

ARISING

The Savannah State University Journal of Research

SPRING 2016

THE PATH TO
SUCCESS

TRUE
CHEMISTRY

HOMeward
BOUND

EXTRACTING
THE FUTURE
OF FUEL

THE ROAD TO

SUCCESS



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On the cover: Ja'Andra Wheeler, a senior Africana studies and history major from Atlanta, is one of two students and 11 educators traveling to Ghana in May as part of SSU's Ghana Group Project Abroad, funded by a U.S. Department of Education Fulbright-Hays Group Project Abroad grant. Wheeler is donning a traditional Ghanaian dress, courtesy of Roenia Deloach, Ph.D., LMSW, associate professor of social work.

MESSAGE FROM THE PRESIDENT

I'm proud to present you with the fourth edition of *Arising*, Savannah State University's magazine about grant and research programs on campus. Over the past four years, we have brought you compelling articles about the cutting-edge research taking place in science labs across campus, introduced you to our stellar students and their faculty mentors, and shared inspiring stories of community outreach. This issue of *Arising* promises to be just as engaging.

Gracing the cover of this year's magazine is Ja'Andra Wheeler, a senior Africana studies and history major from Atlanta. Ja'Andra is one of two Savannah State students who will join SSU faculty members and teachers from the Savannah-Chatham County Public School System on a four-week trip to Ghana. Funded by a U.S. Department of Education Fulbright-Hays Group Project Abroad grant, the Ghana Group Project Abroad (GGPA) will expose participants to Ghanaian culture and customs. During their month-long journey, the two students and 11 educators will attend workshops and lectures on Ghanaian history and culture, visit historic sites, meet with Ghanaian leaders and officials, learn the Twi language and conduct research on topics related to their area of interest. Once home, the GGPA participants will infuse their new-found knowledge into the curriculums at Savannah State, our public schools and other educational institutions, exposing a new generation of students to West African history and culture.

The 2016 issue of *Arising* also features articles about innovative research being conducted by faculty members in SSU's College of Sciences and Technology. We are especially proud of the two grants awarded to chemistry professors Pascal Binda, Ph.D., and Kai Shen, Ph.D., by the U.S. Department of Defense. These prestigious grants enable our students to engage in high-level research projects that will enrich their academic coursework and help prepare them for graduate school and careers in the field.

Finally, I'm pleased to introduce you to an exciting new grant program that involves faculty participation and curricular support from across the college. The Targeted Infusion Project in Interdisciplinary Transportation Studies grant, funded by the National Science Foundation's HBCU-UP program, will give students the opportunity to earn a certificate in transportation studies. The unique interdisciplinary grant program will also pair students with organizations such as the Chatham Area Transit Authority, Georgia Department of Transportation and Georgia Ports Authority, creating an invaluable opportunity for our students to gain hands-on experience with leaders in the transportation industry.

Please enjoy this issue of *Arising*. I'm confident that once you finish reading through the magazine, you will, indeed, be Savannah Proud!

Sincerely,
Cheryl D. Dozier
President





Above: Many GGPA participants visited the Dozier home. Pictured from left to right: SSU student Tyree Wright; SSU professor Boniface Kawasha, Ph.D.; SCCPSS teacher Rachel Hopkins; SSU professor Adrian Anderson, Ph.D.; SCCPSS teacher Jacilyn Ledford; SSU President Cheryl D. Dozier; SSU professor Kameelah Martin, Ph.D.; SSU professor Benn Bongang, Ph.D.; SSU IEC Director Emmanuel Naniuzeyi, Ph.D.; SCCPSS teacher Arlette Houghton-Parker; SCCPSS teacher Carey Bray; and SSU professor Kisha Cunningham, Ph.D.

HOMeward BOUND





On an unseasonably warm Saturday afternoon in February, teachers, professors and students gather in the home of Savannah State University President Cheryl D. Dozier. With the smell of traditional Ghanaian cuisine wafting through the hallways, she leads the group through her home, a bright, airy space adorned with relics from the Dozier family's travels through Africa.

As the group makes its way from room to room, Ghana native and SSU graduate Jonas Subaar beats a Fontonfrom, a traditional drum from Ghana's Ashanti Region, while SSU Professor Kisha Cunningham, Ph.D., demonstrates an African Fanga dance.

The group pauses in the foyer and listens intently as trip consultant and Ghana native Kwesi DeGraft-Hanson, Ph.D., explains the significance of drumming. Drums, DeGraft-

Hanson says, are central to Ghanaian culture. When Africans were brought to the U.S. as slaves, plantation owners banned the use of the instrument because it could be used as a means of communication.

The group has gathered at the home of Dozier and her husband, Arthur Dozier II, to learn more about Ghanaian culture in preparation for a trip to the West African country in May.

Bringing Ghanaian culture to American classrooms

The Ghana Group Project Abroad (GGPA), funded by a U.S. Department of Education Fulbright-Hays Group Project Abroad grant, aims to improve modern foreign language and social studies curriculum, course offerings and performance in Savannah's educational institutions. Participants include

teachers from the Savannah-Chatham County Public School System, along with SSU professors and students.

The GGPA trip is especially significant because of the city of Savannah's relationship to Ghana.

"The city of Savannah used to be a major port city during the Atlantic slave trade. Here in what is called the Gullah-Geechee Corridor, you find a large concentration of African-Americans, and many of them have traditions and culture that have similarity with the traditions and culture in the Western coast of Africa," says trip organizer Emmanuel Naniuzeyi Sr., Ph.D., professor of political science and director of SSU's International Education Center. "Those enslaved Africans who were brought to the United States, their cultural aspects are still visible in this area. But a lot of African-Americans



do not understand the connections that exist between the East Coast of the United States and the West Coast of Africa.”

Naniuzeyi believes that by having local educators visit Ghana and experience the culture first hand, they will be able to better enhance the teaching of social studies and language in local educational institutions. Among the 13 GGPA participants who will travel to Ghana in May are Naniuzeyi, five SSU professors, two SSU students who plan to pursue careers in education, four SCCPSS teachers and Ann Levett, Ed.D., SCCPSS's chief academic officer.

During the four-week trip, the group will travel throughout the country, attending workshops and lectures, visiting historical sites and learning Twi, a native language of the Ashanti people. A highlight of the trip will be a meeting with Otumfuo Nana Osei Tutu II, king of Ghana's Ashanti Kingdom.

GGPA participants will also spend time conducting independent research related to their area of expertise. At the end of the program, they will write a report on their studies, which they will present to the U.S. Department of Education and the SCCPSS.

Ja'Andra Wheeler, a senior Africana studies and history major from Atlanta, has studied African culture throughout her four years at SSU but has never had the opportunity to travel to the continent.

“This is my first time ever leaving the country,” says Wheeler, who hopes to one day teach Africana studies on the college level. “I'm excited to see everything in person. It's different when I watch videos in class and see it in my textbooks. But to actu-

ally see it in person will be a life-changing experience.”

For Jacilyn Ledford, a social studies teacher at Savannah Early College High School, the trip will be an opportunity to incorporate her own personal experiences into her curriculum.

“It's important that we're able to show our students other cultures in order for them to empathize and have more of a worldly view,” Ledford says. “(African culture) is already in the standard (curriculum), but we're going to be able to go deeper with it and show our kids through relics and stories and personal experience. They're going to be able to do activities and have lessons in the classroom that expand on their knowledge of Ghana and Africa.”

Levett, who is tasked with providing leadership and guidance to district schools in pursuit of academic excellence, says the SCCPSS is proud to be a partner in the project. “We are honored to send a talented and committed group of educators to represent our district and SSU as they study Ghana and its history, literature, language and culture. Each participant has agreed to share his/her experience and use his/her knowledge to enhance the curriculum offered in K-16 in our community,” she says.

Benn L. Bongang, Ph.D., professor and chair of the political science department at Savannah State, plans to study Ghana's political structure during the trip and use his knowledge to give his students a more-well-rounded education.

“I want to incorporate [into my classes] what is lacking in most of the texts we use

today, and what is lacking is a very comprehensive or informational content that talks about African political structures,” Bongang says. “We draw examples mostly from Western countries, especially here from American political institutions, so it will be interesting to have a syllabus that provides students an opportunity to see structures that are very different from the ones they are familiar with and also for them to begin to appreciate the political challenges that some countries face that are different than the ones that we have here.”

Ready for flight

The GGPA participants file into the Doziers' kitchen, where they load their plates with traditional Ghanaian dishes, which have been prepared with love by caterer Joanne Ofosua, a Ghana native who resides in Savannah. The attendees enjoy every bite, from goat stew to fried plantains.

The group will have several more meetings before they travel to Ghana in May, each time covering a topic relevant to the trip. At the Dozier home, they learn important lessons from the president and her husband about Ghanaian culture, everything from being sure to ask for permission before taking photographs to how to barter for the unique wares they find in local markets.

Dozier implores the participants to take advantage of their unique opportunity and to bring the lessons they learn back home.

“Understand the meaning of Sankofa,” says Dozier. “Go back and learn the past — the history, the people, the culture — so that you can pass it on to future generations.” □



BRINGING THE WORLD TO SSU

During the Spring and Summer 2015 semesters, more than 60 Savannah State University students boarded planes and traveled overseas to participate in study abroad and exchange programs at universities around the world. The students spent time immersing themselves in other cultures and expanded their educational horizons thanks to SSU's International Education Center (IEC).

"The purpose of the IEC is to enhance our students' international experience and prepare them to be global citizens," says IEC Director Emmanuel Naniuzeyi Sr., Ph.D. "At every organization, wherever you work, you find people from different cultural backgrounds, so we have to prepare our students."

To help students become global citizens, the IEC encourages participation in study abroad and exchange programs. SSU currently has Memorandums of Understanding with 32 universities around the globe, enabling students to travel to institutions in Africa, Central and South America, Europe and Asia, where they take classes and immerse themselves in the local culture.

In addition to sending students abroad, each year the IEC welcomes students from around the

globe to study and become a part of the Savannah State community. The university currently has more than 70 international students on campus from 30 countries, among them Burkina Faso, Canada, China, Ghana, India, Kazakhstan, Mexico, Russia, South Korea, Vietnam, Nigeria, Liberia and Sierra Leone.

"(International students) promote diversity in the campus community. Our students sit in the classroom with students from other countries, and they challenge our students," Naniuzeyi says.

In January 2015, the IEC launched the English Language Institute, which brings even more international students to the SSU campus. The program is designed for non-native English speakers and includes intensive coursework in listening/speaking, writing/grammar, reading and computer-assisted language learning. Once the students have successfully completed their English-language classes, they can begin a course of study at SSU.

The IEC also sponsors a faculty exchange program in which professors teach at foreign universities. Co-curricular activities promoted by the IEC include the Model United Nations, Model African Union and Model NATO.

Opposite page, left: Dozier shares pictures of her travels with Ghana native Phillip Acheampong, Ph.D., a lecturer at Central Texas College who serves as a trip consultant. Opposite page, right: Ghana native and trip consultant Kwesi DeGraft-Hanson, Ph.D., a landscape architect and educator based in Atlanta, addresses GGPA participants.

Above, clockwise from left: Ghana native and Savannah resident Jonas Subaar, who facilitated a workshop for GGPA participants, demonstrates Ghanaian drumming techniques on a Fontonfrom; Guests were treated to a traditional Ghanaian feast; IEC director Naniuzeyi interacts daily with students like Esther Keie, a Burkina Faso native who is taking classes at SSU's English Language Institute.





THE PATH TO SUCCESS

When Aaron Johnson first arrived at Savannah State University in 2012, the Augusta, Ga., native was overwhelmed. While juggling his classes was easy in high school, Johnson struggled to manage his new schedule. One day during his sophomore year, a professor told him about Student Support Services, a program on campus designed to help students succeed academically. Today Johnson is excelling in his classes, tutors fellow Student Support Services participants in his spare time and will graduate in December with a bachelor of science degree in biology with a concentration in secondary education.

Student Support Services was started by the U.S. government in 1968 to help students from disadvantaged backgrounds. The program 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. Savannah State offers three TRiO programs on campus: Student Support Services, Upward Bound and Educational Talent Search.

Student Support Services has been operating at Savannah State University since 1992. Today, the U.S. Department of Education-funded program assists 175

students on campus, facilitating student success by providing services that promote academic excellence, degree program selection and completion, financial and economic literacy, cultural competence, and graduate and professional program application and enrollment. In 2015, Savannah State received more than \$1.4 million to continue the program through 2020.

“Our goal is to provide students with the support they need to help them matriculate and graduate,” says Gary Guillory, Ed.D., director of Student Support Services on the Savannah State campus.

SSU’s Student Support Services office

serves students who are from low-income backgrounds, first-generation college students or those with disabilities. All of the students must demonstrate the need for academic support.

Once in the program, students attend workshops on an array of topics such as time management, engage with faculty during critical thinking and discussion hours, receive academic advisement and tutoring, attend sessions on financial planning, and learn about graduate programs and the application process.

Student Support Services participants also have access to the Center for Success, a comfortable space in Whiting Hall where students can go to study, have access to resources and receive tutoring services. The space has served as a home away from home for Johnson, who has spent countless hours in the center attending workshops and studying.

“Student Support Services gave me somewhere outside of the library where I could do my work comfortably,” Johnson says. “It also gave me an environment of like-minded people. Everyone is doing homework or working on a project or assignment or doing something business-wise or just trying to do better.”

Johnson excelled in Student Support Services and today serves as one of the

program’s three student success coaches, tutoring classmates and guiding them in other aspects of college life.

Guillory says that the peer-to-peer coaching is one of the many reasons why Student Support Services has continued to succeed on the Savannah State campus. Based on recent statistics, 90 percent of students who utilized Student Support Services during the 2014-15 academic year were in good academic standing at the end of the year, and 76 percent of students re-enrolled in the university for the Fall 2015 semester.

“We serve students who are coming out of foster care, many of our students are coming from disadvantaged circumstances [facing] housing insecurity and food insecurity, some have experienced horrific violence in their lives,” says Guillory, who is assisted by a staff that includes Assistant Director Tameka McDaniel, Coordinator of Tutorial and Computer Services Lottie Scott, and Programming Specialist Desiree Johnson. “The program is very successful, even though students are coming from those very difficult backgrounds to achieve their college goals.”

For Shermia Fluker, a junior political science major from Augusta, Ga., Student Support Services has helped guide her on the path to graduate school and a professional career.

“I have taken advantage of the free work-

shops for example [on topics such as] financial aid assistance, critiquing your resume and learning how to pay back student loans,” says Fluker, who has used Student Support Services grant aid money to help pay for school.

Fluker and Johnson are two of many Student Support Services success stories. Program participants in recent years include Jordan Riles-Ogden, Miss Savannah State University 2010-11 who now works as a career development specialist at SSU, and Brittany Bush, an honor graduate who received the university’s prestigious President’s Second Mile Award in May 2015.

“Student Support Services helps students to realize their college success goals, and in doing so, we’re helping to change lives,” Guillory says. “We’re helping students build confidence in their future careers, in their personal and professional lives. We’re helping to produce productive citizens who will advance this democracy of ours.” □

Opposite page: Student Support Services Director Gary Guillory, Ed.D., (center) chats with Demeria Hugue, a senior marketing major from Savannah, and Corliss Best, a senior business management major from Savannah. Bottom left: Coordinator of Tutorial and Computer Services Lottie Scott assists Hugue and Best, while Guillory meets with Assistant Director Tameka McDaniel. Bottom right: Student Success Coach Aaron Johnson.



EXTRACTING THE FUTURE OF FUEL

By Meaghan Walsh Gerard

Someday, in the not-too-distant future, a small farm on Mars may be growing materials for biofuel using an invention developed at Savannah State.

One thing NASA is going to need for long-voyage space exploration is fuel — and plenty of it. And in order to sustain long-term colonies or studies, they need the ability to both create and store it.

So NASA has been exploring ways astronauts can manufacture fuel in space that will power outposts for long-term survival on other planets.

One of the ways the national space agency thinks this can be accomplished is through algae. Yes, that slimy, greenish stuff that grows in your birdbath might get the



Above: Associate Professor of Marine and Environmental Sciences Christopher Hintz, Ph.D., and former graduate student Amber Wilkinson show off their invention, which filters microorganisms from their culture media. Opposite page: A rendering of SSU's new marine sciences facility, slated to open in 2017.



next generation of scientists to new places in the solar system.

Since an astronaut would be farming the algae perpetually, the idea is to get some started, harvest most of it and then use a small amount to “seed” the next batch.

Algae is a fairly simple organism and has few needs for survival. It thrives on a bit of sun and water, but current methods for the harvesting process are notoriously difficult and often severely damage the algae itself, making it unusable. Some systems solve this problem — to remove the algae from its culture medium — but are very expensive and often require more energy than would ultimately be harvested.

When Christopher Hintz, Ph.D., associate professor of marine and environmental sciences at Savannah State, heard about NASA’s ideas for algae and biofuels, he applied for and received a grant to work on algae growth and collection. “Being able to have low effort, low energy ways to store solar energy in the form of biomass and bio-fuel is one possible solution we were exploring,” he says.

Hintz and Amber Wilkinson, a graduate student, were working on ways to collect and grow algae when Hintz inherited an old protein skimmer. When he plugged it in, Wilkinson noticed something unusual with the algae and had an idea. “Together, we realized the potential for a new process to filter micro-organisms from their culture media,” Hintz recalls.

Their version can be made with a few low-energy components, compressed air and some plastic pipe.

The two reconfigured the contraption and devised an entirely new way to harvest the algae without damage to the organisms. They “utilized a compressed air-lift pump to move the culture media and cells through the separation apparatus ... reducing energy consumption and improving efficiency,” Hintz explains.

Hintz soon realized they were on to something entirely new and began working with the university’s legal team and the Office of Sponsored Research Administration (OSRA) to apply for a patent. “We initially filed a provisional patent back in late 2010,” Hintz explains. More than five years later, SSU has been notified that the application was accepted and a patent will be issued for the process.

Hintz thinks there could be multiple applications for the discovery, not just for space travel. Pharmaceutical companies that need to make compounds and harvest yeast cells could benefit by being able to harvest without damaging cells.

It’s just one more way grant-funded research at Savannah State allows faculty and students to explore possibilities and tinker with new ideas. □



ON THE WATERFRONT

Direct access to local waterways has been a hallmark of Savannah State University’s marine sciences program since the program began more than three decades ago. The 60-foot dock behind the department’s building accommodates several boats and gives students the unique opportunity to conduct hands-on research in coastal and estuarine waters.

But because of the dock’s location on the shallow portion of a tidal creek and Georgia’s large tidal range, boat departures and arrivals are limited by the tides. That will soon change thanks to a new multimillion dollar marine sciences facility slated to open its doors in 2017.

Located a short distance from the SSU campus on Livingston Avenue, the new marine sciences facility will be constructed at the site of the former Italian Club. The land includes prime deep-water access, which will enable marine sciences faculty and students to conduct ship-based research and instruction any time of day.

The new site’s 17,000-square-foot building will feature state-of-the-art amenities including laboratories for dolphin survey, necropsy, fish ecology, environmental toxicology, ocean acidification, coastal biophysics, instrumentation and more.

While the Department of Marine and Environmental Sciences currently utilizes spaces in several buildings on campus, the new facility will enable all faculty to have dedicated research space to more fully engage students in the research process.

The new facility is one of two College of Sciences and Technology building projects to receive funding through the Georgia state legislature. The \$20.5 million project will also include the construction of a two-story, 30,000-square-foot building on the main campus that will house engineering technology and chemistry laboratories and feature lab and faculty space.

The groundbreaking for both buildings is expected to take place in 2016.



TRUE CHEMISTRY

In a chemistry lab at Savannah State University, Zakiya Barnes works with her faculty mentor, Pascal Binda, Ph.D., to conduct polymer research on the formation of biodegradable polyesters. Barnes, a senior chemistry major from Wichita, Kan., hopes the high-level research will help her reach her ultimate goal of joining the U.S. Navy's Nuclear Propulsion Officer Candidate program (NUPOC).

"(The NUPOC) program is one of the most intellectually challenging in the nuclear field," says Barnes, a self-proclaimed humanitarian who wants to protect her country's liberty by serving in the Navy's

nuclear division. "The skills that I acquire in Dr. Binda's lab really give me an advantage; I can apply the lab techniques and methods that I am learning now to the work I hope to do with the U.S. Navy."

Barnes is one of several SSU students working on U.S. Department of Defense-funded grant research with Binda and his colleague Kai Shen, Ph.D. The College of Sciences and Technology (COST) faculty members each received a grant from the Department of Defense (DOD) Army Research Office in 2015.

"To have two of our faculty members receive a U.S. Department of Defense grant at the same time speaks volumes about the caliber

of the faculty that we're bringing in to the college and what we're doing in terms of advancing research and instruction for our students," says COST Dean Jonathan Lambright, Ph.D. "One of the most important things is that both of these faculty members are well known for involving their undergraduate students in their research work."

Binda, an assistant professor of chemistry, received a three-year, \$332,633 grant from the DOD to develop a cross-linkable biodegradable polyester using a lanthanide catalytic system. If synthesized properly, the new fabric may have the ability to retain its shape, even when manipulated.

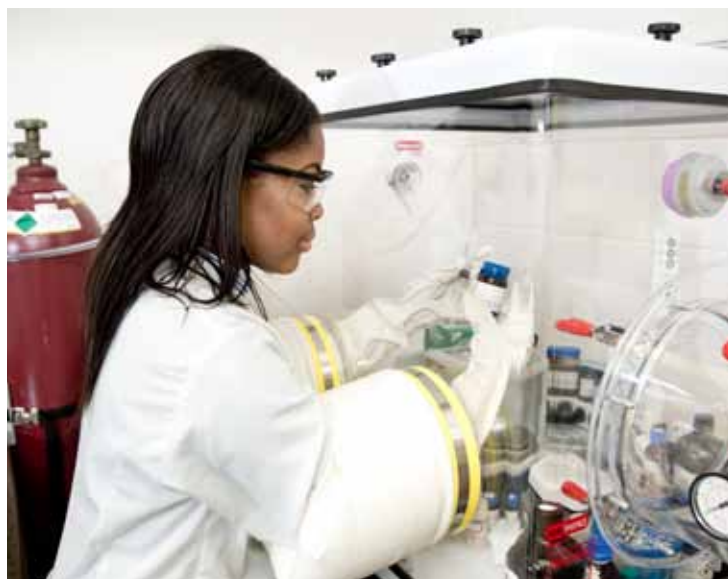
"Cross-linking polymer can help the military in many ways because of its shape memory. It can undergo high compression forces and extension and still regain its shape," Binda explains. "The ring-opening homopolymerization of alpha-methylene gamma butyrolactones has not been reported in literature."

Boat hulls and pipes are just some of the potential uses for this new "smart" material, which could be utilized in both military and civilian populations. Binda says the cross-linking process could also be used to improve other materials such as Kevlar.

To help develop the new smart material, Binda has enlisted Barnes and two other Savannah State students to assist with his research. Since joining Binda in his lab, the student researchers have conducted experiments on the formation of biodegradable polyester and have tested and used two different methods for forming the catalyst.

For Rasaan Ford, a sophomore chemistry major from Bronx, N.Y., the experience has not only given him invaluable research experience, it has also challenged him to find innovative solutions to new and recurring problems.

"The methods learned and reactions performed have given me the opportunity to expand my view of how the knowledge of chemistry can be applied," says Ford, who plans to pursue a Ph.D. in the field. "This research has really given me the chance to think about a problem in a group and construct many different methods as a means to solve the issue, as well as expand my horizons and knowledge of chemistry."



DeChristian Guthrie, a senior chemistry major from Atlanta, hopes to one day put the research skills she's learning in Binda's lab to use as a chemist for a major cosmetics company. "Gaining experience as an undergraduate research assistant will be instrumental to my growth as a chemist of the highest quality," she says.

The students not only assist Binda with his research, they also have an opportunity to attend conferences and present their research. Though they receive stipends for the time they spend in Binda's lab, what they gain from the collaborative research with their faculty mentor is immeasurable.

"You need to learn how to work as a team and how to contribute to your team and communicate your ideas. You need to learn to think outside the box," says Binda. "The student researchers learn the skills they need to succeed in the scientific community. (They learn to) review literature and to understand how to solve a problem when it arises using chemical knowledge that is learned from the university."

Binda and his student researchers are currently working on the first phase of research. During the second phase of the project, Binda will utilize the gamma ray facility at Oak Ridge National Laboratory in Oak Ridge, Tenn., one of his collaborators on the project.

Down the hall in a different chemistry lab in the Drew-Griffith science building, Shen and his student research assistants are working on a second U.S. Department of Defense grant. Shen received a three-year, \$320,972 grant to study the role of proteins such as metavinculin in cellular function. Metavinculin is a protein believed to play a critical role in cells sensing and responding to mechani-



Opposite page: Pascal Binda, Ph.D., (second from left), with his research assistants (from left to right) Zakiya Barnes, DeChristian Guthrie and Rasaan Ford. This page, left: Binda and Ford conduct research in Binda's lab in the Drew-Griffith science building. This page, above: Barnes utilizes a glove box in Binda's lab.



cal forces in their physical environment, from neighboring cells to physical stress.

The grant will enable Shen, his co-Principal Investigator Karla-Sue Marriott, Ph.D., associate professor of chemistry and forensic science, and five student researchers to better understand the sophisticated regulation of cell responses to mechanical forces.

“We want to look at what the mechanism is for the cell to sense and respond to (the) force (of metavinculin and other proteins),” says Shen, explaining that the DOD can utilize his research as a basis for designing and fabricating novel sensor systems for military applications.

To help facilitate his research, Shen is collaborating with the U.S. Department of Energy, which has granted him access to the Argonne National Laboratory (ANL) in Chicago. Shen will utilize the lab’s Advanced Photon Source — one of the brightest x-ray beams in the world — to analyze interactions between metavinculin and other focal adhesion proteins in the cellular system. Shen will also have access to the ANL’s Mira supercomputer, which will enable him to

simulate the complex cell signaling system.

Meanwhile back at Savannah State, Shen is working closely with his student researchers, who are utilizing high-tech lab equipment to investigate complex protein structures. The students have access to both a small-angle X-ray scattering and a Horiba Raman microscope, an instrument equipped with an ultra violet laser that enables them to analyze protein structure changes. The university acquired the high-resolution Raman microscope thanks to a \$331,997 U.S. Department of Defense/Army Research Office grant Shen and his colleagues received in 2014.

Like Binda’s student researchers, the students working alongside Shen receive a stipend for their work, attend conferences and present their research. The experience is invaluable as students prepare to enter graduate programs and pursue careers in the field.

LaTanya Downer, a senior chemistry major from Atlanta, says that the opportunity to work on Shen’s DOD grant will help prepare her for a doctoral degree in analytical chemistry by familiarizing her with graduate-level research and teaching her how to conduct literature review — a key component in doctoral degree programs.

“Working as a research assistant will benefit both my academic and professional career because it will provide necessary research methodology training and practical research experience, giving me a competitive advantage to start my career,” Downer says.

Savannahian Tiffany Villanueva, a senior forensic science major with a concentration in chemistry, believes her work studying the role of metavinculin will help her reach her goal of receiving a Ph.D. in biochemistry.

“(Working on the grant) most definitely already has benefited my academic and professional career. (It) has taught me the responsibility of conducting research, while learning how to better manage time. Additionally, working on this grant has also allowed me to obtain new skills in the lab, while allowing me to better perfect previ-



ously learned ones,” Villanueva says.

One of the most unique components of both Shen’s and Binda’s DOD grants is the forthcoming high school internship program. Both professors will select two high school students each to assist them with research. The students will spend eight weeks during the summer conducting research on the respective grant programs and will receive a stipend for their work.

“You start from high school, build the pipelines and you get them involved early in STEM research so that students can streamline into SSU,” Shen says.

Adds Binda, “You can only imagine how high school students can come and see the fancy things that we’re doing in science, and they’ll say, ‘wow, I can do research.’” □

Opposite page, top: Shen (center) with his DOD grant research assistants and other student research assistants (from left to right): Terrence Cumby, Raven Jessie, Edonna Johnson, Sakura McLaughlin (seated), Tiffany Villanueva, Rayne Clarke and LaTanya Downer. Opposite page, bottom: Villanueva and Johnson conduct research in Shen’s lab. This page: SSU Professor Pascal Binda, Ph.D.

LEADING BY EXAMPLE **Pascal Binda, Ph.D.**



When Pascal Binda, Ph.D., tells students that they can succeed despite the obstacles that may be in their way, he speaks from the heart — and from experience.

“I was inspired to be a professor when I was 10 years old,” says Binda, an assistant professor of chemistry at Savannah State University.

Born and raised in Cameroon in West Africa, Binda shared his dream with his father, who told him that he would need to obtain a Ph.D. if he wanted to land a position in higher education.

Binda was on his way to achieving his goal as a freshman at the University of Buea in Cameroon. But during his first semester, his

mother fell ill and was told by doctors that she wouldn’t survive. Binda’s father knew that his son was in the middle of final exams and chose to wait until they were completed to break the news that she was going to pass away.

“My father knew that if I wanted to be a professor, I needed a good GPA. His goal was not to destroy my college experience. He wanted me to do well on my final exams before informing me,” Binda says. “It was inspirational that my dad really believed in me like that. ... My dad told me that I should never abandon my education no matter what happens.”

Two months later during his second semester, Binda’s father had a debilitating stroke. Binda went back home to visit his father, who was unable to speak. In Cameroonian culture, doctors don’t typically level with family members when situations are grave. But Binda’s father was being treated by a Swiss doctor, who told the college freshman that his father was going to die.

“She did the best thing she could’ve done for me. She said, ‘You need to go back to school. There’s no point of staying here.’”

Binda thought about the wise words his father imparted to him just a few months before: “You cannot abandon your education because your future depends on it.”

He heeded his father’s advice and returned to school, obtaining a bachelor of science degree in chemistry from the University of Buea in 2001 and a Ph.D. in chemistry from the University of North Dakota in 2008.

Binda came to Savannah State in 2013, passing up a tenured associate professorship at another university so that he could have more opportunities to engage in research and work one-on-one with students.

“Our students are very smart. All they need is motivation,” says Binda, who keeps six chairs in his office to accommodate students who want to drop in and pick his brain. “You have to work in groups. You have to work in teams. You can’t survive alone in college.”

Binda is currently writing a book about his experiences.

Kelvin Frazier, Ph.D., was a fixture on campus during his undergraduate days at Savannah State University, conducting research in labs alongside professors, playing trombone in the SSU marching band and serving as a founding member of the Golden Key International Honor Society. Today Frazier, who received a Ph.D. from the Massachusetts Institute of Technology (MIT) in 2015, makes it a priority to visit campus and share his experiences with current students.

“Dr. Frazier is the epitome of the phrase ‘*Seriously Impressive*,’” says SSU President Cheryl D. Dozier. “His successes both in and out of the classroom serve as a model for our students and alumni, demonstrating the value of hard work, determination and family support. He is also a stellar example of the importance of engaging students in research and grant-funded programs.”

Frazier, a Savannah native who graduated from Windsor Forest High School, was a participant in SSU’s National Science Foundation-funded Minority Access for Graduate Education and Careers in STEM Program (MAGEC-STEM), a grant program focused on increasing the number of minority students who successfully complete their undergraduate degrees and continue on to advanced degree programs.

Through MAGEC-STEM, Frazier engaged in research with his faculty mentor Cecil Jones, Ph.D., an associate professor of chemistry, analyzing ways to enhance the use of fluorescence in photodynamic therapy, a key component in some cancer treatments.

Through MAGEC-STEM, Frazier had the opportunity to present his research at numerous conferences around the country and engage in off-campus research at the University of Connecticut and at Procter & Gamble.

“My experiences helped me branch out my network and taught me basic skills I needed in order to succeed in graduate school,” says Frazier, who graduated magna cum laude from Savannah State in 2010 with a dual degree in chemistry and mathematics.

At his graduation ceremony, Frazier received one of the university’s highest honors, the President’s Second Mile Award, an award presented biannually to SSU students in recognition of stellar and meritorious achievement. He went on to matriculate at MIT in Boston, where he worked toward a Ph.D. in physical chemistry.

Frazier says that the research skills he acquired at Savannah State served him well during his five years at MIT, one of the world’s most prestigious universities.

“Getting in to graduate school, you have to have quality research, and my research

advisor (at MIT) looked at my application and saw the research skills I had developed (at SSU), and that’s why he wanted me in his lab,” Frazier says.

Frazier’s abilities stood out at MIT. He received a Provost Presidential Fellowship, the highest fellowship honor for first-year graduate students, and the university’s Dr. Martin Luther King Jr. Leadership Award, an award in which recipients compete against the entire MIT community.

In addition to garnering accolades, Frazier became deeply involved in the campus community, serving as president of the Black Graduate Student Association and the Academy of Courageous Minority Engineers.

“Savannah State made me very grounded. Who I was at Savannah State is who I was at MIT,” Frazier says. “People really appreciated that. Some of the things I was doing at Savannah State, like trying to build a community if I felt there was a gap, I took with me to MIT.”

Today Frazier continues to live in the Boston area, working as a business and systems integration analyst for Accenture, a global consulting and professional services company. He hopes to one day start his own bio-medical firm or even open his own hospital. □



Alumni Spotlight

KELVIN FRAZIER, Ph.D.



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THE ROAD TO

SUCCESS

Savannah's prime location on the East Coast makes it an ideal hub for transportation. The city boasts the fourth-largest port in the nation, a highway system that links drivers to locales across the state and up and down the coast, and two Class 1 railroads that connect Savannah to much of the U.S.

Savannah State University students will soon have the chance to become experts on the city's impressive infrastructure — and transportation systems around the world — thanks to a new interdisciplinary grant program focused on transportation.

The Targeted Infusion Project in Interdisciplinary Transportation Studies (TIP-ITS), funded by a \$399,548 grant from the National Science Foundation's HBCU-UP program, will enable SSU to develop an interdisciplinary undergraduate certificate program to educate students in technical, logistical, policy, research and commerce-related issues of the transportation industry. The program is targeted to students who are traditionally underrepresented in STEM disciplines, though the certificate will be available to both STEM and non-STEM majors.

"It's a three school effort between the College of Business Administration (COBA), the College of Liberal Arts and Social Sciences (CLASS), and the College of Sciences and Technology (COST)," says Suman Niranjana, Ph.D., an associate professor of management in COBA and the grant program's co-principal investigator.

"Transportation draws things from civil engineering, geographic information systems, which falls under urban planning, and global logistics and international business, which talks about supply chain," says Niranjana, explaining that the certificate program will be available to SSU students as well as

local industry professionals.

The SSU team in charge of implementing TIP-ITS includes Niranjana and Principal Investigator and COST Dean Jonathan Lambright, Ph.D., along with faculty members Mehran Mazari, Ph.D., assistant professor of civil engineering technology in COST; Bryan Knakiewicz, Ph.D., assistant professor of civil engineering technology in COST; and Daniel Piatkowski, Ph.D., assistant professor of political science in CLASS. Shilpa Prasad serves as the grant's program specialist.

Many students have already expressed interest in the transportation studies certificate, among them Sarah Dillard, a senior civil engineering technology major from Atlanta. Dillard says the new certificate program will enhance her education and help guide her career choices.

"The transportation studies certificate program will enhance my chances to secure roles that hold influential decisions on the regulations of the roadways and increase my knowledge of how I want to use my studies in civil engineering and technology," Dillard says.

Feon Green, a senior global logistics and international business major from Savannah, believes that transportation is one of the key competencies that drives globalization. "I am fascinated with the supply chain. The different strategies on how to control the upstream and downstream flow of goods and/or services from the point of origin to end result being the customer is a vital part of our everyday lives," Green says.

"Transportation plays a large part in the supply chain. Without the different modes of transportation it will be impossible for us to survive. Transportation helps make the world more efficient, and I just want to be a small part of that industry and participate in globalization."

In addition to the certificate program, the three-year TIP-ITS grant includes a research component for undergraduates. Each year, six to 10 students from across disciplines will be provided with stipends to conduct research. The students will work closely with local partners, including the Chatham Area Transit Authority, Georgia Ports Authority, Georgia Department of Transportation and IKEA Distribution Center, to solve industry-specific problems.

Area high school students interested in transportation will also benefit from the TIP-ITS grant through the program's high school bridge program. For 20 weeks throughout the spring and summer, students in grades 9-12 will have an opportunity to attend specialized interdisciplinary classes on the SSU campus to learn about transportation systems. The program is designed to improve student recruitment and retention in STEM disciplines and introduce students to transportation studies.

The Transportation Studies Certificate program is expected to launch in Fall 2016. Lambright, Niranjana and the team hope that the program's success will eventually lead to the development of a major program in the discipline. □



The Targeted Infusion Project in Interdisciplinary Transportation Studies team includes, from left to right, Suman Niranjana, Ph.D., Shilpa Prasad, Bryan Knakiewicz, Ph.D., Daniel Piatkowski, Ph.D., and Mehran Mazari, Ph.D. (Not pictured, Principal Investigator Jonathan Lambright, Ph.D.)

TALK OF THE TOWN

Savannah State has been an integral part of the Thunderbolt community since the university opened its doors in 1891. The university has engaged in numerous civic and community service projects in the town over the course of the past 125 years, most recently helping Thunderbolt officials with several administrative matters.

The partnership with Thunderbolt began in 2014 when town administrator Caroline Hankins contacted Deden Rukmana, Ph.D., associate professor and coordinator of the master's degree program in Urban Studies and Planning (MUSP), to facilitate a collaboration between the town and SSU graduate students. During the Spring 2014 semester, students in the MUSP and Master of Public Administration (MPA) programs helped the Town of Thunderbolt assess whether residents would support a homestead exemption. Students went door-to-door,

surveying residents about their opinion on homestead exemptions and then analyzed their responses and submitted them to town administrators. The homestead exemption was on Thunderbolt's ballot in November 2014 and passed, as the SSU group had predicted.

The partnership was such a success that Hankins contacted Rukmana again to collaborate with students on the Town of Thunderbolt's comprehensive plan. According to state mandate, municipalities must update their comprehensive plans every 10 years. In preparation for its 2016 plan update, Thunderbolt — working in collaboration with the Coastal Regional Commission (CRC), which serves as the regional planning agency for the coastal Georgia region — enlisted 10 students in Rukmana's Research Methods class during the Fall 2015 semester.

The students helped to design the survey instrument and the sampling methodology. They conducted a survey to randomly

selected residents of Thunderbolt to gauge their opinion on the issues, needs and opportunities for the future of the town. Rukmana compiled the data from the surveys and submitted a report to the Town of Thunderbolt.

At the same time, students in Rukmana's Introduction to Planning class worked with the CRC to conduct data assessments in the town in four key areas: housing, transportation, economic development and land use. Eight students gathered data from field observations, created maps from GIS data and analyzed secondary data. Upon completion of their research, the students submitted the work to the CRC.

"Working on the Thunderbolt project will benefit my career," says Terrance Grasty, a second-year MUSP student from Chester, Pa., who was a student in both of Rukmana's Fall 2015 classes. "I will be able to reflect on the experience when developing strategies for other projects."

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SMART BOLD

students for amazing careers — whether it's making scientific breakthroughs, forging new business models or impacting our local community. It all starts right here in Savannah.

College of Business Administration

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School of Teacher Education



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Mulatu Lemma, Ph.D., with students from his Topography class. Below: SSU alumna Kimberly Jones Knight, a mathematics teacher at Druid Hills High School in Atlanta.

EQUATION FOR SUCCESS

When Kimberly Jones Knight teaches Foundations of Algebra and Coordinate Algebra to 9th graders at Druid Hills High School in Atlanta, she can easily spot students who are struggling and knows how to help them.

“I can see the common errors among the students and understand why because I have such in-depth knowledge of how complex yet simple some mathematical concepts are,” Knight says.

Knight attributes her ability to help her students to the education she received as an undergraduate mathematics major at Savannah State University.

“The mathematics program at SSU more than prepared me for teaching,” says Knight, who graduated from SSU summa cum laude in 2008 and went on to receive a master’s degree in math education from Georgia State University in 2010.

Savannah State’s mathematics program has produced graduates like Knight since the university began conferring degrees in the discipline in 1949. The program has grown in popularity over the past six decades, with 99 declared majors today.

“This number is comparable to the number of math majors in significantly larger research universities,” says Mulatu

Lemma, Ph.D., professor and chair of SSU’s mathematics department. “SSU is now ranked No. 6 in the nation for producing African-American math and statistics B.S. graduates.”

One of the reasons for the department’s success is the quality of research being produced by both faculty and students. Faculty members are actively engaged in scholarly research activities throughout the year, present their findings at international and national conferences, and regularly publish their work in peer-reviewed journals.

Mathematics majors have the opportunity to engage in research through coursework and grant programs such as the Minority Access for Graduate Education and Careers in STEM program (MAGEC-STEM), which seeks to increase the number of minority students who progress to advanced degree programs.

Knight says that her experience as a MAGEC-STEM scholar helped prepare her for the rigors of graduate school.

“I was well prepared for Georgia State’s math education program. It is a research-based learning school and I did research every year at SSU through MAGEC-STEM,” Knight says.

Soon SSU students and those from

other colleges and universities will have an opportunity to pursue a master’s degree in mathematics on Savannah State’s campus. The University System of Georgia Board of Regents approved a master of science degree program in mathematics, which will launch in Fall 2016.

The creation of the master’s degree program was one of several goals set forth by College of Sciences and Technology Dean Jonathan Lambright, Ph.D., who credits Lemma with paving the way for the new degree program.

“This wouldn’t have been possible without the assistance and leadership of Dr. Lemma,” Lambright says. “He’s really the driving force behind it. He’s such a wonderful faculty member, he’s extremely dedicated to his profession and he loves teaching students. He wants to see the program progress.”

Lambright says the response to the new graduate program has been strong, with many prospective students inquiring about admission. Faculty members are currently completing the development of courses, and the department is actively recruiting students. Once operational, the program will be the only advanced degree program in mathematics in the Savannah area. □



*Faculty
Spotlight*

KISHA CUNNINGHAM

Ph.D.

Students in rural classrooms often don't have the same educational resources as those in metropolitan areas, creating a deficit in their education that can follow them throughout their academic and professional careers. Kisha R. Cunningham, Ph.D., an assistant professor of technology education in Savannah State University's School of Teacher Education (SOTE), hopes to change that.

Cunningham is one of four SSU professors working on the Collaborative Regional Educational (CORE) Initiative, a program led by Jacksonville State University in Jacksonville, Alabama, and funded by the U.S. Department of Education that seeks to prepare students in K-12 for college and careers by improving access to technology and expanding methodologies in the classroom.

During the two-year study, Cunningham, along with SOTE colleagues Cora Thompson, Ed.D., Andrea Moore, Ph.D., and Mihaela Munday, Ph.D., will work to identify teachers in grades 8-12 who are interested in utilizing technology in the classroom. Cunningham and her colleagues will examine the use of technology in the classroom, find ways to utilize technology to identify career interest and career readiness, and provide training to the selected teachers and assist with any technology needs they may have.

"Most of our youth know more about technology than we do. In order to make sure that they're engaged in coursework and that we are reaching them, we need to make sure that we have avenues for them to get information," Cunningham says. "It's very important for us to provide those avenues to technology and teach them about being responsible users of technology."

Access to technology can be especially challenging in rural areas, where Cunningham and her fellow researchers will focus their attention.

"Our goal is to have a mobile computer lab that we can take to schools and rural classrooms. They may not have that type of technology there, so we're going to bring it to them," Cunningham says.

Finding new and innovative ways to integrate technology into the classroom is nothing new for Cunningham, who has dedicated

much of her career to issues of technology, gender equality and accessibility.

Cunningham received bachelor of science and master of science degrees in technology education from North Carolina Agricultural & Technical State University, where she was a Ronald McNair Scholar, and a Ph.D. in workforce education and training development with a focus in postsecondary technical leadership at The Pennsylvania State University.

Her research has been presented at numerous conferences, including the International Technology Engineering Education Association conference, MAP/MRO Conference, the School-to-Career Connection Conference, the Association for Career and Technical Education Conference, and the International Vocational Education and Training Association in Hong Kong.

She joined the faculty of Savannah State in 2013 after spending three years serving as a technology education/computer instructor at Neighborhoods Focused on African-American Youth Inc., a nonprofit organization in Marietta, Ga., dedicated to positively changing the outcome of African-American youth. A trained dancer, Cunningham also served for nine years as executive director of the Paisley Academy of Performing Arts, a nonprofit organization in Marietta, Ga., that encourages children and adults to explore performing arts from a historical perspective.

Cunningham has contributed articles to numerous scholarly publications and has taken a leadership role on several grant programs focused on gender equality in technology education. Since joining the SSU faculty, she has focused much of her classroom teaching on engineering technology education, incorporating academic concepts with hands-on learning.

"STEM education is so important now

because of where our students are when it comes to math and science," Cunningham says. "We want them to enter into fields of engineering technology and math, but we don't want everyone to become engineers and mathematicians. We need teachers. We need people who are prepped and prepared to teach that content to the next generation of engineers and mathematicians."

In addition to her classroom teaching schedule, Cunningham serves as the grant pedagogy specialist for the university's Georgia Math Science Partnership (MSP) grant program. Through the MSP program, Savannah State has created a two-year professional development program for area middle school science teachers.

"As teachers, we sometimes get so caught up in lecturing that we leave half of our classroom behind. I'm a stickler for finding new instructional strategies to get that information out so that everyone is reached in the classroom," says Cunningham, who works with the MSP program's in-service teachers on pedagogical issues such as how to engage in active learning and how to gauge student success.

For Cunningham, some of the most valuable educational tools come from her own personal experiences observing young students. In the university's STEM Education Teaching and Learning Lab, a maker space utilized by area children in grades Pre-K-12, as well as SOTE teaching candidates and in-service teachers from the MSP program, Cunningham witnesses these concepts put into practice.

"We see active learning in place [in the lab]," Cunningham says. "It's awesome to give (the students) a concept, tell them what the theme of the day is, and give them an activity and actually see the light bulb go off." □

Grants at a Glance

KNOW TO LIVE PROJECT

Funding Agency: Center for Substance Abuse Prevention, a division of the U.S. Department of Health and Human Services' Substance Abuse and Mental Health Services Administration

Grant Amount: \$852,790

Duration: 2015-18

Principal Investigator: Linda Samuel, Ph.D., LMSW, assistant professor of social work; Directors: Roenia DeLoach, Ph.D., associate professor of social work, and Felicia Tuggle, Ph.D., LMSW, assistant professor of social work

Goal: To prevent and reduce substance abuse and the transmission of HIV and Hepatitis C among at-risk African-American young adults between the ages of 18-24 on the SSU campus and in the community.

Grant in Action: Know to Live is a Minority Serving Institution/Partnership with Community Organizations project that pairs SSU's social work department with community-based organizations to educate the community about substance abuse and HIV and Hepatitis C prevention. The program will train up to 30 peer educators, who will conduct workshops on campus and in the community about substance abuse and HIV/Hepatitis C prevention. In conjunction with the Chatham County Health Department, the program will offer free HIV and Hepatitis C testing throughout the year. In addition, SSU's social work department will utilize graduate students to conduct needs assessments to meet the needs of both the campus and surrounding communities.

BRIDGE TO RESEARCH IN MARINE SCIENCES RESEARCH EXPERIENCES FOR UNDERGRADUATES

Funding Agency: National Science Foundation

Grant Amount: \$427,000

Duration: 2015-20

Principal Investigator: Tara Cox, Ph.D., associate professor of Marine Sciences

Goal: To expose first- and second-year undergraduate minority students to marine and geosciences, thus propelling them to graduate with a degree in a related discipline and progress to graduate school.

Grant in Action: The Bridge to Research in Marine Sciences Research Experiences (REU) for Undergraduates program, currently on its third cycle of funding, enables the SSU marine sciences department to offer an eight-week summer program that brings undergraduate students from around the country to the SSU campus to work closely with professors and graduate students from SSU and the Skidaway Institute of Oceanography, conducting research on a specific topic. A highlight of the program is a two-day expedition aboard the R/V Savannah to engage in hands-on research.

TITLE IV-E CHILD WELFARE EDUCATION PROGRAM

Funding Agency: Georgia State University/Georgia Department of Family and Children Services

Grant Amount: \$228,719

Duration: 2015-16

Principal Investigator: Julius Scipio, Ed.D., interim associate provost/associate vice president for Academic Affairs and School of Teacher Education interim dean; Program Manager: Roenia DeLoach, Ph.D., associate professor of social work; Co-program Manager Shinaz Jindani, DSW, professor of social work

Goal: To prepare SSU students pursuing a bachelor of social work (BSW) or master of social work (MSW) degree for careers in Georgia's public child welfare system.

Grant in Action: Through the Title IV-E program, five BSW and 10 MSW students receive financial and academic support to help prepare them for careers in child welfare with the Georgia Department of Family and Children Services. Selected students take specialized courses and complete an internship with the Department of Family and Children Services. The program is designed to create competent BSW and MSW practitioners who will deliver quality services to families and children throughout the state.



*Student
Voices*

BLESSING ENYA

I am originally from Nigeria, but I have been in the United States for the past six years. After completing high school in Atlanta, I decided to attend Savannah State University as an undergraduate at age 15.

Being accepted to Savannah State University at such a young age made me a little nervous because I did not know what to expect, and I felt like I was a little child in an adult world. For the longest time, I avoided telling anybody my age because I felt like I might be picked on as a result. At the end of the day, people were actually nice and helpful. It was important to me that I try to fit in as much as I could, without forgetting where I came from. My parents were always there to support and help me in any way they could, and it has helped me become the adult I am now at Savannah State University.

During my freshman year, I was a Peach State Louis Stokes Alliance for Minority Participation (PSLSAMP) Scholar, and I did my first research with Hyounkyun Oh, Ph.D., a mathematics professor, on historical trends and predictions in Savannah's temperature. The main goal of the project was to predict the temperature in Savannah using regression method, predictive method and Fast Fourier Transform method and compare the temperatures

within a 30- and a 60-year period.

By my sophomore year, I joined the National Institutes of Health Research Initiative for Scientific Enhancement (NIH-RISE) program and worked under Hua Zhao, Ph.D., an associate professor and chair of chemistry, doing research on biodiesel.

By Summer 2013, I got accepted to my first off-campus research position at the University of Texas at San Antonio, where I had the opportunity to work with Janakiram Seshu, Ph.D., an associate professor of biology, on a research project titled "Purification of BB0504 Protein of *Borrelia burgdorferi*," which involved converting DNA to protein and purifying the protein.

I completed my second off-campus research at Alabama State University on "Detection of Avian Influenza Virus (AIV) Using qPCR." This research involved RNA isolation from bird fecal sample, converting to cDNA and quantifying the cDNA to detect AIV.

Presently I am working with Takayuki Nitta, Ph.D., an assistant professor of biology at Savannah State, on MLV virus and the how small GTPases play a role in virus release. I have presented my research experiences at the Annual Biomedical Research Conference for Minority Students, the PSLSAMP conference, the Mathematical

Association of America Southeastern Section conference, the Florida-Georgia Louis Stokes Alliance for Minority Participation conference and the Emerging Researchers National Conference in STEM.

All of these research opportunities have helped me understand more about what is being taught in my classes. They have also helped me with my networking skills and helped determine my plans for the future.

My future goal is to get my M.D./Ph.D. degree in microbiology, and I believe that Savannah State University has helped me achieve my goals. I have been exposed to summer research opportunities, networking opportunities, graduate school seminars and scholarship opportunities that I would not have gotten at other schools. I have told people around me about the kinds of opportunities to which I have been exposed, and they have also had the same experience.

As a result of these opportunities and experiences I have received at Savannah State University, I believe I am Savannah Smart, Savannah Bold and Savannah Proud, and I can get anywhere from here. □

Blessing Enya is a senior biology and mathematics major from Atlanta, originally from Nigeria.

CURRENT GRANT FUNDING *at* SSU

| FUNDING AGENCY | PRINCIPAL INVESTIGATOR |
|---|-------------------------------|
| U.S. Department of Education | Dedra N. Andrews |
| U.S. Department of Education | Dedra N. Andrews |
| Georgia Department of Public Health | Jacqueline Awe |
| U.S. Department of Defense/Army Research Office | Pascal Binda, Ph.D. |
| Mississippi State University/U.S. Department of Energy | Qian Chen, Ph.D. |
| National Science Foundation | Chellu Chetty, Ph.D. |
| National Institutes of Health/NIBIB | Chellu Chetty, Ph.D. |
| Thurgood Marshall College Fund | Chellu Chetty, Ph.D. |
| National Science Foundation | Tara Cox, Ph.D. |
| National Science Foundation | Tara Cox, Ph.D. |
| U.S. Department of Education | Kisha Cunningham, Ph.D. |
| U.S. Department of Education | Mary Carla Curran, Ph.D. |
| U.S. Department of Health and Human Services/Health Resources and Services Administration | Roenia Deloach, Ph.D. |
| National Institutes of Health/NIMHD | Cheryl D. Dozier, DSW |
| University System of Georgia Board of Regents | Francisco Duque |
| Carleton University | Sue Ebanks, Ph.D. |
| GA/Department of Natural Resources | Chandra Franklin, Ph.D. |
| GA/Department of Natural Resources | Chandra Franklin, Ph.D. |
| U.S. Department of Education | Gary Guillory, Ed.D. |
| NOAA/University of Maryland Eastern Shore | Dionne Hoskins, Ph.D. |
| National Institutes of Health/NIGMS | Cecil Jones, Ph.D. |
| University of Georgia | Cecil Jones, Ph.D. |
| National Science Foundation | Jonathan Lambright, Ph.D. |
| Georgia Department of Education | Jonathan Lambright, Ph.D. |
| NASA/GA Tech | Jonathan Lambright, Ph.D. |
| U.S. Department of Education | Keenya Mosley, Ph.D. |
| UGA/National Science Foundation | Mohamad Mustafa, Ph.D. |
| UGA/National Science Foundation | Mohamad Mustafa, Ph.D. |
| U.S. Department of Health and Human Services/SAMHSA/CSAP | Johnnie Myers, Ph.D. |
| GA/Department of Juvenile Justice | Johnnie Myers, Ph.D. |
| U.S. Department of Education | Emmanuel Naniuzeyi, Ph.D. |
| National Science Foundation | Carol Pride, Ph.D. |
| U.S. Department of Education | Zenobie Purnell |
| U.S. Department of Education | Bobby Roberts, Jr. |
| U.S. Department of Energy | Kenneth Sajwan, Ph.D. |
| U.S. Department of Health and Human Services/SAMHSA/CSAP | Linda Samuel, Ph.D. |
| GSU/DFACS | Julius Scipio, Ed.D. |
| National Institutes of Health | Kai Shen, Ph.D. |
| U.S. Department of Defense/Army Research Office | Kai Shen, Ph.D. |
| U.S. Department of Defense/Army Research Office | Kai Shen, Ph.D. |
| University of the West Indies | Paramasivam Sivapatham, Ph.D. |
| U.S. Department of Education | Tamara Waterman |
| American Chemical Society | Hua Zhao, Ph.D. |
| National Institutes of Health/NIGMS | Hua Zhao, Ph.D. |
| Camille and Henry Dreyfus Foundation | Hua Zhao, Ph.D. |

TOTAL CURRENT FUNDING

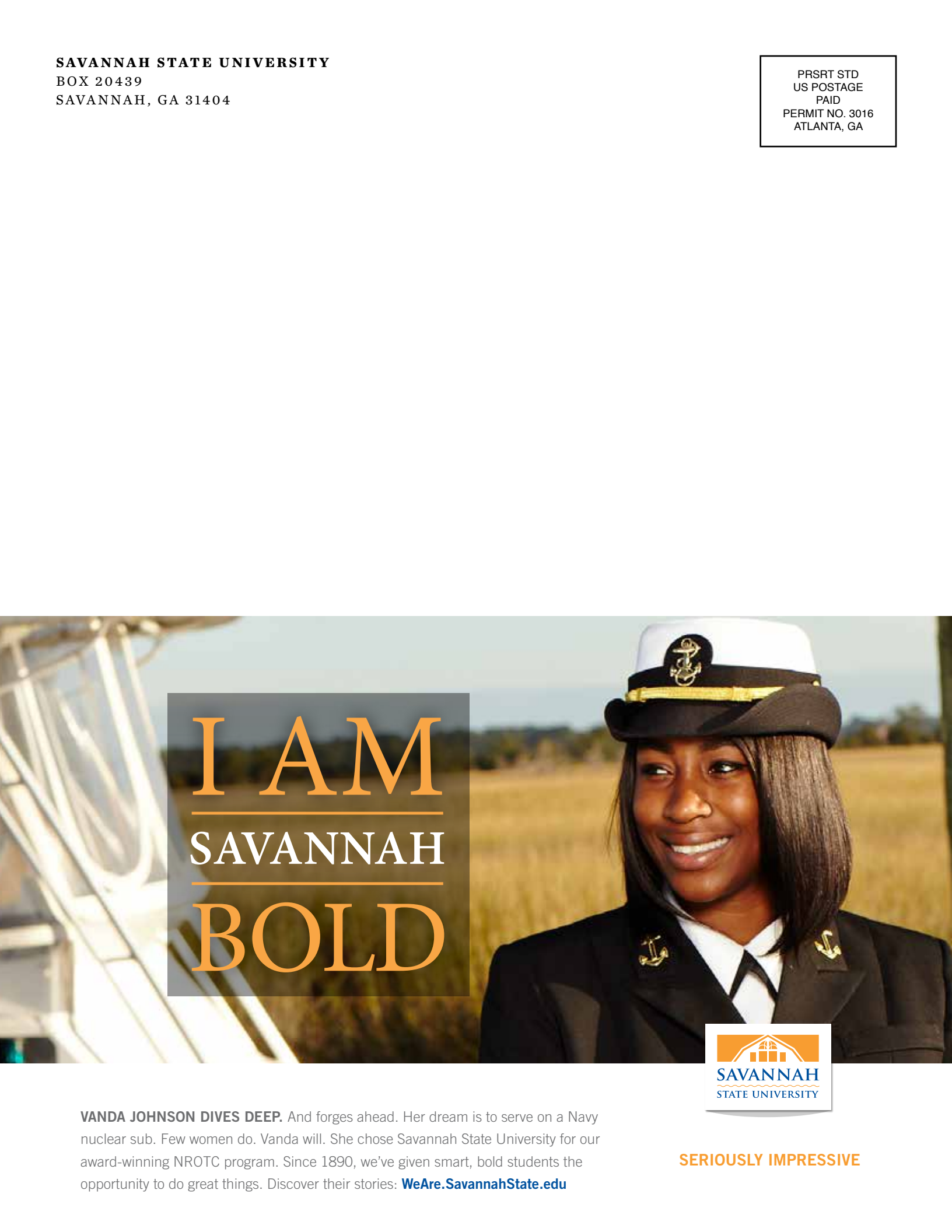


| GRANT | DURATION | AWARD |
|--|----------|-------------|
| Title III | 2012-16 | \$3,516,660 |
| SAFRA | 2015-16 | \$1,110,799 |
| One-in-Four | 2015-16 | \$24,000 |
| Design and Synthesis of New Heteroleptic Lanthanide Complexes to Catalyze Ring-Opening... | 2015-18 | \$332,633 |
| Idaho Bailiff | 2015-16 | \$14,993 |
| HBCU-UP MAGEC-STEM PLUS | 2009-16 | \$2,138,394 |
| Expanding Diversity in Engineering and the Physical Sciences | 2011-16 | \$642,559 |
| Consortium of Undergraduate STEM Success | 2011-16 | \$5,000 |
| Bridge to Research in Marine Sciences Research Experiences for Undergraduates | 2012-16 | \$303,577 |
| Bridge to Research in Marine Sciences Research Experiences for Undergraduates (Renewal) | 2015-20 | \$427,437 |
| iCore 3 | 2015-17 | \$56,000 |
| HBCU (Graduate) Coastal Ocean and Underwater Research to Advance Graduate Education (COURAGE) | 2009-16 | \$3,000,000 |
| Behavioral Health Workforce Education and Training | 2014-17 | \$687,306 |
| Research Infrastructure in Minority Institutions | 2009-16 | \$3,857,587 |
| Somos Tigre College Transition Program | 2014-16 | \$100,000 |
| InTeGrate: Interdisciplinary Teaching of Geoscience for a Sustainable Future | 2015-16 | \$49,399 |
| Cycle 17 A New Technology to Quantify and to Predict Loss or Recovery of Marsh Vegetation...Year 1 | 2014-16 | \$60,000 |
| Cycle 18 A New Technology to Quantify and to Predict Loss or Recovery of Marsh Vegetation...Year 2 | 2015-16 | \$60,000 |
| Student Support Services (Renewal) | 2015-20 | \$1,461,700 |
| Living Marine Resources Cooperative Science Center | 2011-16 | \$1,308,356 |
| MARC U-STAR Program | 2012-17 | \$2,044,855 |
| Affordable Textbook Transformation | 2015-16 | \$10,800 |
| Targeted Infusion Project in Interdisciplinary Transportation Studies | 2015-18 | \$399,548 |
| Enhancing the Ability of Middle School Educators to Improve Students' Achievement in Science | 2014-16 | \$571,724 |
| NASA Space Grant | 2010-18 | \$57,000 |
| SSU/STC Noyce Teacher Scholarship Program | 2014-19 | \$1,421,715 |
| Strengthening the STEM Pipeline in the Peach State Recruitment, Retention, and Research (New Alliance) | 2012-17 | \$600,000 |
| Strengthening the STEM Pipeline in the Peach State (PSLSAMP) | 2015-16 | \$100,000 |
| 'Get In The Know' HIV and Substance Abuse Awareness | 2013-16 | \$900,000 |
| Unlocking the Keys to Potential | 2015-16 | \$41,982 |
| Fulbright-Hays Group Project Abroad - Ghana: History, Culture and Geography | 2015-17 | \$91,236 |
| GK-12 - Building Ocean Literacy in a Coastal Community | 2009-16 | \$1,765,876 |
| Educational Talent Search | 2011-16 | \$2,197,030 |
| Upward Bound | 2013-18 | \$2,866,885 |
| Environmental Justice, Community Education and Advisory Project | 2013-17 | \$881,468 |
| Know to Live | 2015-18 | \$852,790 |
| Title IV-E | 2015-16 | \$228,719 |
| Metavinculin Regulation of Cell Cytoskeleton Remodeling in Response to Substrate Stiffness | 2014-17 | \$296,692 |
| MRI: Acquisition of a Raman Microscope for Interdisciplinary Research and Training | 2014-17 | \$331,997 |
| Mediating the Role of Metavinculin on the Mechanical Properties of Extracellular Matrix Stiffness | 2015-18 | \$320,972 |
| Cadmium Project: Developing a Strategy for the Mitigation of Cadmium in Cocoa | 2015-18 | \$208,615 |
| GEAR UP DeRenne | 2011-18 | \$2,800,000 |
| Tailoring Ionic Liquids for Deep Desulfurization of Liquid Fuels by Oxidative Extraction | 2015-18 | \$70,000 |
| Research Initiative for Scientific Enhancement (RISE) | 2012-17 | \$1,131,545 |
| Henry Dreyfus Teacher-Scholar Award | 2012-17 | \$60,000 |

\$39,407,849

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I AM
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BOLD



VANDA JOHNSON DIVES DEEP. And forges ahead. Her dream is to serve on a Navy nuclear sub. Few women do. Vanda will. She chose Savannah State University for our award-winning NROTC program. Since 1890, we've given smart, bold students the opportunity to do great things. Discover their stories: WeAre.SavannahState.edu

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