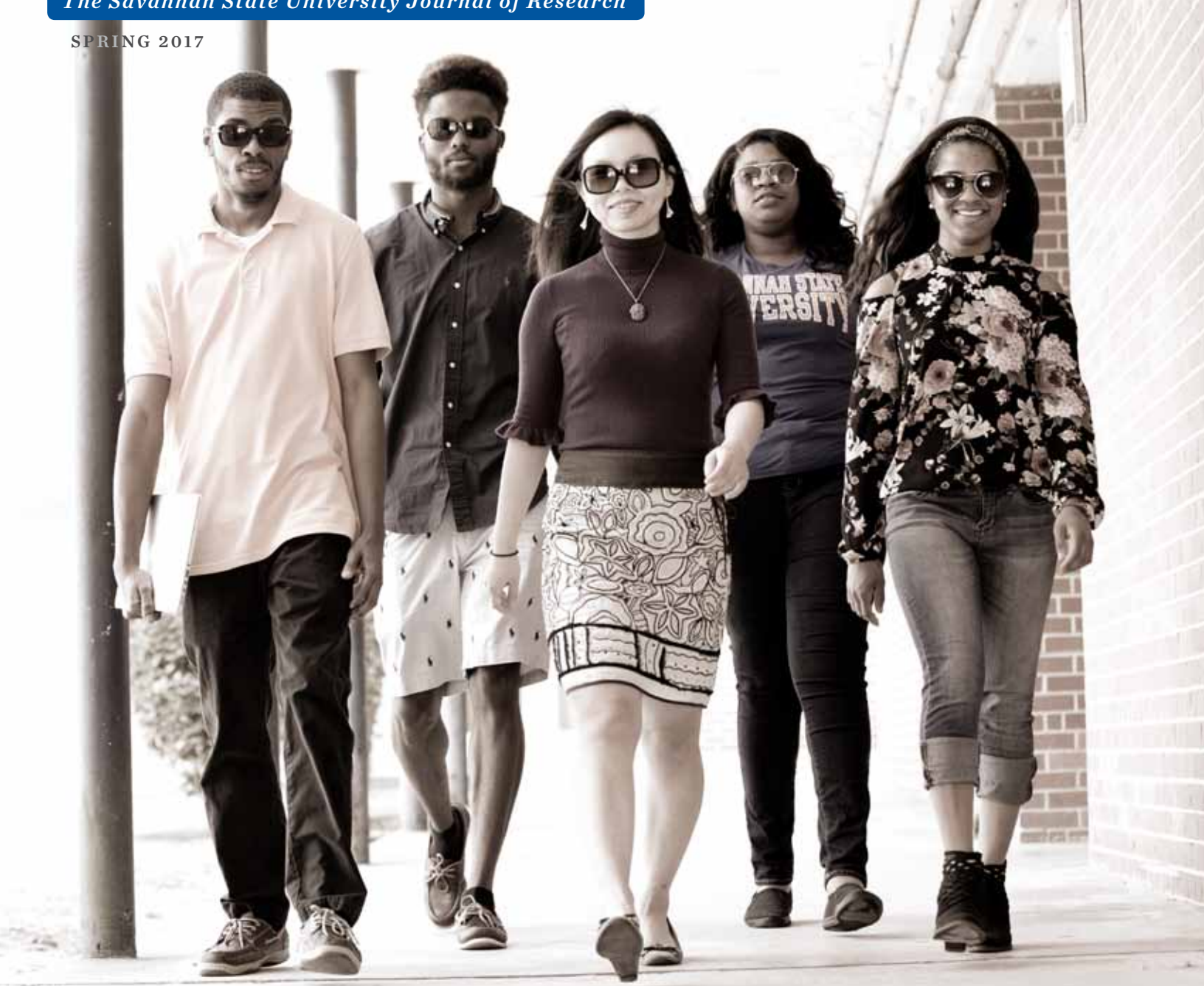


ARISING

The Savannah State University Journal of Research

SPRING 2017



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setting their sights on
STEM

SOARING
TO NEW HEIGHTS

LIGHTS CAMERA
ACTION!

UP TO THE MARK

FROM THE HEART 

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Arising

VOL. 5, NUM. 1, SPRING 2017
Arising is published by University Advancement, which includes alumni relations, marketing and communications, special events, and development.

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On the cover: Qian Chen, Ph.D., an assistant professor of computer science technology in the SSU College of Sciences and Technology, and her team of student researchers are developing methods to stop cyber attacks before they happen. From left to right: Earnest Lamar, Jeremiah Harris, Chen, Chelsea Calhoun and Summer Sykes. Read about their efforts to prevent cyber attacks in "Cyber Warriors" on page 16.

MESSAGE FROM THE PRESIDENT

Welcome to the fifth edition of *Arising*, Savannah State University's magazine about research and grant programs. This year's issue covers the spectrum, from pioneering research taking place on the waterways behind our marine sciences building to a comprehensive effort led by our student services staff to educate the campus community about suicide prevention.

The magazine's cover story, "Cyber Warriors," focuses on the research efforts of Qian Chen, Ph.D., and her team of student interns. Dr. Chen, an assistant professor of computer science technology, and her student assistants have discovered an innovative method to stop cyber attacks before they happen. Dr. Chen and two students conducted research last summer at the Oak Ridge National Laboratory in Oak Ridge, Tenn. This semester, Dr. Chen and her researchers are working on a second cyber security project, this one sponsored by the U.S. Department of Homeland Security, to protect power systems from cyber attacks.

This issue of *Arising* also features numerous articles that highlight the outstanding research efforts of our faculty, among them Karla-Sue Marriott, Ph.D., an associate professor of chemistry and forensic science. Dr. Marriott's groundbreaking research led to her discovery of benzofurans — synthesized chemical compounds that may one day be the key to treating neurological conditions such as Alzheimer's disease. In January, she was awarded a patent for her discovery and enjoyed well-deserved praise from our local community, including Congressman Buddy Carter, who recognized Dr. Marriott in the official Congressional Record on January 30, 2017. You can read more about Dr. Marriott and her patent in the article "Soaring to New Heights."

Last year, Savannah State celebrated the 50th anniversary of the Upward Bound program. The federally funded initiative — part of SSU's TRIO programs — gives low-income and/or first-generation college students much-needed support as they prepare to enter college. The program, which targets Savannah-area high school students, is featured in "Up to the Mark." The article highlights the achievements of current student Torrey Mott, a first-year chemistry major who graduated as salutatorian of his high school class, and Van'Nessa David Lotson, an alumna who is a successful local attorney.

An article dear to me in this year's issue is "From the Heart," which features master of social work graduate student Lori Williams. Lori is the recipient of a competitive stipend through SSU's Title IV-E program, in which students receive funding to cover their tuition and, in return, pledge to work for the Georgia Department of Family and Children Services for two years upon graduation. The stipend enabled Lori to change careers later in life and follow her true passion: helping others and giving back to the community.

I hope you enjoy reading *Arising* and learning more about the intriguing research and grant programs taking place on our campus.

Sincerely,
Cheryl D. Dozier, DSW
President





UP TO THE MARK

AT THE END OF 8TH GRADE, VAN'NESSA DAVID LOTSON'S MOTHER TOLD HER THAT SHE WAS GOING TO SPEND HER SUMMER ON THE CAMPUS OF SAVANNAH STATE UNIVERSITY. "I WAS SO USED TO STAYING IN THE HOUSE ALL SUMMER. I NEVER DID ANYTHING FOR THE SUMMER, SO AT FIRST I SAID NO," SAYS LOTSON, A FIRST-GENERATION COLLEGE STUDENT WHO GREW UP IN A SINGLE-PARENT HOUSEHOLD.

Lotson's mother persisted, and the Savannah native spent the summer of 2002 living on the SSU campus as part of the federally funded Upward Bound program. For six weeks that summer, Lotson lived in a dorm on campus, took classes, attended workshops and geared up for high school. At the end of the summer, she and her fellow Upward Bound students took a trip to visit several college campuses around the country, including Loyola University in Chicago and Paine College in Augusta, Georgia.

"That was the best summer I've ever had," Lotson says.

Lotson had always excelled in the classroom and racked up so many credits that she skipped a grade in high school. Though she was academically prepared for the rigors of college, she relied on the Upward Bound program to help with college test preparation and the college application process and to give her the emotional support needed to start college at the age of 16.

"I don't know if I would've been able to make it as far as I did without Upward Bound," says Lotson, who graduated from Savannah State in 2008 with a bachelor of science degree in criminal justice, attended

the University of Georgia School of Law and now operates her own law firm, the Lotson Law Group in Savannah.

Upward Bound was created by the U.S. government as part of the Economic Opportunity Act of 1964. The program, which has been successfully operating on the SSU campus since 1966, is part of TRIO, a group of federal outreach and student services programs designed to help students progress through the academic pipeline from middle school to college and beyond. Today, the SSU School of Teacher Education oversees the TRIO programs, which also include Student



Opposite page: Van'Nessa David Lotson participated in the Upward Bound program as a student at Herschel V. Jenkins High School. Today, she operates the Savannah-based law firm Lotson Law Group. This page: Upward Bound participant Torrey Mott (right), salutatorian of Sol C. Johnson High School, and Upward Bound Director Bobby Roberts Jr. (left) keep in close contact now that Mott is a first-year student at SSU.

Support Services and Educational Talent Search.

The Upward Bound Program at Savannah State is designed to give low-income and/or first-generation college students fundamental support as they prepare for college. The program, which currently serves students at Alfred E. Beach High School, the School of Liberal Studies at Savannah High School, Herschel V. Jenkins High School, Sol C. Johnson High School and Robert W. Groves High School, is open to students entering 9th and 10th grade. Once enrolled, the students receive one hour of academic instruction and one hour of tutorial services four days a week for the duration of their high school career. They attend Saturday sessions on campus once a month that emphasize academic instruction and hands-on enrichment activities, along with college test preparation and college placement.

Upward Bound students also have the opportunity to attend residential summer sessions on the campus of Savannah State and at participating institutions. At the end

of each summer session, the students and the Upward Bound team, led by Bobby Roberts Jr., travel to college campuses around the country.

"Some of (the students) have never traveled outside of Savannah," says Roberts, who takes the students to several college campuses each summer. "We provide them with a myriad of opportunities through these college tours."

While the goal of Upward Bound is to get the students to enroll in any college, each year several participants are accepted to and choose to attend Savannah State. A select number of students who matriculate at SSU are invited to participate in Upward Bound's Bridge program, a unique opportunity for incoming freshmen to live in dormitories over the summer, take a college class for credit, and attend special workshops and seminars that help prepare them for their first year on campus.

Torrey Mott, a freshman chemistry major who graduated from Sol C. Johnson High School in 2016, participated in Upward Bound for four years and was accepted into

the competitive Bridge program.

"From the 9th grade up until graduation and the Bridge program, Upward Bound has been very helpful to my academics," Mott says. "Because of Upward Bound, I was able to graduate as salutatorian and keep up my 3.9 GPA."

For Mott, who grew up in a low-income, single-parent household, participating in Upward Bound helped him develop ways to stay focused and finish homework assignments on time, something that had been difficult because of his short attention span.

Mott was accepted to 20 different colleges around the country but ultimately chose Savannah State, where he was offered the prestigious Board of Visitors Scholarship.

While Mott and Lotson are two of the program's success stories, Roberts says there are many more Upward Bound alumni who have graduated from college and achieved their dreams. "Just to see them say, 'I don't know if I can go to college' to (seeing them) going and enrolling and graduating is so rewarding." □

SOARING

TO NEW HEIGHTS



Karla-Sue Marriott, Ph.D., has been a favorite of students in the Savannah State University College of Sciences and Technology since joining the faculty in 2006. The Jamaican-born associate professor of chemistry and forensic science packs undergraduates into classes such as Crime Scene and Drug Abuse & Drug Analysis, and has a cadre of students vie to conduct research with her every year.

But in January 2017, Marriott became a veritable superhero to students across campus when news of her U.S. patent began to spread. Marriott received the patent for benzofurans — synthesized chemical compounds that could one day be the key to treating Alzheimer’s disease and a range of other neurological conditions, including Parkinson’s disease and Lou Gehrig’s disease (ALS).

“I’ve had a lot of positive response from non-science students as well as science students. They are passionate about it because they have been touched by family members with Alzheimer’s or dementia,” Marriott says.

Marriott first began researching benzofurans in 2010 through a \$238,000 grant from the National Institutes of Health, National Institute on Drug Abuse. Working with collaborators from the Mercer University School of Medicine-Savannah Campus, University of North Carolina-Chapel Hill and Clemson University, Marriott initially sought to create a combination of molecules to target dopamine D3 receptors. She hypothesized that the discovery could lead to the treatment of drug addiction. But when the results of Marriott’s research were sent off to the National Institute on Mental Health’s Psychoactive Drug Screening Program, the broad-scale screen showed other pharmaceutical possibilities.

Instead of binding with the brain’s D3 receptor, as Marriott had speculated, the synthesized molecules targeted the sigma-1 and sigma-2 receptors — proteins in the brain that serve as binding sites for neurotransmitters. Increasing scientific studies have implicated sigma receptors as having great potential in neuroprotection, cellular differentiation and neuroplasticity.

Marriott went back to the lab to further examine the molecules and discovered they had the ability to regulate the metabolism of cholesterol via the sigma-1 receptor. While there are many possible causal factors, some scientists believe high levels of cholesterol may be linked to plaque buildup in parts of the brain, which can lead to Alzheimer’s disease. According to Marriott, regardless of the mechanism of action, studies have confirmed that compounds targeting the sigma-1 receptor have great potential for the treatment of neurological disorders.

“It might have great potential in offering a protec-

tive treatment before (the body) gets to the point of (producing) plaque in the brain, possibly preventing the buildup,” Marriott explains.

Marriott knew that what she had discovered was significant and began the process of applying for a U.S. patent in Spring 2013. The patent was accepted in September 2016 and approved a few months later.

While Savannah State’s Office of Sponsored Research Administration and the university’s legal counsel work with Marriott to determine the next step, she continues to spend time in the lab deepening her research.

Marriott, who utilizes student interns to help her synthesize the compounds and perform similar reactions, is focused on the potential pharmaceutical applications of her groundbreaking compounds as well as the overall impact to the scientific community.

“If we have molecules like this that target specific areas, then we can focus and learn more about the biological pathways that contribute to Alzheimer’s, Parkinson’s and cancer. It helps to forward the research,” Marriott explains. “On the bigger side, these molecules could potentially serve as medicinal agents to help in the treatment. That would be the greatest benefit and the greatest potential.”

Marriott hopes that her research and the ensuing patent will inspire her own student researchers, along with other students at the university and her colleagues, to take their research to the next level.

“I want other scientists to know that your research should have an impact on society. People should appreciate it, and they should remember it,” says Marriott, who is deeply appreciative of the help and support she’s received from the university.

Marriott’s patent was the second secured by Savannah State University. In 2016, Christopher Hintz, Ph.D., an associate professor of marine and environmental sciences, and former marine sciences graduate student Amber Wilkinson patented a device that harvests microscopic algae cells in a simple, yet effective way. The device, which utilizes low-energy components, compressed air and plastic pipe, could have numerous applications, from biofuels to pharmaceuticals.

“Savannah State University has been a leader in higher education for 127 years,” says Savannah State University President Cheryl D. Dozier, DSW. “I am immensely proud of Dr. Marriott, Dr. Hintz and Ms. Wilkinson for engaging in high-level research and making contributions that will impact society and change lives. I know that these are the first of many patents that will be awarded within the Savannah State community.” □



SOUNDS OF THE SEA

Every day, Dante Freeman heads out to the dock behind the Savannah State University marine sciences building and steps aboard the R/V Margaret C. Robinson. But the 36-foot, twin-screw diesel workboat will not take Freeman on a journey through the waterways behind the Savannah State campus. Instead, Freeman will use the boat as a platform to extract data from an echosounder and other instruments that are moored in the tidal creek.

Freeman, a sophomore marine sciences major from Warner Robins, Ga., and his faculty mentor Amanda Kaltenberg, Ph.D., an assistant professor of marine sciences, are deploying the echosounder into the creek and analyzing the results to simulate data collection that is taking place some 480 miles away off the coast of North Carolina.

The research is part of Kaltenberg's three-year, \$282,106 Research Initiation Award (RIA) grant, "Physical Forces Impacting the Temporal Variability of Mesopelagic Prey at the Cape Hatteras Marine Top-Predator Diversity Hotspot." Funded by the National Science Foundation HBCU-UP program, Kaltenberg and her team of collaborators at Duke University and the Skidaway Institute of Oceanography are examining the influence of Gulf Stream physical interactions on biology off the North Carolina cape.

Through the study, Kaltenberg hopes to gain more knowledge about predators and prey in the mesopelagic part of the ocean — a vast area in the middle of the sea that comprises 70 percent of the earth's surface and is home to the largest habitat on the planet.

"The midwater fish are so hard to study

because of their remoteness. Through this research, we'll find out more about how the physics aggregates them, and then we can understand their link to the surface predators in the area," Kaltenberg explains. "The ultimate goal is to learn how the physics drive ecosystem processes."

Kaltenberg says that Cape Hatteras is the ideal environment to conduct the research because of its unique physics: cold water currents come from the north and warm Gulf Stream waters come from the south, making it a hotspot of biodiversity. By focusing her research there, Kaltenberg hopes to uncover the effect of the Gulf Stream on both the prey and the predators in the area.

To collect data, Kaltenberg and her collaborators deployed a 500-meter-long mooring off of Cape Hatteras. The mooring is equipped with several instruments,

including a CTD (Conductivity, Temperature, Depth sensor) to measure temperature and salinity, a current velocity meter, and an echosounder similar to the one she and Freeman are utilizing at Savannah State.

Once the mooring is retrieved, Kaltenberg and her colleagues will analyze the data and determine the response of the prey to the Gulfstream. The results will help the marine scientists better understand the repercussions of environmental variability on the interactions among prey and predators that inhabit the sea.

"We know climate is changing, and Cape Hatteras is an important area being looked at for off-shore drilling. It's a hotspot for marine mammals, and a physically dynamic region, so it's an area of interest in many ways," Kaltenberg says.

For Freeman, who is helping Kaltenberg

learn the techniques and processes that will be used once the mooring comes back from North Carolina, the opportunity to gain hands-on experience and engage in high-level research is invaluable.

"The experience from this project has helped me learn about a research lab environment. I feel a lot more comfortable and confident now that I know what it's like," Freeman says. "I have also learned a lot about how to use different equipment and data programs for research. This project has opened many opportunities for me."

In February, Freeman presented research related to the project at the 2017 ASLO (Association for the Sciences of Limnology and Oceanography) Aquatic Sciences Meeting in Honolulu, Hawaii.

"This was a huge, amazing opportunity. I feel extremely lucky to have been able to go," says Freeman, who presented his research

on diel vertical migration, which is the prey community's habit to stay in deeper waters during the day and rise to shallow waters during the night to avoid predators.

Freeman is the first of three student interns Kaltenberg plans to train during the course of this project. And while the habitat in the tidal creek behind the Savannah State marine sciences building is completely different from the deep sea off the coast of North Carolina, Kaltenberg believes that her student interns will benefit tremendously from the data training experience.

"It gives students a chance to learn about integrating data from different oceanographic instruments," Kaltenberg says. "These approaches are novel. Being able to quantify prey throughout the whole water column in deep water while monitoring ocean physics has not been done this way before." □



setting their sights on STEM

Savannah State University senior Ayana Tiller loves numbers. Perfect numbers to be exact. In 2016, Tiller, a mathematics major from Atlanta, had an opportunity to share her love of perfect numbers with mathematical researchers around the world when her article, “My Journey with Perfect Numbers,” was published in the *European International Journal of Sciences and Technology*. Tiller wrote the article with her faculty mentor Mulatu Lemma, Ph.D., chair of the Department of Mathematics, after conducting research with him as part of Savannah State’s Peach State Louis Stokes Alliance for Minority Participation (PSLSAMP) program.

Funded by the National Science Foundation, PLSAMP is a coalition of six Georgia universities, including SSU, University of Georgia,

Fort Valley State University, Kennesaw State University, Georgia Institute of Technology and Georgia State University. The program, which enlists the help of federal, state and local agencies, seeks to increase the number of underrepresented minority students who earn bachelor’s degrees in STEM fields and the number of students who pursue graduate study in those fields. Each year, Savannah State receives \$90,000 to support up to 27 scholarships for STEM students, with additional stipends available to support the salaries of faculty members who mentor the students during summer research.

Tiller joined the PLSAMP program during her junior year. As a PLSAMP scholar, Tiller receives a stipend of \$1,500 per academic year, an additional \$1,500 to complete an undergraduate summer research experience and a travel award to attend the regional

PSLSAMP conference and other national conferences.

The PLSAMP program is currently in its 11th year at Savannah State and was recently renewed for an additional five years. Led by Mohamad Mustafa, Ph.D., chair of the Department of Engineering Technology, the program supports students from a variety of STEM majors, including biology, chemistry, environmental sciences, marine sciences, mathematics, civil engineering technology, computer science technology, electronics engineering technology and forensic science.

In addition to working closely with faculty mentors and conducting research during the year and over the summer, PLSAMP scholars attend workshops, present papers at conferences and receive help applying for graduate school.

“It’s important to help the students conduct research that they would never have had the opportunity (to conduct). We help them attend conferences and make presentations. It builds self-confidence (and enables them to) compete with (students in) other high-research universities,” Mustafa says. “The goal is to get them into graduate programs.”

Tiller is in the process of applying to graduate school in applied mathematics. She credits the PLSAMP program, and especially Lemma, with helping her reach her goals.

“Dr. Lemma has helped me so much. He’s the one who introduced me to pure mathematics. I talk to him every day. I’ll go to his office and we’ll sit down for an hour. He knows my mom, he knows my brothers and sisters by name, and I know his family members as well,” Tiller says. “The standard is always set so high. He doesn’t accept the bare minimum.”

For Tiller’s classmate Sarah Dillard, a senior civil engineering technology major from Atlanta, the PLSAMP program has opened doors in her field of interest, transportation studies. Dillard is one

of five Savannah State students participating in the Dwight David Eisenhower Transportation Fellowship Program, a prestigious program that awards fellowships to students pursuing degrees in transportation-related disciplines.

“If I had not been in PLSAMP, I wouldn’t have had that molding of leadership and initiative to seek out other opportunities (like the Eisenhower Fellowship),” says Dillard, who also spends her time volunteering with Coastal Georgia Greenway Inc., a nonprofit organization that is seeking to develop a 450-mile trail system throughout coastal Georgia.

With the support of the PLSAMP program, Dillard has conducted interdisciplinary research on the SSU campus, traveled to conferences and attended numerous workshops. She currently is in the process of applying to graduate school in the field of transportation studies.

While Dillard and Tiller plan to work professionally within their fields after graduate school, they both want to eventually give back to their communities, starting nonprofit programs similar to PLSAMP.

Tiller hopes to one day create funding for children in grade school so they can have the early exposure to STEM that she missed out on during her childhood. “There’s lack of funding and lack of knowledge in these areas of education, and we (need to) inspire students to be in STEM at an early age,” she says.

Dillard, who did have early exposure to STEM, recognizes the importance of providing opportunities to young minds.

“I want to develop a nonprofit organization for minorities to expose younger students to the applications of STEM, not necessarily just engineering, but all disciplines,” Dillard says. “When I was younger, I was able to experience (STEM) and that exposure in middle school resonated with me and made me want to go into STEM and do something different and break those ceilings.” □

Opposite page: Ayana Tiller (left), a senior mathematics major, and Sarah Dillard (right), a senior civil engineering technology major, are both PLSAMP scholars. This page: PLSAMP Director Mohamad Mustafa, Ph.D., has encouraged Tiller and Dillard to apply to numerous graduate schools in order to further their education.



"A lot of times it's not the big things, but the little things that change someone's thought process. ... (The PSA) just might be the thing they need to hear that day." – **JAEDON RICHARDS**

"I want to help people and touch people's lives." – **ELISHAH BOWLES**

"From the training (I received in class) and talking to my friend (who attempted suicide), it gives you the idea of what the mindset is like before someone makes a decision like that." – **LAURYN WEBSTER**

"If we didn't do what we're doing, a lot of people would fall through the cracks." – **JACQUELINE AWE**

"All too often people think that ending it is the way to go, but that's a permanent end to a temporary problem." – **EDWARD FOX**

"Being involved was another way for me to speak out (and a way for more people to hear (the message))." – **CORENTEZ FISHER**

In 2014, the second leading cause of death among U.S. residents aged 10-24 was suicide, according to statistics released last year by the Centers for Disease Control and Prevention. Students and staff at Savannah State University hope to educate the campus community about suicide and prevent tragic outcomes through the "Project Zero: Because 1 Suicide Is Too Many" grant program.

The one-year grant, funded by an HBCU Center for Excellence award through the U.S. Substance Abuse and Mental Health Services Administration (SAMHSA), seeks to reduce suicide and improve the care for those who seek help. Project Zero at Savannah State is based on the nationwide Zero Suicide program, which was developed in 2012 by the National Strategy for Suicide Prevention, National Action Alliance for Suicide Prevention and Education Development Center's Suicide Prevention Resource Center and supported by SAMHSA. Several colleges throughout the state, including Columbus State University, Armstrong State University and Georgia Institute of Technology, among others, are implementing similar programs on their campuses under the direction of the Georgia Department of Behavioral Health and Developmental Disabilities.

Led by Jacqueline Awe, Savannah State's director of student development, Project Zero includes seven key components: lead, train, identify, engage, treat, transition and improve.

"It's very focused and evidence based," Awe explains.

One of the first initiatives that Awe implemented as part of the grant program was the formation of an interdisciplinary committee to help prevent and respond to suicidal behavior on campus. The group includes campus police and staff members, counselors, student success staff, library staff, the financial literacy coordinator, residential staff, disabilities services staff, admissions staff, faculty and students, along with off-campus mental health professionals.

The group, which meets once a month, ensures that various entities on campus are trained using evidence-based models and have tools and strategies in place to prevent suicides at their respective departments and offices.

Another component of the grant program was the creation of a PSA to create awareness about suicide prevention. To make the PSA, Awe enlisted the help of five students who she thought would work well together to create an effective campaign.

The group, which included Elishah Bowles, a sophomore social work major from Newnan, Ga.; Corentez Fisher, a senior behavioral analysis major from Memphis, Tenn.; Edward Fox, a junior social work major from Savannah; Jaedon Richards, a sophomore sociology major from Jacksonville, Fla.; and Lauryn Webster, a second-year master of social work and master of public administration student from Marietta, Ga., created a powerful 30-second PSA with help from Grace Curry, director at WHCJ, Savannah State's radio station.

The PSA, which will be sent to students by email and aired on campus radio, was recently named the first-place winner in the audio division of the HBCU Center for Excellence in Behavioral Health 2016 PSA Campaign Contest.

Awe hopes that the PSA, along with the training efforts taking place across campus and the resources available at SSU's counseling center, will reach students and serve the mission: zero suicides on campus.

"The whole idea behind Zero Suicide is that this should always be a goal. It's not a place that you always get to necessarily, but it's a place that you're always seeking to be," says Awe, who has not had any documented suicide cases in her 14 years on campus but has, thanks to the dedication of the counseling services team of counselors, helped counsel numerous students who have considered taking their own lives. "If we didn't do what we're doing, a lot of people would fall through the cracks." □

Because One Suicide is too Many



Professor Reginald Franklin (top photo, forefront) shows students in Intro to Video Production the components of a news broadcast. Opposite page: Jason Mikell, a junior mass communications major, hopes to one day work in the fields of television, film and animation.

LIGHTS CAMERA

ACTION

Twenty-eight students sit in the control room of the Savannah State University mass communications studio in Whiting Hall. They listen intently as Reginald Franklin, an associate professor and interim chair of the Department of Journalism and Mass Communications, drills them on terms.

What are two channels of audio called?" he asks. "Stereo," several students call out. "Boom mics require boom operators. True or false?" "True."

He continues, reviewing several key components of a live broadcast, from technical terms about operating a camera to dos and don'ts for on-air talent.

The students then follow Franklin into the adjacent studio where he tells them about their upcoming assignment. In the coming weeks, the students will work in groups, producing three-minute live clips of an actual broadcast. The students will rotate roles, serving as the host, guest, technical director and camera operators.

The assignment, one of many that students will complete during Franklin's Intro to Video Production class, exposes students to the ins and outs of a real broadcast in a real studio.

Opened in Fall 2016, the Department of Journalism and Mass Communications' \$1.1 million broadcast facility, which was funded primarily by Title III, features three high-

tech cameras and a Chroma key green screen—a computer-aided system that enables the students to create virtual sets. The studio also boasts a news anchor desk valued at more than \$20,000, which was donated by the Savannah law firm Friedman & Martin LLP. Attorneys from the firm used the desk when they hosted the local show "Law Call."

The mass communications studio facility is utilized by students in Savannah State's Department of Journalism and Mass Communications, along with Tiger's Roar TV, a news program run by SSU students.

Though passersby may not know that such a high-tech facility is nestled in Whiting Hall, for students aspiring to work in the mass communications industry, the studio is an opportunity to gain hands-on experience that will benefit them after they graduate.

"We're learning the fundamentals necessary to go out and do it," says Jason Mikell, a student in Franklin's class who hopes to one day make movies and television shows and work as an animator.

And while the junior mass communications major from Savannah is impressed with the facility, he says he's not surprised

that SSU has such a state-of-the-art studio available for student use

"The school invests in its students," Mikell says. □

The SSU Department of Journalism and Mass Communications is nationally accredited by the Accrediting Council on Education in Journalism and Mass Communications (ACEJMC) and is the only other institution in the state of Georgia that is so recognized other than the University of Georgia at Athens.



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Hackers trying to take down power grids in the U.S. may have some major hurdles to overcome thanks to Savannah State University Professor Qian Chen, Ph.D., and her team of student researchers.

Chen, an assistant professor of computer science technology in the College of Sciences and Technology, is leading a project funded by the U.S. Department of Homeland Security that aims to protect power systems from cyber attacks. To help with her research, Chen has enlisted the help of three students: interns Jeremiah Harris, a senior computer science technology major from Lawrenceville, Ga., and Chelsea Calhoun, a senior computer science technology major from Jacksonville, Fla., along with student worker Earnest Lamar, a senior computer science technology major from Sparta, Ga. The group is seeking to develop a high-detection rate DEIDS (Distributed Event and Intrusion Detection Systems) to help identify and classify natural events such as faults and line maintenance, as well as cyber attacks.

In February, the SSU Department of Engineering Technology provided Chen with a high-tech Power Edge R730 server so that she and her team can conduct the research from a computer lab on campus. Chen and her student researchers will utilize the server to analyze data from power systems, quantifying the information, looking for patterns and classifying their findings. Those results will help the team develop an effective DEIDS that could potentially catch a major cyber attack before it happens.

“The success of the project will lead into more advanced automatic control of cyber-physical electric utility systems, (helping to) detect and deter cyber attacks and (the) cascading failure of power systems,” says Chen, who is conducting the research through a sub contract at Mississippi State University, where she received a Ph.D. in electrical and computer engineering in 2014.

Harris, Calhoun and Lamar say that the opportunity to work on a high-level research project through the Department of Homeland Security will open doors as they prepare to graduate and enter the workforce in May.

“To work on something like this, it’s very important. The internet is getting bigger and bigger, and the most important thing is internet security,” says Harris, who already has a job interview lined up with a cyber security firm in North Carolina. “It’s a field that’s going to be growing rapidly, and it’s very important that you know what’s going on as a computer science major.”

The Homeland Security project began on the heels of another cyber security-related research project under Chen’s direction. In Summer 2016, Chen, Calhoun and Summer Sykes, a senior electronics engineering technology major from Atlanta, traveled to the Oak

Ridge National Laboratory in Oak Ridge, Tenn., to find novel ways to protect companies from cyber attacks.

Chen, Sykes and Calhoun spent 10 weeks at the multi-program lab, which is managed by the U.S. Department of Energy, designing and testing ways to protect SCADA (supervisory control and data acquisition) systems. SCADA systems — remote systems that enable companies and industries to operate multiple locations from a single place — are used to control many aspects of infrastructure, including power grids, communication systems, wastewater facilities, gas pipelines and more.

SCADA systems are prime targets for cyber attacks. According to recent studies, attacks on SCADA systems have doubled over the past year, yet some 30 percent of organizations did not realize their security had been breached.

During their summer research, Chen and the students were able to design a technique with high-detection accuracy that monitors, tracks and compares the power consumption during normal activity and during an attack. As a result of their research, SCADA systems can now be programmed to sense the spike in power consumption, detect a threat and alert the organization.

Sykes says the summer research experience has made her even more interested in a career in the field of cyber security. “I got to experience research, how to go through the hardware and software, how to analyze data, and how to manipulate data that attacks computers and other data systems.”

In January 2017, Chen presented the group’s findings at the prestigious Hawaii International Conference on System Sciences-50 in Waikoloa Village, Hawaii. The annual event is the longest-standing working scientific conference in the field of information technology management.

Meanwhile back at Savannah State, Chen has plans to expand cyber security course offerings on campus and initiate interdisciplinary projects with the College of Business Administration and the College of Liberal Arts’ homeland security and emergency management program. She also is working on a proposal to submit to the National Science Foundation HBCU-UP program for an RIA (Research Initiation Awards) grant that would further enable students to engage in cyber security research on campus.

“We have good students here. They are willing to do the research,” Chen says. “I’m so happy to bring my domain knowledge and expertise in cyber security to Savannah State.” □

Opposite page: (Left) clockwise from top: Jeremiah Harris, Professor Qian Chen, Ph.D., Chelsea Calhoun, Earnest Lamar and Summer Sykes. (Right) Chen and Sykes work on a Power Edge R730 server.

Giving back to the community has always been a priority for Lori Williams. The second-year master of social work student at Savannah State University first became involved in community service in high school, spending her spare time volunteering at the American Red Cross.

Over the years, Williams continued to volunteer, putting in hours at the Ronald McDonald House and the Susan G. Komen Foundation. “Helping others has always been in my DNA,” she says.

In 2014, Williams, now 41, decided to turn her passion for helping others into a career. After working for 18 years as a customer service agent for AirTran in Savannah, Williams came to a crossroads. The company was bought out by Southwest Airlines, so Williams either had to move her family to Atlanta or finally pursue her true passion.

“I knew that to be able to work hands-on, especially with kids, I needed to get into the social work field,” Williams says.

She immediately began a position as a contract worker with a local social work agency, working as a community support individual. In that position, Williams, who holds an undergraduate degree in psychology from Argosy University, worked directly with children, teens and adults, teaching them coping, anger management and job readiness skills and helping them get back on their feet.

“That was really a defining moment for me. I knew then that if I wanted to do more in this field, I had to go back to school and get my master’s degree,” says Williams, who enrolled in the SSU master of social work program in Fall 2015.

Soon after matriculating at Savannah State, Williams learned of a unique opportunity for undergraduate and graduate social work students: the Title IV-E grant program.

Funded by Georgia State University and the Georgia Department of Family and Children Services (DFCS), Title

IV-E gives five BSW and 10 MSW students at SSU an opportunity to receive financial and academic support while preparing for careers with DFCS.

Students selected for the competitive program take specialized courses in child welfare and fulfill a mandatory number of hours interning with DFCS. The program covers the students’ tuition and books, and, in turn, the students must agree to work for DFCS for two years post-graduation.

Williams is in her last semester as a DFCS intern, currently working in the agency’s foster care division, a position she hopes to continue during her two-year career with the agency.

“Foster care has been intriguing. It further makes me want to be in the social work field,” Williams says. “There are so many kids in the system right now who need that stability, and unfortunately there aren’t enough foster homes for a lot of them to have a stable environment. My goal is going to be to be the best case manager I can be and to help those kids find the stability that’s needed for them to be productive and successful in life.”

While Williams feels blessed in her own life — she’s been married to her husband, Ranell Williams Jr., for 16 years, has five children and is an active member of First St. Peter Baptist Church and Delta Sigma Theta Sorority — she knows that she must step outside of herself when helping her clients.

“I’ve always felt as a social worker, it’s important to meet the clients where they are and to be able to understand what they’re going through from their point of view and not base it on what I’ve experienced growing up,” Williams says. “There’s no way for me to internalize what they’re doing based on what my upbringing was.”

That feeling was cemented when Williams joined several Savannah State students last summer for a study abroad trip to Africa. Led by Roenia DeLoach, Ph.D., interim chair of the department of social work, students

spent several weeks in Accra, Kumasi and Cape Coast in Ghana and visited various locations in Liberia for the final week of the trip.

While in Kumasi, a large metropolitan region in Ghana’s Ashanti region, Williams and other Title IV-E students were given the unique opportunity to visit a social services agency, where they observed a case in which a family was torn apart after the husband brought in a second wife — an act that is not legal in Ghana but is accepted in certain tribes. The social services process was completely different from what Williams had experienced in the U.S. In addition to having no access to computers at the agency and relying upon handwritten notes and stacks and stacks of files, the final ruling was left to the chief of the family’s tribe. His ruling, it was determined, would supersede that of the agency.

Williams and the group also had profound experiences when they visited several orphanages in West African nations.

“At one orphanage, I couldn’t complete the tour because it was so overwhelming to see the kids,” Williams says. “They don’t have the medical care that we have. They don’t have the resources that we have. They pretty much are just existing. While we have issues here, our kids still get the best care. As social workers, we know what resources our clients need based on their needs and what we have to do to make things a little better for them.”

With that perspective and the experience she is receiving at DFCS, Williams is ready to tackle a full-time career as a social worker. She plans to obtain an LMSW license even though it’s not required in her field and hopes to one day work for either the Department of Juvenile Justice or the Department of Veterans Affairs. □

FROM THE HEART



When Suman Niranjn, Ph.D., was a young boy in India, he was fascinated with trains, spending his days reading books about steam engines and watching locomotives chug their way through his hometown of Hyderabad. Today, as an associate professor in Savannah State's College of Business Administration and director of the university's Interdisciplinary Transportation Studies (ITS) program, Niranjn teaches students how trains — and other modes of transportation — are part of the complex supply chain process.

“Things are getting more complex and complicated, especially with millions and billions of data points available for every single organization,” says Niranjn, who wrote his doctoral thesis on large-scale supply chain inventory optimization. “Being able to analyze data and being able to do it in such a way that provides meaningful patterns, which can then be utilized in the decision-making process, requires you to have skills in interdisciplinary areas.”

That interdisciplinary approach has served Niranjn well since joining the Savannah State University faculty in 2010. In addition to teaching and overseeing the ITS program at Savannah State, he serves as coordinator of the university's Global Logistics and International Business program and was integral in launching the university's ITS certificate program in Spring 2017.

Niranjn believes that students who are well-versed in multiple disciplines will be more successful in their careers, especially if they plan to enter the field of transportation or data analytics.

“Things are becoming more and more interdisciplinary. Our students need to be prepared. Data analytics and transportation are fields that require expertise in not just one discipline, but in multiple disciplines,” explains Niranjn, who received a bachelor of engineering degree in electronics and communication engineering from Visvesvaraya Technological University in India and a master of science degree in human factors engineering and a Ph.D. in engineering with a focus in industrial and human systems in 2008 from Wright State University in Ohio.

The Transportation Studies Certificate program was the first step in Savannah State developing a focus on interdisciplinary transportation studies. Funded by a \$399,548 grant

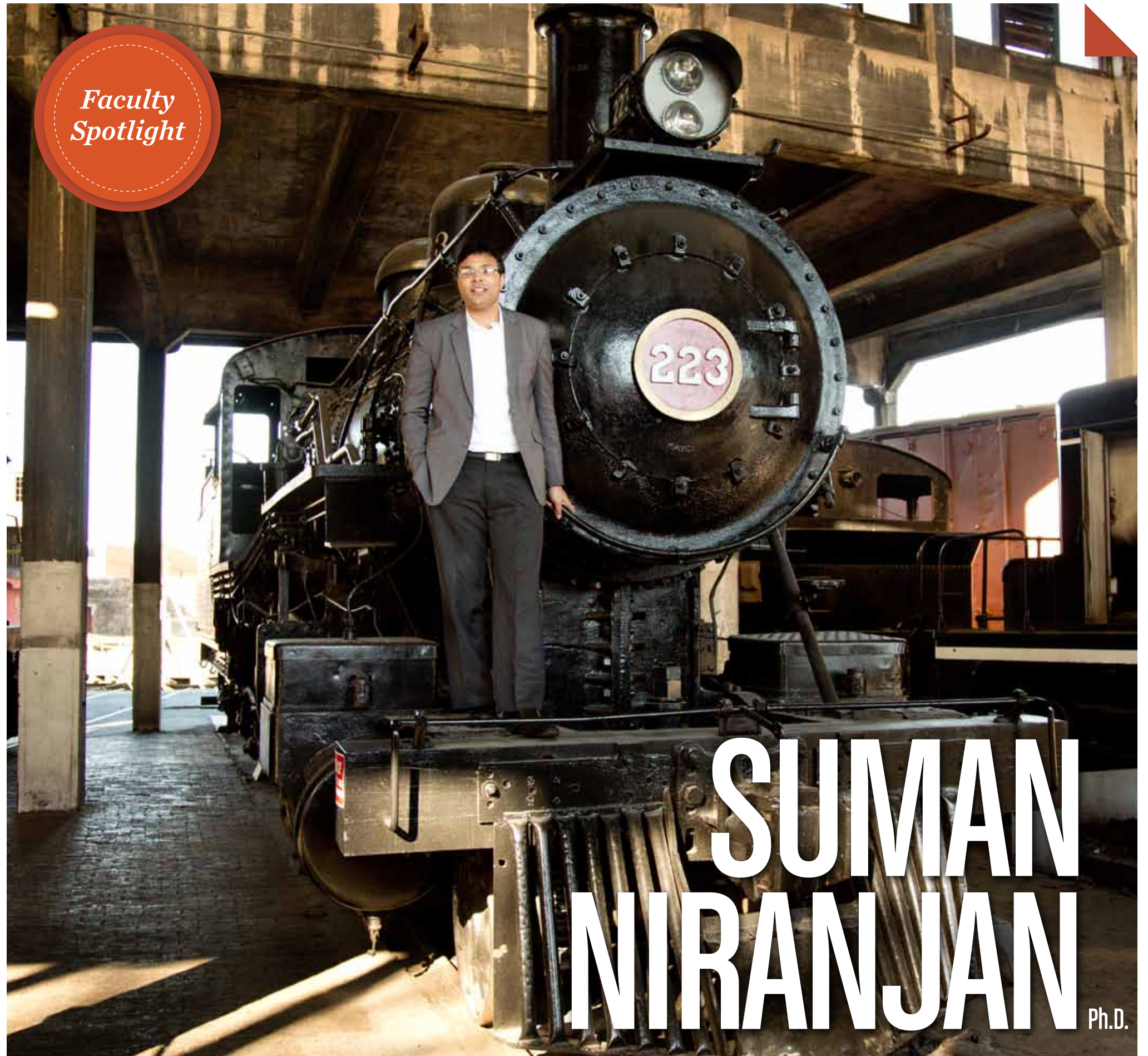
from the National Science Foundation's HBCU-UP program, the Targeted Infusion Project in Interdisciplinary Transportation Studies (TIP-ITS) program enabled the university to develop and launch the certificate program — the first of its kind in the Savannah area. In addition to paving the way for the certificate program, TIP-ITS, which targets both STEM and non-STEM majors, also includes components for faculty development and student research. The program recently received a supplemental award of \$78,276 for additional faculty professional development and student research opportunities. Niranjn is one of six faculty members from several disciplines who oversees the grant program.

Niranjn says the ITS certificate is just the beginning of Savannah State's interdisciplinary transportation and data analytics offerings. He is currently working with a team from across the university to launch a certificate program in data analytics, a master of science degree in interdisciplinary data analytics, and a master of science in transportation and logistics systems. The latter degree program, which will tentatively launch in Fall 2018, will include a traditional track that will focus on the civil engineering and materials side of transportation, along with an online track that will focus on traffic and traffic engineering. Niranjn hopes that the master's degree program will eventually open the door for the university to create a center of excellence in data analytics, which will cater to many disciplines including transportation.

“It would be good for the entire community,” Niranjn says, noting that the Savannah area is a hub for transportation thanks to the confluence of the Georgia Ports, railway system and highway system.

Though the creation of a center is a few years down the road, the footwork that will lead to its creation has already begun, and the entire university community is supportive.

“For the (proposed) interdisciplinary data analytics grant and the Targeted Infusion Project in Interdisciplinary Transportation Studies grant, I have support from deans of the three colleges, the provost's office and president of SSU, without which none of this is possible,” Niranjn says. “It is teamwork. The buzzword is interdisciplinary.” □



SUMAN NIRANJAN

Ph.D.

Savannah State University alumna Sha-letha Holmes received a Ph.D. in biomedical sciences with a concentration in pharmacology and neuroscience from the University of North Texas (UNT) Health Science Center in the time it takes most students to complete an undergraduate degree. The Midway, Ga., native credits her experience at SSU, along with having a supportive committee in graduate school, with helping her earn her doctorate quickly and tackling the rigors of the advanced degree program.

"I succeeded in core classes, advanced courses, proposals, qualifying exams, research, publications and completed the program with a dissertation within approximately four-and-a-half years," Holmes says. "I believe that the professors in the chemistry program (at SSU) and my research mentor, Dr. Hua Zhao (chair of the chemistry department), helped to provide the experience of research and challenging coursework necessary for me to excel in graduate school."

Holmes, who considers SSU her family's alma mater, received several scholarships as an undergraduate, including the State of Georgia HOPE Scholarship, the AT&T Foundation Scholarship, and Savannah State University's Gala Scholarship and William Thomas Ewing Endowed Scholarship. During her four years at the university,

she participated in the Peach State Louis Stokes Alliance for Minority Participation (PSLSAMP) and Research Infrastructure in Minority Institutions (RIMI) programs. Through the grant programs, Holmes had the opportunity to engage in high-level research and even travel to The Ohio State University during the summers of 2009 and 2010 to intern in the departments of pathology and neuroscience.

"My academic experience was amazing, I had great professors mentor me throughout my academic career at SSU," Holmes says. "My professors in the chemistry program always encouraged confidence, hard work and independence."

Holmes graduated from Savannah State in May 2011 with a bachelor of science degree in chemistry. In addition to graduating magna cum laude, she was a member of the Golden Key International Honour Society SSU Chapter and the Alpha Kappa Mu Honor Society.

Holmes continued to earn honors during her graduate career at the UNT Health Science Center. She received the American Physiological Society: Physiology and Gender Travel Award in 2015, was awarded intramural funding through the National Institutes of Health (NIH) Neurobiology of Aging (NBA) Training Grant from 2013-15, and received the NIH Minority Opportunities in Research and Education (MORE)

Predocctoral Fellowship in 2013. She also was inducted into Sigma Xi, an international honor research society, at the UNT Health Science Center.

Holmes was awarded her graduate degree from the UNT Health Science Center in December 2015 and completed a post-doctoral research fellowship at the university's Institute for Healthy Aging, Center for Alzheimer's and Neurodegenerative Disease Research in 2016. In April 2016, she accepted a position as a clinical research associate at Medpace in Dallas, Texas. In her current position, Holmes monitors clinical trials for patient safety and protocol compliance, among other tasks.

Holmes says that her experiences engaging in research as an undergraduate at Savannah State, and specifically her relationship with her mentor, continue to benefit her today.

"Having great mentors at both SSU and UNTHSC who encouraged critical thinking helped me to better understand clinical trial protocols," she says.

Holmes hopes that future SSU students will follow in her footsteps and take advantage of all of the resources and opportunities that come their way. "Always be confident and open to experience different opportunities to better understand what you seek in your future career." □

Student Voices

Growing up, I enjoyed all of my science classes and the teachers who taught them. I had dreams of being a pediatrician until one Christmas break when I volunteered at an elementary school and just fell in love with the experience. When I found out that Savannah State University was launching a teacher education program, I immediately changed my major. Since being in the program, I have learned so many things and have been introduced to so many opportunities that will help me as a future educator.

This past summer, I had the opportunity to participate in the Texas State NASA STEM Educator Professional Development Collaborative (EPDC), which was held at the NASA Kennedy Space Center in Cape Canaveral, Fla. The Texas State NASA STEM EPDC is under the NASA MUREP MEI Program, which caters to minorities at Historically Black Colleges and Universities, Hispanic-Serving Institutions, and Tribal Colleges and Universities. This particular EPDC was for undergraduate students who were considered pre-service teacher candidates to teach them ways of doing lesson plans, differentiate instruction, and also network and meet other students from different colleges and universities.

Before participating in the five-day institute, all students and faculty participants were required to complete eight hours of online

professional development prior to the institute and an additional eight hours of online professional development following the institute. During those eight hours of webinars, we learned about all of NASA's programs and how to integrate NASA into your lessons. This professional development opportunity allowed me to meet other pre-service teachers from Albany State University, Florida A&M University, Broward College and even students from two universities in the Virgin Islands.

Over the course of the week, we learned about the different aspects of the education program at the Kennedy Space Center. We also learned different tips on lesson planning, how to integrate NASA resources into our future busy classrooms and how to differentiate instruction with English language learners. We also did a lot of hands-on activities that we could use in our future classrooms. I really enjoyed the many hands-on activities, because I believe that learning should be fun for both the educators and students. □

Erica Woods is a senior biology major with a concentration in secondary education from Atlanta.

ERICA WOODS



SHALETHA HOLMES Ph.D.

Alumni Spotlight



Photo courtesy of Shaletha Holmes

Where Are They **now?**



Photo: Desmond Jackson

KRISTOPHER DRUMMOND

Issue: Spring 2014

Article: “Bridge to a Brighter Future” – Drummond shared his experiences participating in SSU’s Bridge to Research in Marine Sciences Research Experience for Undergraduates (REU) eight-week summer program.

Degree: B.S., marine sciences, 2015

What he’s up to now: Drummond is an environmental technician for S&ME, an engineering design and consulting firm in Kennesaw, Ga. Drummond is responsible for groundwater sampling of underground storage tanks, methane monitoring of landfills, air sampling of asbestos abatement, phase 1 site analysis and remediation system installation, among other tasks.



Photo courtesy of Devonte Cliett

DEVONTE CLIETT

Issue: Spring 2015

Article: “Student Voices” – Cliett wrote an essay in *Arising* about his experience traveling to the U.K. to study abroad at Nottingham Trent University.

Degree: B.B.A., global logistics and international business, 2015; M.S., entertainment business, Full Sail University, 2016

What he’s up to now: Cliett is a receiving manager for Walmart DC 7016 in Gordonsville, Va. In his role, Cliett manages a team that receives all the inbound frozen dairy deli freight for Walmart stores in Virginia.

Since *Arising* debuted in 2013, the publication has featured numerous students who have taken advantage of Savannah State University’s research and grant programs. We’re catching up with a few of them this year to see what they’re up to.



Photo: Desmond Jackson

BRITTANY BUSH

Issue: Spring 2015

Article: “SSU’s Research STARS” – Bush was one of two students profiled in an article about SSU’s Minority Access to Research Careers Undergraduate Student Training in Academic Research (MARC U-STAR) program. She also appeared in the same issue of *Arising* in an article titled “Lending a Helping Hand” about the university’s Mentoring and Research Programs.

Degree: B.S., biology, 2015

What she’s up to now: Bush is a second-year student in the Morehouse School of Medicine’s master of biomedical research (MSBR) program, with a research area in neuroscience. After graduation, she plans to work for a medical diagnostic company and start medical school in fall of 2018.

TIFFANY VILLANUEVA

Issue: Spring 2016

Article: “True Chemistry” – Villanueva was one of several students featured in an article about Pascal Binda, Ph.D., an associate professor of chemistry, and Kai Shen, an assistant professor of chemistry and forensic science. Villanueva assisted Shen with research on a U.S. Department of Defense grant to study the role of proteins such as metavinclin in cellular function.

Degree: B.S., forensic science with a concentration in chemistry, 2016

What she’s up to now: Villanueva is a first-year student in the Morehouse School of Medicine’s Ph.D. program in biomedical sciences. She hopes to gain problem-solving and experimental design skills during the program, which she anticipates completing in 2020 or 2021, and eventually work in the field of academia, industry or government.

GRANT FUNDING *at* SSU

FUNDING AGENCY	PRINCIPAL INVESTIGATOR	GRANT	DURATION	AWARD
U.S. Department of Education	Dedra N. Andrews	Title III	2012-17	\$16,310,372
U.S. Department of Education	Dedra N. Andrews	SAFRA 2015-2020	2015-20	\$5,653,723
U.S. Department of Education	Amit Arora, Ph.D.	Culture's Impact on Consumer Responses to Visual vs Verbal Anthropomorphism	2016	\$2,000
U.S. Substance Abuse and Mental Health Services Administration	Jacqueline Awe	Project Zero - Because 1 Suicide Is Too Many	2016-17	\$7,500
U.S. Department of Defense/Army Research Office	Pascal Binda, Ph.D.	Design and Synthesis of New Heteroleptic Lanthanide Complexes as Catalysts for Ring-Opening Polymerization of Naturally Renewable Unsaturated Gamma Lactones into Cross-Linkable Biodegradable Polyester	2015-18	\$332,633
U.S. Department of Homeland Security/Mississippi State University	Qian Chen, Ph.D.	Scalable Distributed Event and Intrusion Detection Systems for Cyber Physical Power Systems	2017	\$26,429
National Science Foundation	Chellu Chetty, Ph.D.	HBCU-UP MAGEC-STEM PLUS	2009-17	\$2,138,394
National Science Foundation	Tara Cox, Ph.D.	Bridge to Research in Marine Sciences: A Summer REU Program in Savannah, Georgia	2015-20	\$427,437
U.S. Department of Education	Kisha Cunningham, Ph.D.	iCore Project	2015-17	\$56,000
National Science Foundation	Kisha Cunningham, Ph.D.	SSU/STC Noyce Teacher Scholarship Program	2014-19	\$1,421,715
U.S. Department of Health and Human Services/Health Resources and Services Administration	Roenia DeLoach, Ph.D.	Behavioral Health Workforce Education and Training for Professionals and Paraprofessionals	2014-17	\$659,554
National Science Foundation	Sue Ebanks, Ph.D.	STEP Center InTeGrate	2015-16	\$49,399
Georgia Department of Natural Resources	Chandra Franklin, Ph.D.	Cycle 18 A New Technology to Quantify and to Predict the Loss or Recovery of Marsh Vegetation Using Rhizome Viability Index, Year 2	2015-17	\$60,000
U.S. Department of Education	Gary Guillory, Ed.D.	Student Support Services	2015-20	\$1,447,522
NOAA/University of Maryland Eastern Shore	Dionne Hoskins, Ph.D.	LMRCSC	2016-17	\$280,217
Consortium for Ocean Leadership	Dionne Hoskins, Ph.D.	Stingray Competition	2016-17	\$9,000
Federal Highway Administration	Roxana Javid, Ph.D.	Dwight David Eisenhower Transportation Fellowship Program	2016-17	\$35,000
National Institutes of Health	Cecil Jones, Ph.D.	MARC U-STAR	2012-17	\$790,629
National Science Foundation	Amanda Kaltenberg, Ph.D.	RIA -Physical Forces Impacting the Temporal Viability of Mesopelagic Prey at the Cape Hatteras Marine Top-Predator Diversity Hotspot	2016-19	\$282,106
U.S. Department of Education/USG	Mary Kropiewnicki, Ed.D.	GEAR UP Georgia	2016-21	\$429,572
Governor's Office of Student Achievement/Tift Co. Schools	Jonathan Lambright, Ph.D.	Coding Across Georgia	2016-18	\$10,000
National Science Foundation	Jonathan Lambright, Ph.D.	Targeted Infusion Project in Interdisciplinary Transportation Studies (TIP-ITS) (including supplement)	2015-18	\$477,824
Georgia Department of Education	Jonathan Lambright, Ph.D.	Enhancing the Ability of Middle School Educators to Improve Students' Achievement in Science	2014-17	\$571,724
National Aeronautics and Space Administration	Jonathan Lambright, Ph.D.	NASA Space Grant College and Fellowship Program	2015-18	\$16,000
U.S. Department of Commerce	Mehran Mazari, Ph.D.	Resilience of Transportation Infrastructures to Extreme Weather Events in Coastal Georgia	2016-17	\$9,769
National Science Foundation	Mohamad Mustafa, Ph.D.	Peach State LSAMP - Extending the STEM Pipeline in the Peach State: Mentorship, Research and Graduate School	2016-21	\$450,000
National Science Foundation/UGA	Mohamad Mustafa, Ph.D.	Collaborative Research: An Integrated Approach to Retain URM Students in STEM Disciplines	2016-18	\$32,411
U.S. Department of Education	Emmanuel Naniuzeyi, Ph.D.	Ghana: History, Culture and Geography Bridging the Past to the Present and the Future	2015-17	\$91,236
U.S. Department of Education	Zenobie Purnell	Educational Talent Search	2016-21	\$2,292,000
U.S. Department of Education	Bobby Roberts Jr.	Upward Bound	2013-18	\$2,925,962
U.S. Department of Energy	Kenneth Sajwan, Ph.D.	Waste Management Education	2017	\$150,000
U.S. Substance Abuse and Mental Health Services Administration	Linda Samuel, Ph.D.	Savannah State University Know to Live	2015-18	\$863,402
Georgia Department of Human Services/Georgia State University	Julius Scipio, Ed.D.	Title IV-E Child Welfare Grant Education Program	2015-18	\$453,445
National Institutes of Health	Kai Shen, Ph.D.	Metavinculin Regulation of Cell Cytoskeleton Remodeling in Response to Substrate Stiffness	2014-18	\$296,692
U.S. Department of Defense/Army Research Office	Kai Shen, Ph.D.	The Mediating Role of Metavinculin on the Mechanical Properties of Extracellular Matrix and Smooth Muscle Cells	2015-18	\$320,972
U.S. Department of Defense/Army Research Office	Kai Shen, Ph.D.	High School & UG Research Apprenticeship Program	2017	\$6,000
U.S. Department of Defense CDMRP Gulf War Illness	Kai Shen, Ph.D.	Sigma-1 Receptor Agonists as a Novel Therapeutic for Brain Mitochondrial Dysfunction in Gulf War Syndrome	2017-20	\$673,551
University of the West Indies	Paramasivam Sivapatham, Ph.D.	Developing a Strategy for the Mitigation of Cadmium in Cocoa	2015-18	\$208,615
Gilead Sciences, Inc./Howard University	Felicia Tuggle, Ph.D.	HBCU HIV Prevention Program (H2P)	2017	\$1,500
U.S. Department of Education	Tamara Waterman	GEAR UP DeRenne	2011-18	\$2,800,000
Army Educational Outreach Office	Asad Yousuf, Ed.D.	JETS Unite Program	2017	\$17,180
National Institutes of Health	Hua Zhao, Ph.D.	RISE Option 1	2012-17	\$1,123,953
American Chemical Society	Hua Zhao, Ph.D.	Tailoring Ionic Liquids for Deep Desulfurization of Liquid Fuels by Oxidative Extraction	2015-18	\$70,000
Camille and Henry Dreyfus Foundation	Hua Zhao, Ph.D.	Henry Dreyfus Teacher-Scholar Award	2012-18	\$60,000

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