science because I saw it as a well-rounded interdisciplinary field, I could switch it up, and branch into other things if I so desired," said Hardy.

Students majoring in Food Science are mandated to do an internship to satisfy their graduation requirements. Due to a partnership with the College of Agriculture and Food Sciences (CAFS) and the University of Delaware, Quincy was given the

opportunity to attend a seminar pertaining to the National Science Foundation (NSF) – Experimental Program to Stimulate Competitive Research (NSF-EPSCoR), which was hosted by the University of Delaware and the NSF. With the knowledge in hand, he applied to and was accepted to participate in the internship program at the University of Delaware in the summer of 2014. During that summer he worked under the tutelage of Rolf Joerger, Ph.D., where his research project focused on the investigation of two (2) common salmonella species associated with food contamination.

Upon returning from his internship at University of Delaware, Robert Taylor, Ph.D., dean of the College of Agriculture and Food Sciences thought it prudent to keep him active in research to further build upon his lab techniques and research experience. He was given an undergraduate research position in the Food

Microbiology Lab where he worked and was amply guided by Keawin Sarjeant, Ph.D., investigating the microbial loads of local produce in areas of different demographics, and also studied the activity of mushroom mycelium on different growing media.

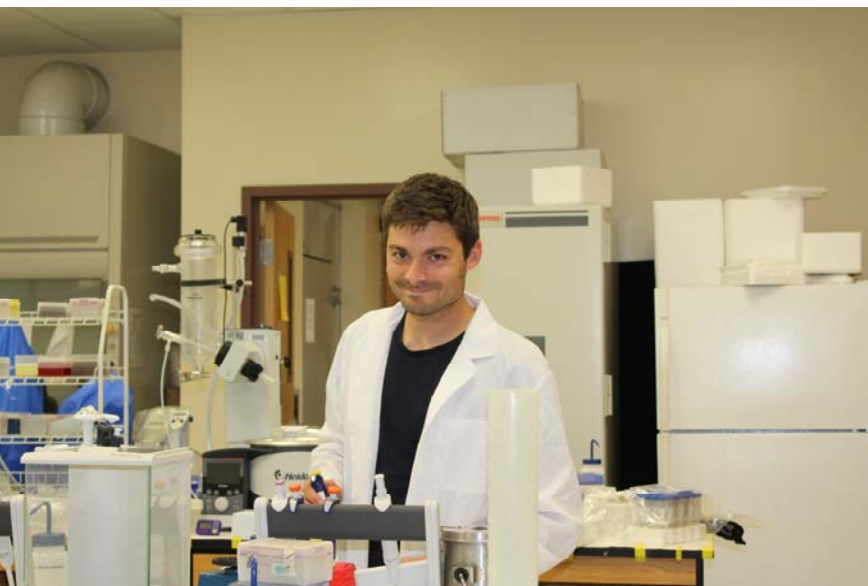
Summer of 2015 he returned to the University of Delaware under the same program, but this time he conducted preliminary research on the formation of *listeria monocytogenes* biofilms. After hearing about his internship experiences and research he had done in the Food Microbiology Lab, he was asked by Violeta Tsolova, Ph.D., and Anthony Ananga, Ph.D., to join the team of undergraduate researchers at the Center for Viticulture. Eager as he was to participate in other areas of research and broaden his knowledge base, he jumped at the opportunity. At the Center his research project focused on the characterization and



cloning of Luecoanthocyanin dioxygenase (LDOX) and Anthocyanin synthase (ANS) genes in Muscadine grapes (*Vitis Rotundifolia*).

Reflecting on his time spent at FAMU and in the CAFS, Quincy cannot say that it was always an easy walk in the park, he now chuckles as he reminisce on the several offices he had to visit, many forms to sign, and staff to see regarding his financial aid. He speaks about the hard work, long hours, dedication, and sacrifice that he had to make, but never forgetting the support, guidance, and mentorship he received from the CAFS faculty, "they believed in me," he said. Quincy held active membership in Minorities in Agriculture, Natural Resources and Related Sciences (MANNRS), and the Food Science Club and attended and participated in several conferences and symposiums.

The opportunities afforded to him in the CAFS, laid the ground work, built his experience, expanded his skills, gave him the confidence, and bolstered his credentials to get accepted into a graduate Food Science Program at University of Delaware. The techniques and protocols learned while doing undergraduate research has exposed him to a wide variety of practices that can be used throughout different disciplines and fields, and has prepared him well for graduate school.



## Undergrad Researcher

faculty member in CAFS. As usual the

research and teaching faculty in the Center are always scouting out top undergraduate performers to get involve with research. Although Frank had a work-study job, answering the telephone, and filing documents, he wanted and was eager to get involved in a more rewarding project.

Frank's research entitled "Characterization and molecular cloning of flavonoid 3-O-glucosyltransferase (3GT), and flavonoid 5-O-glucosyltransferase (5GT) genes from cell lines of rose (*Rosa hybrida*)" looks at the genetics of roses and the biosynthetic pathway for anthocyanin production. He examines the DNA and RNA of the rose to determine how they correspond to expressing traits such as color. "The opportunity in the ornamental industry from this type of research is endless, people love owning and buying beautiful flowers,

so the ability to genetically engineer roses to bloom whatever color you want would be pretty awesome," he said.

Before working at the Center for Viticulture, Frank was indecisive about further academic studies. However, his mentors Drs. Ananga and Tsoleva, and the rest of faculty has motivated and pushed him to develop himself, to aim for the top and to be the best he can. After graduation he intends to pursue a master's degree. He has been researching several graduate programs and has so far visited the University of Georgia where he made contact with CAFS alumna Safira Sutton, who was also a graduate researcher at the Center for Viticulture and Small Fruits Research.

**Frank Humphries** is a senior in the College of Agriculture and Food Sciences (CAFS) and will be graduating fall 2016. Frank started his undergraduate studies at Tallahassee Community College (TCC) with hopes of becoming an engineer. However, as he progressed he realized that a profession in the field of agriculture was more in tune with what he wanted to do. After learning about the scholarship opportunities for transfer students from Alfredo Lorenzo, Ph.D., and Janice Peters during a CAFS recruiting session at TCC, he transferred to FAMU-CAFS in the fall of 2014.

It was not long after Frank was offered an opportunity to join the undergraduate research team at the Center for Viticulture and Small Fruits Research. This opportunity came after acing a class he had taken with Anthony Ananga, Ph.D., a



## Alumni Spotlight...Safira Sutton

A successful career in academia was not always at the forefront of what Safira Sutton wanted to do with her life. Having a love for basketball, her desire was to be one of the first women in the National Basketball Association (NBA) before the Women's National Basketball Association (WNBA). She didn't realize how important education was, but as she got older she got insight into reality... she had an epiphany!

Upon completion of her Bachelor of Science degree in Plant Science from Fort Valley State University, she enrolled in the Plant Science master's program in the College of Engineering, Sciences, Technology, and Agriculture (CESTA), now known as the College of Agriculture and Food Sciences (CAFS). Safira was afford-

ed the opportunity to carry out research at the Center for Viticulture and Small Fruits Research where she worked under the supervision of Violeta Tsolova, Ph.D. She gained invaluable lab skills and a great experience learning how to conduct field research. She states that "the field of agriculture can be exciting as one wants it to be, as it affords one the flexibility or combination of classroom, lab, field, and at your desk type of environment." In 2011, she successfully defended her thesis titled "Genetic Transformation for Overexpression of Flavonoid Compounds in *Muscadinia* Grape Cell Cultures."

Safira recounts her tenure in CESTA and at FAMU as one where she had tremendous support from

faculty and staff. Her student colleagues with whom she studied and conducted research, also made for a rewarding experience in the College and at FAMU. She gives commendation to Violeta Tsolova, Ph.D., Anthony Ananga, Ph.D., Verian Thomas, Ph.D., Lambert Brown Ph.D., and Bobby Phills, Ph.D. (retired) whom ensured that she never faltered along the way. She accredits their tutelage, guidance, and mentorship as part of her successful journey so far to becoming a great scientist in agriculture. Overall she found her experience in CAFS to have been stimulating and well-rounded, and prepared her further for her academic pursuit of obtaining a Ph.D.

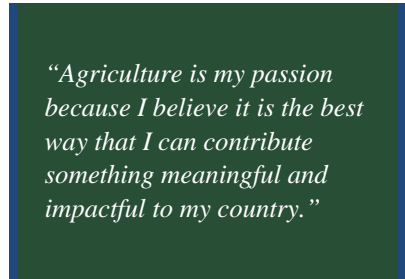
In preparing to enroll in a doctorate program, Safira researched

the various universities, professors, and the type of research they were doing. This led her to Ronald Walcott, Ph.D., in the College of Agriculture and Environmental Science at the University of Georgia. Having a background in plant science and biotechnology, a great love for agriculture, and the desire to work with seeds, she quickly gained interest in plant pathology. Given her interest and the work Dr. Walcott was doing, she felt that working under his guidance in the lab would be a perfect fit and would allow her to strengthen her weaknesses, and give her a competitive advantage that would make her more marketable.

In 2014, she was awarded a \$9,500 grant from the Southern Sustainable Agriculture Research and Education (SARE) program to support a part of her dissertation research. Safira's dissertation focuses on different aspects of understanding and enhancing the management approaches of a seed borne bacterial disease that affects cucurbits. Specifically, the research is centered on *Acidovorax citrulli* (*A. citrulli*), a gram-negative bacterium that is the causal agent of bacterial fruit blotch (BFB) of cucurbits, and is an economically important disease worldwide. Although a wide range of cucurbits can serve as a host for *A. citrulli*, outbreaks are more commonly observed on watermelon, cantaloupe, and honeydew melon. Inoculum can be introduced into cucurbit fields by contaminated seeds, infected transplants, volunteer watermelon plants, and from alternate host. Despite several types of management practices, disease management remains challenging because *A. citrulli* is seed borne, and seeds are the primary source of inoculum. Although there have been rigorous efforts to identify resistance, to date there is no commercially available

resistance to BFB.

Current management practices include exclusion of the pathogen by planting in semiarid regions, which are not conducive for BFB development. Other management practices include using tested pathogen-free seed, utilization of biocontrol agents, and seed treatments. Even though these practices are routinely used, BFB outbreaks continue to occur



*“Agriculture is my passion because I believe it is the best way that I can contribute something meaningful and impactful to my country.”*

sporadically with significant economic consequences. Efficacy of current management practices varies widely because the pathogen can be localized under the seed coat, and/or in the endosperm of the seed, which can cause any externally applied seed treatment to be ineffective. No one management practice can eradicate BFB alone, hence our lab proposed a strategic addition to an integrated management plan to provide protection deep within the seed by depositing biocontrol agents into internal tissues of seeds. After seed germination, the antagonists (biocontrol agents) could rapidly colonize seed tissues and prevent the establishment of *A. citrulli* populations. Initial findings suggest great potential for flower treatments with biocontrol agents to aid in the management of bacterial fruit blotch. In addition to controlling *A. citrulli*, these strains may provide a broad spectrum of protection against other pathogens that affect cucurbits. Results from her research have great potential to provide sound environmental and sustainable approaches for managing seed-borne plant diseases that may be of potential use for seed

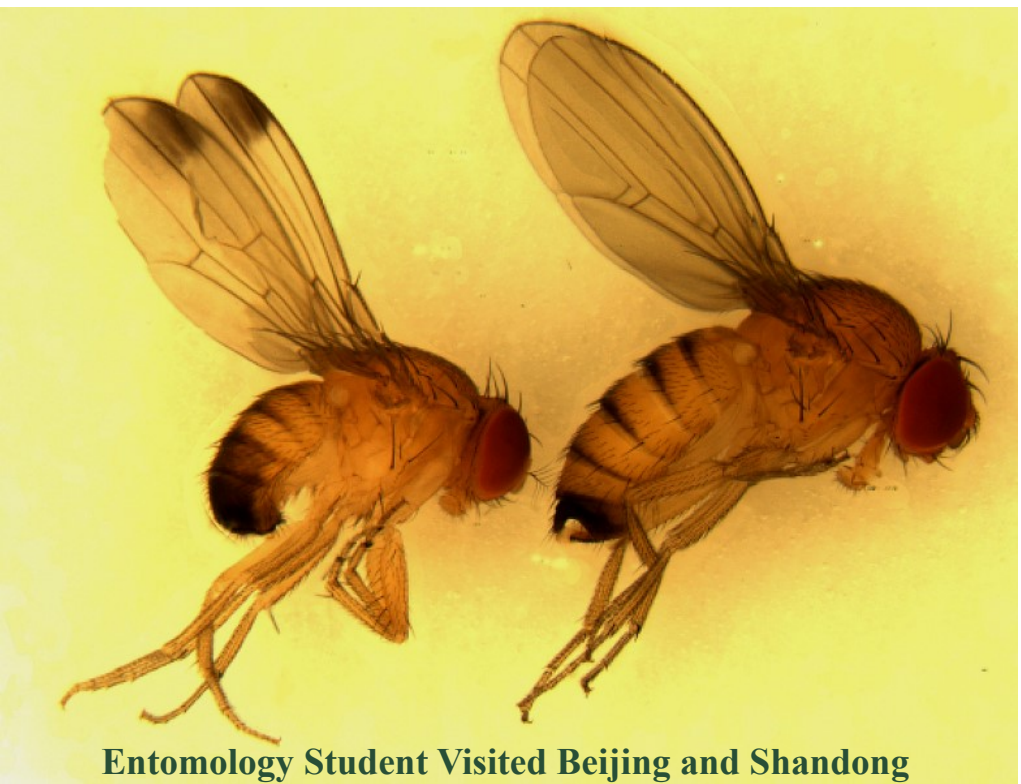
companies.

Safira's main career aspiration after graduation is to work for Monsanto, the leading seed company in North America. However, having worked as a teaching assistant, which is a requirement for the doctorate program, she is considering staying in academia for a little while to give back. She says “I would love to motivate students as I have been, and is still being motivated by faculty and staff. It is very rewarding to see a student's face when you provide them with assistance, and you can see that they truly understand and appreciate your help.”

Agriculture is her passion and she believes it is the best way that she can contribute something meaningful and impactful to her community and country.



Above: Dasia Harmon & Collaborators investigate SWD on Cherry Fruits. Below: Pair of SWD



### Entomology Student Visited Beijing and Shandong Province, China

A new invasive species of *Drosophila* known as Spotted Wing *Drosophila* (SWD), *Drosophila suzukii* (Diptera: Drosophilidae) was detected August 2009 in Hillsborough County Florida. The species is native to South East Asia. The pest is now widespread in the eastern and western United States. The SWD is spreading rapidly and economic losses are severe, thus it is rapidly becoming a pest of great concern to the fruit

industry and growers. Crops potentially at risk in Florida include thin-skinned fruits such strawberries, blackberries, and blueberries (Steck et al. 2009). The pest has recently been found in many counties of California, infesting ripening cherries and in coastal areas infesting ripening raspberry, blackberry, blueberry, and strawberry crops. It has also been observed occasionally attacking other soft-flesh fruit such as apples,

Asian pears, Asian plums, elderberries, kiwi, grapes, mulberries, nectarines, peaches, persimmons, plumcots, plums, and figs. The rapid spread of the invasive SWD poses a serious challenge to fruit production in Florida. The biology of *D. suzukii* suggests that an effective control effort requires an area-wide pest management program. Specific control measures for the SWD have not been developed yet in the United States. This summer, Dasia Harmon, a master's student in entomology travelled with her major professor, Muhammad Haseeb, Ph.D., to explore ecology and management practices against the SWD in its native ranges in Beijing and Shandong Province. In two weeks of study, Ms. Harmon observed and partially reared the SWD collected from two varieties of cherry and mulberry plantations. The infestation levels of the SWD were recorded very high on the dark reddish fruits compared to light red cherry fruits. In China cherries, blueberries, and other host plants of the SWD are harvested early before ripening, which prevents the insect from laying eggs. This way most of the farmers escape heavy losses from the SWD. Small growers usually use nets during fruiting season. Specimens for molecular finger printing were collected and are being finger printed to find out the exact origin of the SWD that is infesting blueberry and other crops in the United States. This project is funded by the USDA, APHIS, PPQ, and the Center for Plant Health Science and Technology. The summer study was collaborated with Runzhi Zhang, Ph.D., the Institute of Zoology (IOZ), Chinese Academy of Sciences (CAS). A doctoral student, Chunyan Jiang (IOZ, CAS) who was on exchange study visit for six months at CAFS supported the project's activities in Shandong Province China.

## 4-1-1 Student Researchers

Graduate students Tolulola Toluwanimi Adeyewa and



Oluwatoyin Olaoluwa Sangokunle speak highly about the faculty in the College of Agriculture and Food Sciences (CAFS), especially their research advisors Violeta Tsoleva, Ph.D., and Anthony Ananga, Ph.D. Tolulola and Oluwatoyin are from Nigeria and came to Florida A&M University (FAMU) in August 2014 under a Memorandum of Understanding between FAMU and the Federal University of Technology, Akure (FUTA), referred to as the FAMU-FUTA 4-1-1 program. Under the 4-1-1 program a student is required to complete four years of undergraduate course work at FUTA, one year at FAMU to complete undergraduate course work and research, and then proceed to the master's program to complete one final year. Both students are in the plant science and biotechnology master's program and are conducting research in the Center for Viticulture and Small Fruit Research.

Tolulola depicts her experience so far at FAMU-CAFS as one that has provided a platform for networking and an advanced educational exposure. Her research titled "Identification and Isolation of Three Major Allergens in Grape" focuses on the extraction of allergens from the grape *Vitis rotundifolia*. Grapes are packed with antioxidants and nutrients, however certain allergens that are contained in this berry makes it a constraint, as it causes itchy skin and eyes, and other allergic reactions to some. As people become more and more health conscious, they will be able to consume and enjoy grapes while getting all of the nutritional benefits without worry of any impending allergic reactions.

Oluwatoyin likes that CAFS is a place of equal opportunity, and being an international student appreciates the

diversity among the faculty members and the students. He is given the opportunity to be independent, research-oriented, and think out-side-of the box. His research project involves a feasibility study for Production of Dietary Antioxidant by Cell Culture of American Native Grapes (*Vitis aestivalis* Michx. Cynthiana Cv.). The intended result is to obtain a molecular farming of the cell line that produces the highest level of dietary antioxidants from American Native Grapes (*Vitis aestivalis* Michx. cv. Cynthiana) and to establish a novel sustainable resource for the food, pharmaceutical, and nutraceuticals industries.

This "cutting edge" research is prime example of how the Center for Viticulture and Small Fruit Research is paving the pathway in the global food security, which seeks to improve and produce safe and nutritious food that meets the dietary needs and food preferences for an active and healthy life. Both students intend to pursue their doctorate degree immediately after completing their master's degree.



## Partnering to Enhance Natural Resource Sciences in the Region: Florida A&M University and the Florida Forest Watershed Research Program (FFWRP)

The influence of the Florida Panhandle and Big Bend region on water resources and natural resource conservation has been highlighted in the environmental, political, social, and financial arenas over the past few years. The regions have been the focus of attention for the following reasons:

- the region holds the route for flows draining through the Apalachicola and Ochlocknee River basins before reaching the Gulf of Mexico from each respective bay
- the region receives flows draining more than 30,000 mi<sup>2</sup> of land within Alabama, Georgia, and north Florida
- the region is one of the richest biodiversity hotspots in North America
- the region is forecasted to experience significant climate change impacts over the next few decades

Taking into account the diversity, biological and natural resource significance, environmental awareness in the region, and political setting it is almost certain that the panhandle and Big Bend regions will help formulate the nation's strategies related to preserving natural resources for future generations. One institution playing a role in the protection and preservation of the region's natural resources is Florida A&M University (FAMU), which is the land-grant institution within closest proximity to both locales. Given its strategic location makes it a prime entity for partnering prospects to enhance agricultural, natural resource, public health and engineering science, and other

opportunities.

One such mutually beneficial partnering opportunity is with the USDA Forest Service through the Southern Research Station for the enhancement of capacity to conduct research, education, and outreach. The benefits are to produce high-quality research and education opportunities to enhance the experiences of FAMU students and to increase the candidate pool of natural resource professionals to meet the future needs of the Southern Research Station, USDA Forest Service as a whole, and other natural resource agencies and organizations. In fact, previous administrations recognized the opportunity and established a partnership nearly 20 years ago to provide enhanced research and education experiences for FAMU students through the College of Agriculture and Food Sciences (CAFS), formerly known as the College of Engineering, Sciences, Technology, and Agriculture. The partnering has presented numerous success stories and placed a number of highly functioning professionals and scientists within the USDA Forest Service ranks.

Over the past four years, the Forest Service Florida Forest Watershed Research Program (FFWRP), formerly called the capacity building initiative at Florida A&M University has established a framework for increased effectiveness, visibility, and relevance. The program and partnership with FAMU are now realizing the mutually beneficial products from the partnering efforts, which includes publications (peer reviews and theses), multiple presentations, more than doubling of the list

of program partners, and increased visibility and relevance in the panhandle and Big Bend regions. This unique partnering effort has increased research capacity for FAMU, helped students from diverse backgrounds become better prepared to compete academically, and further its goal of educating the next generation of natural resource professionals and scientists. Although still early in the FFWRP history, expectation of the program is to have a significant influence on the STEM/STEAM acumen of students in the region. In this past year (FY 2016), the partnership sought out, educated, employed, trained, and developed a diverse group of students through outreach, technology transfer, and grants funding in collaboration with the FFWRP.

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By J.M. Grace III, Ph.D. and Andrine Stanhope, Ph.D.

## Florida Forest Watershed Program Funded Projects 2016

Project Title	Lead	Research, Education, and/or Outreach Partners
Strengthening Florida Forest Watersheds Research Program and educating future generations in agriculture, forestry, and natural resources	S. Leong (CAFS)	USDA FS-SRS-4353 Tallahassee USDA-FS-NFnF FAMU-CAFS-CWAQ
Enhancing student research opportunities and education in water quality	C. Jagoe (SOE)	USDA FS-SRS-4353 Tallahassee TCC-Wakulla Environmental Institute SOE FAMU-CAFS-CWAQ
Influence of land use, cover, and historical management practices on soil carbon stocks, forms and stability in the Apalachicola National Forest	O. Mbuya (CAFS)	USDA FS-SRS-4353 Tallahassee USDA-FS-NFnF FAMU-CAFS-CWAQ
Enhancing undergraduate learning through engagement in research in natural resources sciences	A. Jain (CAFS)	USDA FS-SRS-4353 Tallahassee FAMU-CAFS-CWAQ
Natural oxygen and hydrogen stable isotopes as tracers for hydrological process in surface and shallow groundwater in the forests of north Florida	Y. Hsieh (CAFS)	FDEP USDA FS-SRS-4353 Tallahassee USDA-FS-NFnF FAMU-CAFS-CWAQ TTRS
Enhancing water quality research and advocacy through education: A multidisciplinary approach	T. Lee (COPPS)	USDA FS-SRS-4353 Tallahassee USDA-FS-NFnF FAMU-COPPS FAMU-SOE FAMU-CAFS-CWAQ UF-IFAS
Influence of forest management alternatives on soil water relationships in the Panhandle region of Florida	O. Mbuya (CAFS)	USDA FS-SRS-4353 Tallahassee USDA-FS-NFnF FAMU-CAFS-CWAQ UF-IFAS
Soil and nutrient accumulation rates and sulfur chemistry of ephemeral wetlands and their indication of the environmental quality of the surrounding drainage basin	Y. Hsieh (CAFS)	USDA FS-SRS-4353 Tallahassee USDA-FS-NFnF FAMU-CAFS-CWAQ TTRS
Forest soil seed bank and vegetation management in Apalachicola forest	O. Mbuya (CAFS)	USDA FS-SRS-4353 Tallahassee USDA-FS-NFnF FAMU-CAFS-CWAQ UF-IFAS

USDA: U.S. Department of Agriculture

FS-SRS: Forest Service-Southern Research Station

FS-NFnF: Forest Service-National Forests in Florida

FAMU: Florida A&M University

CAFS: College of Agriculture and Food Sciences

CWAQ: Center for Water and Air Quality

TCC: Tallahassee Community College

SOE: School of the Environment

FDEP: Florida Department of Environmental Protection

COPPS: College of Pharmacy and Pharmaceutical Sciences

TTRS: Tall Timbers Research Station

UF-IFAS: University of Florida-Institute of Food and Agricultural Sciences



## Aspiring Entomologist—Awarded Monsanto and National Black Farmers Scholarships

**Xavier Price** knew from an early age that he would attend college and knew exactly what he wanted to study. He stated “I have been in the pursuit of studying botany and entomology both in my personal and academic life since the first grade when I completed my first black history project report on George Washington Carver.” Xavier also has a passion for music. Attending FAMU and joining the FAMU Marching “100” was a desire of his since the 7th grade. As fate would have it, he did end up at FAMU, but no longer with the intention to join the Marching “100.” Xavier enrolled at FAMU, in the College of Agriculture and Food Sciences Entomology Program after graduating from Fort Valley State University with a Bachelor of Science in Plant Science Biotechnology.

*“I’ve been in the pursuit of studying botany and entomology both in my personal and academic life since the first grade when I completed my first black history project report on George Washington Carver.”*

As a budding and future entomologist, his research focuses on saving honey bees from pests and diseases. His study aims to satisfy two objectives:

(1) to examine the collateral and unintended acquisition of pesticide resistance in pests of honey bees; and (2) to use molecular genetic techniques to investigate the key mechanisms of resistance to pyrethroid insecticides in Varroa mite populations. Our lives – and the world as a whole – will be much different and almost impossible if bees didn’t exist. Honey bees are responsible for pollinating about one-sixth of the flowering plant species worldwide and approximately 400 different agricultural crops. Ninety percent of all commercial pollination is performed by honey bees thus contributing to \$29 billion to the U.S. farm income. However, the ectoparasitic mite, *Varroa destructor* (Varroa mite) transmits several viral diseases to honey bees and eventually destroys their colonies. In addition, the over-use of broad-spectrum antibiotics such as tetracycline to control American Foulbrood, a highly contagious bacterial disease of the honey bee, is threatening the bee industry. The United States has seen a decline in the total number of honey bee colonies from 6 million in the 1940s to only 2.5 million today. With further research, Xavier hopes to shed light on how current bee keeping practices have been negatively impacting honey bee colonies. He believes that more consideration should be given to the type of control measures employed when treating for honey bee pests, as the entire hive and its inhabitants are exposed to the same selection pressures that cause pesticide resistance to develop. Under the supervision of Lambert Kanga, Ph.D., he has been exposed to

the multi-layered world of apiculture and is dedicated to researching and finding ways to end the plight of the honey bees.

Xavier also intends to become a certified bee keeper and it is his desire to own a bee research farming operations that he will serve as a community outreach tool for local bee products, a site for innovative pest control methods, and a source for strong stocks of colonies that will contribute to improved health of the honey bee colony.

Xavier recently applied for and received two scholarships totaling \$30,000. He was awarded the Monsanto Graduate Student in the amount of \$25,000 and the National Black Farmers Scholarship in the amount of \$5,000. Monsanto is a leading sustainable agriculture company that is committed to recognizing high-achieving underrepresented students who are pursuing degrees in agriculture and STEM related fields. The National Black Farmers Association (NBFA) is a non-profit organization representing African-American farmers and their families. The NBFA scholarship is for current and future African-American farmers with an aim to provide inspiration and knowledge to help their vision become a reality. These scholarship awards are a testament to the significance of his research in agriculture and positive impact it can have on local and global agriculture and food security.



## Coming Soon...New On-Line Courses in CAFS!

The College of Agriculture and Food Sciences anticipates increasing its on-line course offerings spring semester, 2017. To meet the necessary requirements and equip its faculty with the basic and essential skills, 15 faculty members worked really hard this summer to develop and design on-line courses, by participating in a five-week training session from May 26 to June 28, 2016. The training was designed to provide assistance and resources to the faculty members. It is expected that by the end of the summer, as many as 10 new (up from two), and one revised high-quality, on-line or web-enhanced courses that are based on the Quality Matters Higher Education Rubric, will be completed. The training, which was presented in a hybrid format, consisted of four virtual sessions and two

face-to-face sessions.

Through group training sessions and individual course consultations, participants were provided with information and guidance on effective on-line pedagogy, the standards of the Quality Matters rubric, the latest instructional technology applications, and the use of such applications to enhance and support learning objectives and outcomes. The faculty members have made significant progress towards the completion of these courses, by working on the design or redesign of their courses. They received timely feedback from the facilitator regarding the items needed to complete their courses. When all the requirements are met, each faculty member will receive a Certificate of Completion.





# GRAPE HARVEST FESTIVAL



# Grape Harvest Festival

More than 20 local residents stood cramped on a stage Saturday afternoon waiting anxiously to begin the grape stomp competition at the 16th annual Florida A&M University Grape Harvest Festival. The 12 teams, one of which had FAMU's Provost Marcella David, stood in front of wooden buckets full of grapes to compete in mashing grapes from the FAMU grape vineyard with their feet for a grand prize.

The grape stomp competition was one of the most anticipated events of the festival, which was meant to highlight the work of FAMU's College of Agriculture and Food Sciences (CAFS).

Held at the FAMU Center for Viticulture and Small Fruit Research, the festival was a chance to "incorporate the community into what FAMU is doing for research," according to Amelia Davis, coordinator of Publication Information Services for CAFS. It displayed the work of students and faculty, letting community members wander the grape vineyard, and learn more about what goes into the work of CAFS.

"As far as creating the wine, they're doing research on different types of grapes," Davis said. "Having everyone going to the vineyard — a lot of people didn't even know we had a winery here."

Aside from the grape stomp competition, most of the other festival attendees spent time picking the student grown grapes or tasting the curated wine.

In the opening ceremony of the festival, Mayor Andrew Gillum commended CAFS for what he recognized as necessary research for FAMU and the world. Gillum noted the potential of work that CAFS is doing, saying it could be a form of entrepreneurship, not just for students, but for FAMU.

"I think we undervalue what is happening here regarding the research and development, which quite frankly could be turned into merchandise and enterprises that brings revenue, resources to this institution and lessens our reliance on the state university system," Gillum said.

Representative Alan Williams also spoke during the opening ceremony about CAFS' research trailblazing for people and entities all over the world.

"People come from all over to learn about our research," Williams said. "The footprint of FAMU doesn't just reside

[in Tallahassee]. FAMU is moving across the state, but really it's moving across the world, because everything that we do here can be replicated and so many folks come to us."

The festival was about more than just grapes, there was also a health fair open to local residents to learn about the plethora of opportunities for medical care and aid throughout Tallahassee.

Sponsors for the event included Pepsi, Costco, Metz Food Services, WANM 90.5 The Flava Station, FAMU's Army and Navy ROTC, Tallahassee Magazine, Cumulus Tallahassee, and more.

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By TylLisa C. Johnson, Staff Writer—FAMUAN



## Engineering Research Center for Cyber-Physical Agriculture System



O.S. Mbuya, Ph.D., Co-Principal Investigator in a consortium of six universities (Florida A&M University, University of Chicago, University of Notre Dame, University of Florida, University of Michigan, and Michigan State University), submitted a proposal in the amount of \$19,555,044 to the National Science Foundation (NSF) for the establishment of an Engineering Research Center for Cyber-Physical Agriculture Systems (CAS). The CAS approach proposed to create an end-to-end management system that adaptively

measures, transmits, integrates diverse data into a “virtual farm” specialized to a specific spatially resolved field, and capable of driving farm management decisions for better yield, use of resources, and prediction of output. This would be done by using new sensing and hardware technologies, using new low-power wireless technologies, and using cloud computing, big data analytics, and agronomic models. This approach will aid in the realization of precision agriculture, determining “what is needed, when to apply, and where” at affordable costs, with high spatial and temporal resolution, and with extreme reliability.

If funded, the proposed Center will develop a robust, low power, and massively scalable wireless network that will meet the evolving needs of future sensors. Currently there is no publicly available wireless system that offers convenient networking of thousands of nodes spread over a large area in a seamless, self-configurable fashion while also meeting the requirements of low cost, low-power, and supporting under-

ground transmissions. To accomplish this, FAMU has set aside 700 acres at the Brooksville Research and Education Center where a state-of-the-art precision farm will be developed. In order for CAS to have a global impact, students and scientists with the Center of Water and Air Quality will collaborate with foreign scientists at Anand Agricultural University – AAU in India, International Maize and Wheat Improvement Center – CIMMYT in Mexico, and the Center for tropical Agriculture – CIAT in Columbia.

Experimental farms at these locations will be equipped with sensing systems developed by CAS and the results from these farms will be incorporated into the analytics models developed at CAS. This work will allow for the geographic scalability of the precision agriculture. CAS will provide all sensors required at all international sites. Other FAMU participating faculty members are: Anandhi Swamy, Ph.D. (CAFS), Hongmei Chi, Ph.D. (Computer Information Science) and Daniel Solis, Ph.D. (CAFS).



The College of Agriculture and Food Sciences (CAFS) extends a heart-felt thank you to Mr. Godfrey Nurse, for his dedicated 29 years of service and contribution to CAFS – Cooperative Extension Program. We wish him best wishes and farewell as he embarks on the next phase of his life

## ESRI User Conference

Katherine Milla, Ph.D., (professor) and research associate, and Christy Crandall in the College of Agriculture and Food Sciences – Center for Water and Air Quality attended and participated in the Environmental Systems Research Institute (ESRI) User Conference. The conference was held at the San Diego Conference Center on June 27 - July 1 in San Diego, Calif. Ms. Crandall presented a research paper in the Sedimentation/Erosion Session, entitled “Meeting TMDL Nutrient Criteria in Florida and Streams originating in Upstream

States.” The project, which was funded by the USDA NIFA discussed the use of the Watershed Assessment Model (WAM) in estimating and evaluating the impacts of Best Management Practices (BMP) implementation on nutrient loads in the Attapulugus Creek Basin. The conference had more than 16,000 people in attendance and the session in which the paper was presented had more than 50 persons. The presentation stimulated several questions and brief discussions from the audience. They also attended workshops dealing

with building story maps and use of unmanned aerial vehicles and ArcGIS for agricultural applications, such as identifying areas of poor crop production, plant health, irrigation inefficiency, and or soil loss. The conference provided researchers such as Milla and Crandall with the opportunity to meet and talk with other researchers in their field, find applicable innovations from other industries, and to get updated information on how ArcGIS works with the various tools and models that they need or already have.

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## Office of International Agriculture Program (OIAP)

The following grants were awarded to Principal Investigator Harriet Paul, Director, OIAP:

- USAID – FAMU International Executive Services Corps (IESC) Ghana Farmer-to-Farmer Program in the amount of \$339,257
- USAID FAMU Volunteer for Economic Growth Alliance India Farmer-to-Farmer Program in the amount of \$468,089.77

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## Recipe Corner—Chocolate ‘Chirp’ Cookies

Makes a dozen or so cookies

### Ingredients:

- 2 ¼ cups cricket flour
- 1 tsp. baking soda
- 1 tsp. salt
- 1 cup butter, softened
- ¾ cup sugar
- ¾ cup brown sugar
- 1 tsp. vanilla
- 2 eggs
- 1 12-ounce pkg. chocolate chips
- ½ cup dry-roasted chopped crickets

### Directions:

Preheat oven to 375 deg F. In saucepan heat 1 12-ounce pkg. chocolate chips until melted. Or melt in small bowl in microwave. Dip dry-roasted crickets into mixture and lay flat on drying pan or plate.

In small bowl, combine flour, baking soda and salt; set aside. In large bowl, combine butter, sugar, brown sugar and vanilla; beat until creamy. Beat in eggs. Gradually add cricket flour mixture and mix well. Stir in chocolate covered crickets.

Drop by rounded measuring teaspoonful onto ungreased cookie sheet. Bake for 8-10 minutes.



# Congratulations



## CAFS Graduates Fall 2016

Phania Alcena	B.S., Agricultural Science; Major: Food Science
Brian Brady	B.S., Agri-Business
Romario Chisholm	B.S., Agri-Business
Lashorn Donaldson	B.S., Agri-Business
Akilah George	B.S., Agri-Business
Jarvis Greene	B.S., Agri-Business
Allen Humphries	B.S., Agricultural Science; Major: Agronomy
Robert Jolley	B.S., Agri-Business
Karisa Jones	B.S., Agricultural Science; Major: Animal Science
Ryan Kopenski	B.S., Agri-Business
Anastasia Meredith	B.S., Agricultural Science; Major: Animal Science
Jarrett Tally	B.S., Agricultural Science; Major: Agronomy
Patrice Washington	B.S., Agricultural Science; Major: Food Science
Ross Williams	B.S., Biological & Agricultural Systems Engineering

# Congratulations



## CAFS Graduates Fall 2016

### **Dasia Harmon**

Degree: M.S., Agricultural Science; Major: Entomology  
Thesis: Identification, Monitoring and Management of the Spotted Wing Drosophila, *Drosophila suzukii* (Diptera: Drosophilidae), An Invasive Insect Pest of Thin-Skinned fruits in Florida  
Thesis Chair: Muhammad Haseeb, Ph.D.

### **Eric Turner**

Degree: M.S., Agricultural Science; Major: Entomology  
Thesis: Studies on *Megacopta cribraria*: Impacts on Predatory Behavior and Development Characteristics of *Podisus maculiventris* and Phylogenetic Analysis of *Megacopta cribraria* in the Southern United States.  
Thesis Chair: Lambert Kanga, Ph.D.

### **Angelic Granger**

Degree: M.S., Agricultural Science  
Thesis: Non-Thesis Option

### **Key'erra Rozier**

Degree: M.S., Agricultural Science  
Thesis: Non-Thesis Option



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