

Re:Search

Graduate Studies & Research at Salisbury University
2019 Edition

MAPPING OUT
COMMUNITY CONNECTIONS





Saving the Amazon: Studying the Impact of Climate Change • page 5

Volume 09 • 2019

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Re:Search is published annually for friends of Salisbury University by the Office of Graduate Studies and Research in conjunction with the Office of Publications, with the generous support of Salisbury University. Please send comments, news and address changes to: Office of Graduate Studies & Research, Salisbury University, 1101 Camden Avenue, Salisbury, MD 21801-6860

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On the Cover: Downtown Salisbury is viewed from a fresh perspective when photographed using drone technology. Read about the work of SU's Eastern Shore Regional GIS Cooperative on page 15.

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“Believing that learning and service are vital components of civic life, Salisbury University actively contributes to the local Eastern Shore community and the educational, economic, cultural, and social needs of our State and nation.”



The quote above is taken from our mission statement and reflects Salisbury University’s commitment to the economic and cultural vitality of our region as well as to actively addressing societal needs, whether educational, healthcare or scientific. As you can see in this edition of *Re:Search*, SU students, faculty and staff are pursuing this mission and positively impacting communities across Maryland’s Eastern Shore, throughout our State and nation, and across the globe. To achieve our mission, we also strive to cultivate a strong research community on campus and with University partners who are so important to our programs.

As noted in several of the following stories, many of our research and outreach programs depend upon collaboration within and across communities. A tremendous example of this is SU’s Eastern Shore Regional GIS Cooperative (ESRGC), which for nearly 15 years has provided technical and capacity-building services to communities across the region and beyond. Last fall, the ESRGC moved to new headquarters on the city plaza, expanding the University’s presence in Downtown Salisbury. The ESRGC supports a wide variety of programs ranging from hazard assessment and mitigation planning to fighting urban blight to increasing crop yields. In a novel partnership, the ESRGC provides technical support to a SU School of Nursing project. Supported by a major award from the Maryland Higher Education Commission, nursing faculty Drs. Lisa Seldomridge and Judy Jarosinski are collaborating with colleagues at the University of Maryland, Baltimore to expand support for nurse educators and nursing education across the State.

Other SU faculty also have won competitive grants over the last year. Dr. José Juncosa and colleagues in the Department of Chemistry landed a major instrumentation award from the National Science Foundation (NSF) to support several research programs, including faculty and students at the University of Maryland Eastern Shore. Dr. Jill Caviglia-Harris (Economics and Environmental Studies) also garnered NSF support for her work with an international team to address land use and policy decisions in the Brazilian Amazon. The NSF also provided support for a collaborative project across the University System of Maryland to enhance the recruitment and retention of diverse science faculty. One of SU’s important roles in supporting new faculty in this project will be to share our extensive institutional experience with undergraduate research as a high-impact teaching practice. To see this high-impact practice in action, check out the Posters on the Bay video on Salisbury University’s YouTube channel (www.youtube.com/user/salisburyuniversity).

Speaking of outcomes, the University’s first Doctor of Education (Ed.D.) students graduated in 2018, each of whom has strong ties to our regional communities and who work as high school teachers, college instructors or educational administrators. Dr. Courtney Harned won a national award for her dissertation on rural education and focus on place as a critical element in improving educational outcomes.

It’s truly a privilege to serve as Provost at Salisbury University and to support SU’s research community which is so vital to pursuing our mission and values.

Sincerely,

A handwritten signature in black ink that reads "Karen Olmstead". The signature is fluid and cursive.

*Karen L. Olmstead, Ph.D.
Provost and Senior Vice President of Academic Affairs • Salisbury University*

NSF Grants **BOLSTER** SU Sciences

There's a lot going on in the labs aside from looking at cells beneath a microscope. In August 2018, SU received a trio of National Science Foundation (NSF) grants totaling nearly \$600,000.

The grants support a number of diverse projects: an upgrade to the University's Nuclear Magnetic Resonance (NMR) spectrometer, research studying deforestation and water supply in the Brazilian Amazon, and a career development alliance for underrepresented groups.





NMR Spectrometer: An 'MRI for Molecules'

Dr. José Juncosa, chemistry faculty at SU, couldn't be more excited about the upgrade to the department's 400 MHz Nuclear Magnetic Resonance (NMR) spectrometer. 400 MHz? NMR? That sounds like alphabet soup. However, the spectrometer is vital to the Chemistry and Biological Sciences departments at SU, and it is a requirement for SU's American Chemical Society-certified chemistry program.

So, what does equipment like this do?

The instrument has been described as an "MRI for molecules," allowing analysis of molecular structure, size and environment. For instance, Juncosa's work with the spectrometer involves mimicking neurotransmitters to improve understanding of neurological diseases. This could ultimately help patients receive better treatment.

"The information we can learn from using NMR spectroscopy is critical," said Dr. Michael Scott, interim dean of the Richard A. Henson School of Science and Technology. "Updating [the spectrometer] allows us to continue providing top-notch undergraduate chemistry education and cutting-edge research opportunities."

**GRANT
TOTAL:**
\$264,196

Beyond the new opportunities that will be available for SU's teaching labs, there are many research projects for which the instrument is critical, Juncosa said. Some of the projects include:

- Creating analogs of the neurotransmitter serotonin to gain a better understanding of some of its specific functions and ultimately design new possible treatments for PTSD and learning disabilities. (Juncosa, Chemistry)
- Creating molecules that can separate out the most radioactive components from nuclear waste, so that it remains dangerous for a much shorter period of time. (Dr. Seth Friese, Chemistry)
- Determining how Vitamin C is processed and assimilated by a species of bacteria that is considered a promising tool for breaking down environmental pollutants. (Dr. Michael Carter, Biology)
- Creating new molecules that incorporate antioxidant properties to known scaffolds as possible improved treatments for Alzheimer's disease. (Dr. Fred Tejada, University of Maryland Eastern Shore School of Pharmacy)

SU students are directly involved in these important research projects. At SU, chemistry majors are required to register for at least one semester of research, and biology majors are also encouraged to get involved in research projects. Although faculty advisors provide guidance, students carry out most of the research themselves.

"Our goal is to help students learn how to be independent scientists," Juncosa said. "At the beginning of their research experience, we guide them through many of the tasks that are carried out in a typical research lab of our discipline, and by the end, we usually find that they have become very self-sufficient."

Juncosa explained that in addition to learning the research process, students are exposed to the many tools a scientist uses to intellectually develop and maintain research projects, to the point that they begin having valuable input in faculty research projects.

The new spectrometer will facilitate this integral experience for students. The new model is expected to enhance the productivity of research and teaching activities within the Henson School of Science and Technology. The spectrometer is currently used by about 120 students each year, and SU will now have the capability to train even more students. This is increasingly important as growing numbers of students declare majors in science, technology, engineering and mathematics fields.

"It's integral to their preparation and success," Juncosa said.

Juncosa emphasized that in addition to SU students and faculty, the instrument also will be used by the University of Maryland Eastern Shore's School of Pharmacy.

"The machine makes our research possible and expands access to benefit others in the region," he said.

By Mikayla Wiseman



**GRANT
TOTAL:**
\$178,000

Saving the Amazon: Studying the Impact of Climate Change

There is no denying that humans have made a significant impact on the ecosystem of the Brazilian Amazon.

Brazil's Forest Code, last updated in 2012, was passed with the intent to stop deforestation and encourage forest restoration in environmentally sensitive locations. However, the new regulations bring up questions about the lasting impacts of climate change on the region.

Do changes in forest regulation impact deforestation? How do climate, land use and watershed size govern dry season water supply and farmer success? What is the relationship between stream flow, thus water availability to farmers and areas of permanent preservation, and does forest regulation actually affect water quality and quantity?

For Dr. Jill Caviglia-Harris, professor of economics and environmental studies at SU, the answers to these questions and more have truly been a lifelong project.

It started with her dissertation in 1996. She traveled to Rondônia, Brazil, for a study examining the adoption of sustainable agriculture by farmers using household survey data. The analysis concluded that the adoption of sustainable practices is influenced by farmer organizations and access to information.

"After this work, I wanted to continue with a long-term study and interview the same people over time," Caviglia-Harris said.

Her research has continued, and the team has grown to include geographers, hydrologists and even veterinarians.

"I first collaborated with my now-husband Dan, a geographer, in 2000," Caviglia-Harris said "after he noted how bad the government maps I was using were and how GPS and remote sensing technology could help answer some of my research questions."

Caviglia-Harris and Dr. Daniel Harris, an associate professor and chair of geography at SU, are now collaborating with researchers from Montana, California, North Carolina, New York and Brazil. With the help of the NSF grant, they will return to Rondônia to continue the work that has been building for over 20 years.

The funds will largely go toward travel and field work. Multiple trips to Brazil will be required, and undergraduate students from SU will accompany both of these faculty. The students will help with data analysis, field work and survey development. They will work closely with their peers, including about 50 students from Brazil, as they analyze survey and spatial data in real-time.

"It's a once-in-a-lifetime experience," Caviglia-Harris said. "They'll be able to do field work in a developing country, experience a different culture and learn from professionals and graduate students."

Together, the team will work to examine the impact of deforestation and land use change on water availability for rural households in Rondônia. The work will primarily take place in deforested areas where clearing has made it very difficult (perhaps even impossible) to return the land to forest.

The team's research will develop models to explain and predict farm decisions in response to changes in water availability by integrating meteorological variables, including precipitation, soil moisture, streamflow and pasture productivity in the dry season.

The goal is to facilitate implementation of Brazil's Forest Code, the most comprehensive forest protection and conservation law in the world, requiring the largest land registry on Earth, and has the potential to preserve millions of acres of forest. However, answers are needed to address important research questions about the efficacy of protected areas before the law can deliver beneficial outcomes.

Caviglia-Harris said studying farmer response is important because farmers

directly affect deforestation.

"On an international level, a majority of the CO₂ emissions from Brazil are from deforestation. Voluntary reductions noted in the 2015 Paris Agreement are all expected to be achieved with reductions in deforestation," Caviglia-Harris said. "The 2012 Forest Code gave farmers new incentives for compliance."

The demand for increased crop and pasture drives deforestation in the Amazon, which in turn affects soil water for plant growth. The updated Forest Code requires lands along rivers to remain forested. Caviglia-Harris explained that without forest, rivers can become "flashy systems," where there may be large pulses of water causing erosion and degrading water quality. The code aims to improve the water cycle in these areas.

However, preliminary research suggests there could be negative consequences.

"We suspect that reforestation along rivers may have negative effects on the water cycle and reduce stream flow," Caviglia-Harris said. "The theory is that when you plant trees along rivers, they may consume more water pasture grasses, releasing the moisture into the atmosphere, reducing groundwater supplying dry season streamflow."

One goal of the research is to understand how farmers adapt to changes in water availability and how changes in farming systems affect water availability.

"We're hoping to provide information that can be used for climate negotiations," Caviglia-Harris said.

The study will highlight the effects of climate variability, climate change and deforestation, and fill a critical gap in current knowledge. On a broader scale, Caviglia-Harris said the work could result in improvements in the well-being of individuals in the region, increase collaboration between U.S. and Brazilian institutions, and contribute to developing a diverse STEM workforce.

All this, starting right on SU's campus.

PROMISE Academy: A Mission to Represent Minorities

GRANT
TOTAL:
\$150,291

Salisbury University is one of five University System of Maryland (USM) institutions with strengths in biomedical and life sciences selected to form a career development alliance, supported by the NSF with nearly \$2 million in total awards to participating USM institutions.

Called the PROMISE Academy, the program will recruit scientists from traditionally underrepresented groups into faculty positions in the sciences. After recruiting 16 doctoral and post-doctoral students, the program will provide mentorship on faculty careers, undergraduate research and other teaching approaches, and additional professional development opportunities including conference travel, research budgets and support for student researchers.

"Through this award, we will be able to support young faculty in their development as teachers and mentors," said Karen Olmstead, project principal investigator and provost and senior vice president of

academic affairs.

Olmstead said one of the goals of the PROMISE Academy is to study recruitment and professional development of postdoctoral teaching fellows with system-wide, shared mentorship that will inform hiring practices and facilitate more inclusive climates within science departments.

"Because of SU's expertise in undergraduate research, one of our focus areas will be to introduce PROMISE Academy participants to this powerful teaching tool and, more generally, effective mentoring approaches for undergraduate students," Olmstead said.

As part of this award, SU will develop strategies to recruit and retain faculty to teach and mentor the diversity of students attending college campuses. SU will develop workshops that invite PROMISE Academy participants to consider careers at comprehensive universities because of the focus on teaching and

mentoring students at these institutions.

When it comes to diversity, SU is home to a broad array of support for individuals from historically underrepresented groups, including dedicated offices and programs, student clubs, and other campus organizations. Olmstead said a major goal for the University is to diversify the faculty, which should enhance other efforts to better support students from minority groups.

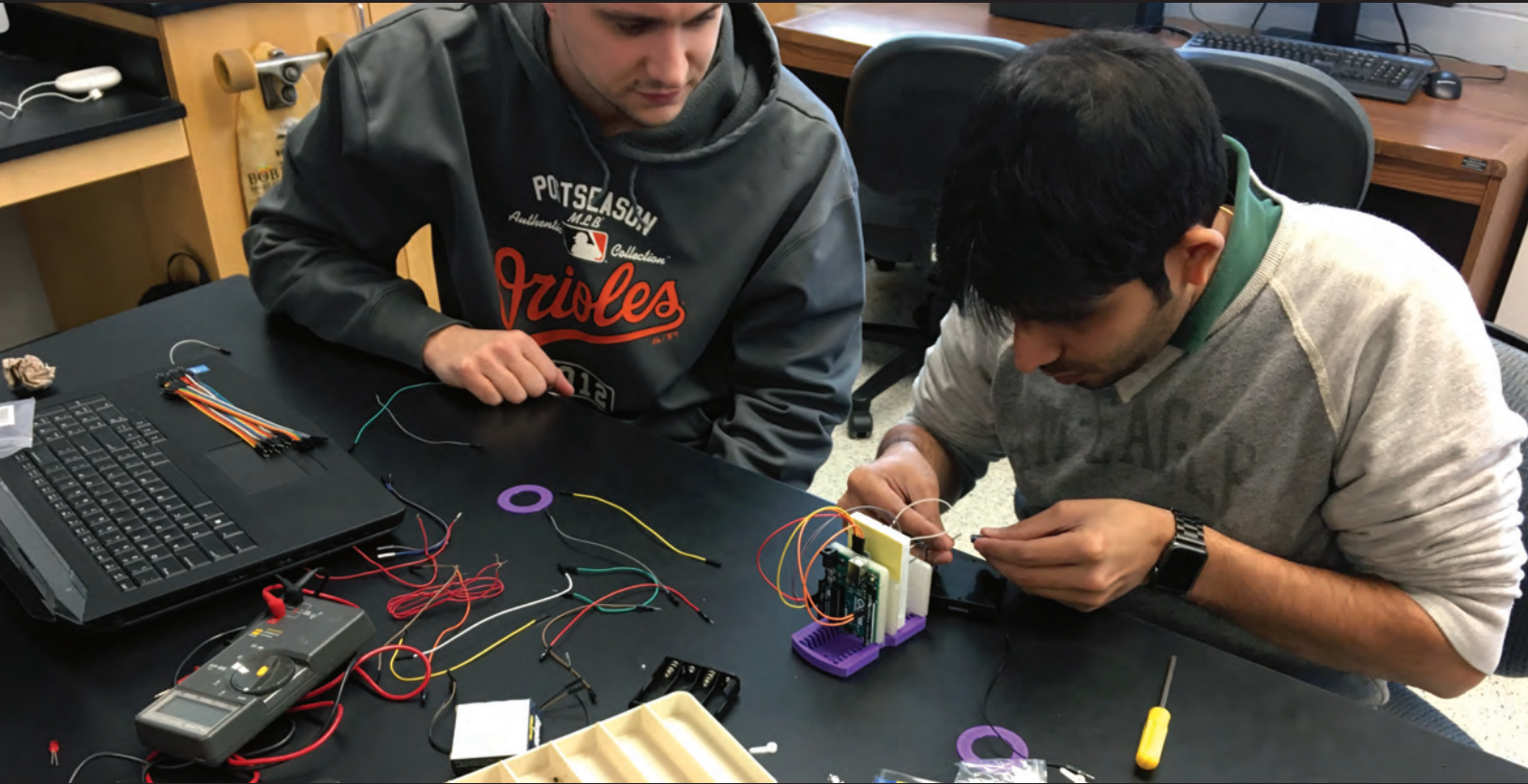
"As is the case in any discipline, workplace or community, it's critical for individuals from all backgrounds have the opportunity to participate, succeed and contribute," Olmstead said. "The U.S. population is becoming increasingly diverse, so it's important to create more seamless pathways for diverse students into the workforce." ♦

PROMISE

Maryland's Alliance for Graduate
Education and the Professoriate



SU-USM Partnerships Excel



What do the job market, sex education and a robotic caterpillar all have in common?
... Not much, really. But, they're all projects that Salisbury University is pursuing in partnership with other University System of Maryland campuses.

Whether it's opening up career options for nurses, encouraging students to work with each other on healthy behaviors or creating technology that can impact the environment, universities rely on each other to make their goals a reality. All of these projects are alive in the halls at SU, where the message rings clear:

"We're better together."

Crawling Along: Caterpillar Robot Helps the Environment

You wouldn't expect to see a caterpillar lounging on the beach or even crawling around underwater – but in the Math and Computer Science Department labs at SU, that's exactly what hard-at-work scientists are trying to achieve.

Guided by Dr. Giulia Franchi, faculty member in the Math and Computer Science Department, the team aims to build a robot that can imitate the movements of a caterpillar but also traverse complex terrain.

It's not a project purely driven by whimsy, though. Strange as it may seem, the caterpillar will serve a great purpose in the fields of nature and biology.

"We hope it will help to study the natural environment," Franchi said. The idea is that the robot will not only be able to blend in with its surroundings (thus not alarming the actual wildlife) but also take natural data from environments that may be difficult to explore otherwise.

The robot will be made of soft materials like rubber, which is more flexible, elastic, versatile and easy to build than other materials and will allow the caterpillar to "crawl" on various types of terrains. Franchi also thinks the project could help develop new technology.

"We think this is an opportunity to discover new materials and technologies to build soft robots," Franchi said.

The project is a collaboration between SU, University of Maryland College Park, University of California Berkeley and Carnegie Mellon University. Each school has a different task to contribute to the overall project. SU is in charge of designing the robot, while UMCP is working on simulations for modeling the behavior of caterpillars, and UC Berkeley is developing other materials for the robot, including those that can be moved by light.

Franchi said collaboration has been the "biggest part of the project." She points to resources a system school like UMCP has that SU doesn't, such as advanced equipment and teams of graduate students to participate and add input.

In addition to the robot caterpillar project, SU is also involved on a drone project in collaboration with Horn Point Laboratory in Cambridge. The project aims to use a drone to gather data in the Chesapeake Bay area and detect vegetation.

From this project, they developed the idea to use drone technology to detect litter and help keep the shores clean.

The team presented a poster for the drone project at the American Geophysical Union in Washington, D.C., and have been accepted to be published at the Coastal Sediments Conference in May 2019 in Florida.

The funding for the caterpillar project expired in December 2018, and Franchi's team is looking for other funding opportunities.

"In the meantime, we are still looking to get better results," Franchi said.

Health Education Gets a Boost with KISS

When it comes to sex education, many students may not be willing to talk about things openly. But Dr. Deneen Long-White, assistant professor of community health at SU, has found creative ways to get students involved and even enthused about the topic.

For example, who would have thought a runway-style fashion show with ensembles designed out of condoms would bring students out to spread the word on safe sexual practices?

Long-White helped host the Rubber Runway Fashion Show last spring at University of Maryland Eastern Shore, a USM school.

"The purpose is to have fun while raising awareness," Long-White said, adding that she hopes to host the show at SU in April this year.

The event is made possible by the KISS project, a sexually transmitted infection (STI) and pregnancy prevention program funded by the state health department. The project, involving collaboration between SU and UMES, aims to reduce risk behavior by engaging undergraduate students as peer educators.

"Research has shown that people are more likely to listen to their own age group, especially adolescents," Long-White said. "The program is student-driven. The message comes from them."

Students with KISS and the SU health education honorary – Eta Sigma Gamma organize Popping for Public Health once a month, where they give out popcorn and information on safe behaviors as well as other health promotion materials to their peers. They take part in Sexual Health Awareness Month in September and National Health Education Week, as well as host classroom presentations with the Student Health Center.

Long-White said this collaboration between schools and departments is a fundamental part of the KISS project and allows them to not only share resources but extend their reach.

"We like to collaborate," Long-White said. "I think it allows both organizations to learn more about each other and spread their messages further."



By Mikayla Wiseman

Providing the Tools for Nursing Leadership

SU nursing students graduate among the best in their field. The program consistently has one of the highest average NCLEX-RN pass rates in Maryland at 98.8 percent for 2017-18. And with a national shortage of registered nurses, graduates of the SU program are highly sought after for job placement.

Recognizing the need for leaders in the field, the Maryland Higher Education Commission (MHEC) awarded SU's School of Nursing nearly \$4 million in grants in 2017. With the help of these funds, SU was able to develop a series of web-based leadership and communication toolkits for nursing students, as well as a nurse educator career portal.

"Registered nurses are expected to take the lead in planning complex care for patients in a rapidly changing health care environment and must be skilled in collaboration, conflict management and advocacy," said Dr. Lisa Seldomridge, professor of nursing, director of the Henson Medical Simulation Center and co-principal investigator for the grants.

Seldomridge said the focus of the grants is to prepare nurses for leadership roles earlier in their careers to replace current nursing leaders who are eligible for retirement and to increase the number of nurses in teaching positions as solutions to the statewide and national nursing faculty shortage.

LeadNursingForward.org functions as a five-year collaboration between SU's School of Nursing and the University of Maryland School of Nursing (UMSON). Seldomridge said the collaboration has brought the two schools together for an important common goal.

UMSON is providing the photographs, videos and narrations for the site, while SU has recruited nursing faculty and educators throughout the State who will be featured in the photographs and

videos. Both schools worked together to schedule filming on location and develop interview questions, as well as the desired look and feel of the final videos and photo montages.

"Each has distinct responsibilities, but we must work together very closely to create a cohesive final product," Seldomridge said. "It has enabled us to pool our resources and use our respective connections throughout the state to accomplish the project's objectives."

So far, the project has developed branding and marketing materials, as well as design, functionality and programming of the website itself. The site completed its beta test phase in December 2018 and went live in mid-January 2019.

Only time will tell the results of the new initiatives, but prospects are high for the growth of SU's nursing students and the strength of the health care field as a whole.

Looking toward the future of SU's nursing program, Seldomridge said there are many possible directions for expansion.

"The program undoubtedly will be expanding its use of simulated clinical experiences, whether with standardized patients, actors who portray individuals with various health conditions, or high-fidelity manikins who can be programmed to mimic countless disorders," Seldomridge said. ❖

PROJECT: *"Toolkits to Enhance Communication Skills for Leadership Development in Nursing Students and Registered Nurses on the Eastern Shore of Maryland"*

GRANT CO-AUTHORS: Debbie Webster, Lisa Seldomridge

FOCUS: Development of a series of web-based instructional modules with integrated standardized patient experiences for nursing students and professional nurses.

PROJECT: *"Maryland Nurse Educator Career Portal"*
(LeadNursingForward.org)

GRANT CO-AUTHORS: Lisa Seldomridge, Judy Jarosinski

FOCUS: Create a website to serve as a "one-stop shop" for nurses who are interested in the educator role or are seeking educator positions.



It's About Time for One SU Grad

By Mikayla Wiseman

Even after graduating from Salisbury University and working as a postdoctoral associate, Dr. Chris Wolff '11 knows there's still a lot to learn.

Wolff has been busy in the lab, working around the clock with Karyn Esser at the University of Florida on cutting-edge research. The subject? Time.

Together, the team studies circadian rhythms and how they affect the aging process. They use a variety of model organisms – including cells, *C. elegans* and mice – to study the skeletal muscle circadian rhythms.

Their research has found that knocking out tissue-specific timekeepers leads to weaker muscles in mice and that perturbing these clocks can influence the physiology of sarcomeres, the basic units of muscle tissue.

“When we disrupt the clock, we're starting to see variations in the length of the sarcomere along a single fiber,” Esser said in a September article published by *The Scientist*. “[This can] affect force generation, and the prediction is that you might make this muscle more susceptible to injury.”

The goal of the research is to discover if during the normal aging process, the muscle circadian rhythm is disrupted – and if it is, how that contributes to the aging phenotype.

But the end result of this knowledge could be more far-reaching.

“If we can figure out what is ‘causing’ aging, we can better investigate ways to reduce the burden on people, caregivers and the system, saving health care money,” Wolff said. “So, you could say that the end goal is to improve the health of society, especially older individuals.”

It's been a long journey for Wolff to get to this point. Before his current work, he studied for his Ph.D. in an aging muscle biology lab at Colorado State University, where he worked with cell culture, mice, rats, guinea pigs, sled dogs and humans to understand how protein homeostasis contributes to aging. Before that, he worked on his master's degree in a muscle physiology lab, where he exercised the thigh muscles of patients to see if it would improve their whole-body fitness. Even before that, he was an intern in a famous muscle biology lab that was responsible for numerous discoveries in the field of muscle hypertrophy.

The steps on the journey have lined up in time, but it all started at SU.

“My primary interest in science started with the initial projects we worked on at SU,” Wolff said.

Wolff's undergraduate education helped him learn the research process and start him on his path. His experience at SU also helped him gain an understanding of the options beyond an undergraduate degree in exercise science.

“During the work we did at SU, I developed a true enjoyment for the global research process,” Wolff said. “Reading research papers is educational, but it also helps put lectures into perspective. Nothing in a textbook exists without research – at least in the sciences.”



There are a few ways that his experiences during undergraduate training at SU have helped Wolff get to where he is now. Appropriately enough, one of the most important skills he learned was time management.

“Having had the opportunity to work in the Laboratory for Human Performance and learn to balance coursework with research gave me an advantage going into my graduate studies,” Wolff said. “I already knew how to split my time wisely and get things done – but still have fun doing it.”

From entering SU as an exercise science major in 2007 to currently working as a postdoctoral associate, it may seem like the stars aligned for Wolff. But the road has been a lot of hard work, passion and keeping an open mind as he continues to learn.

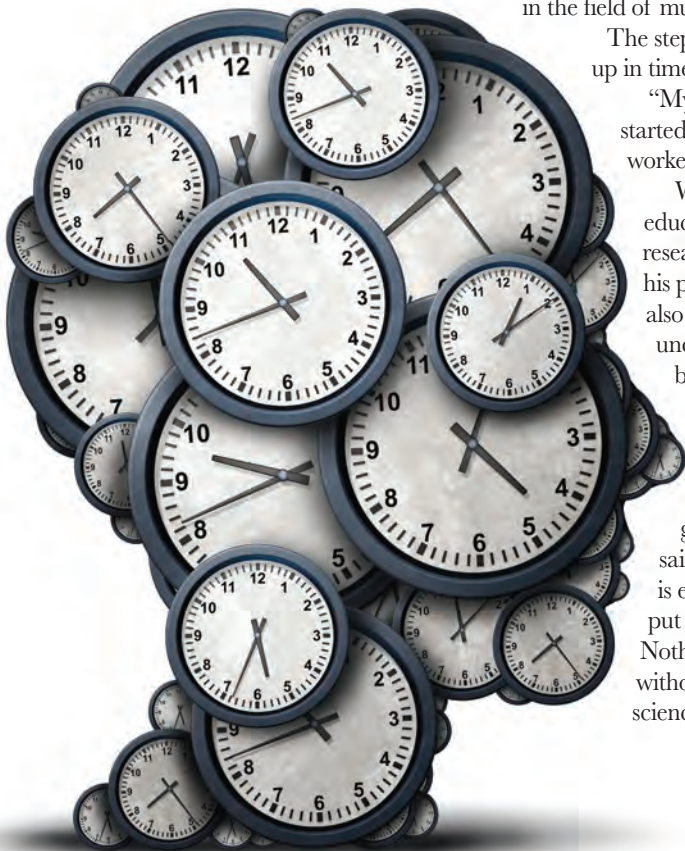
Wolff encourages undergraduate students to reach out to their mentors and peers on their own journeys.

“Explore. Ask questions,” Wolff said. “Try and find something that is really exciting to you on a personal level, and never be afraid of asking questions or being wrong. ... Most of the time, if you approach someone more senior with openness and in a polite manner, they will help you.

“Science is collaborative. Doing it in isolation doesn't work.”

As exciting and meaningful as the work is, Wolff's post-doctorate research isn't the final stop. So where will he go from here?

Only time will tell. ❖



The Importance of Undergraduate Research: A President's Perspective



Dr. Charles "Chuck" Wight became the ninth president of Salisbury University on July 1, 2018, bringing with him a background not only in higher education administration, but as a professor of chemistry with an emphasis on studying chemical explosions and a Ph.D. from CalTech. He shares how his undergraduate research opportunities helped shape his career and why such opportunities remain important for students today.

Q: How did you decide to pursue a career in that field?

A: I got interested in chemistry when I was a freshman at the University of Virginia. I actually went to college thinking I would become a doctor, but I majored in chemistry because there was no pre-med major. I took a general chemistry class from a professor named Lester Andrews, and during that class, he encouraged me to apply for a summer research fellowship. I interviewed several different faculty members, but I ended up working with Lester's group for the summer and did a project that resulted in publication. He liked my work and kept me on after the summer.

Working in Lester's group, I liked the discovery. I liked working in the laboratory, and I liked working on projects where nobody knew the right answer. It was up to me to figure out how nature worked. I liked being on the cutting edge of research in chemistry. Ultimately, I changed my mind while I was in college and decided not to go to medical school but to go to graduate school instead.

Q: How did undergraduate research play a part in that pursuit?

A: I worked in the Andrews Research Group, investigating molecular spectroscopy, for three years until I graduated. Along the way, I published seven papers in chemistry journals as an undergraduate, and that helped me to get admission to the graduate school of my choice. Had I not had that experience in Lester's lab, that may not have been the case. Graduating from Caltech was instrumental in successfully landing a faculty job in chemistry. All that really started with the undergraduate research, and it was absolutely essential to my ultimate success.

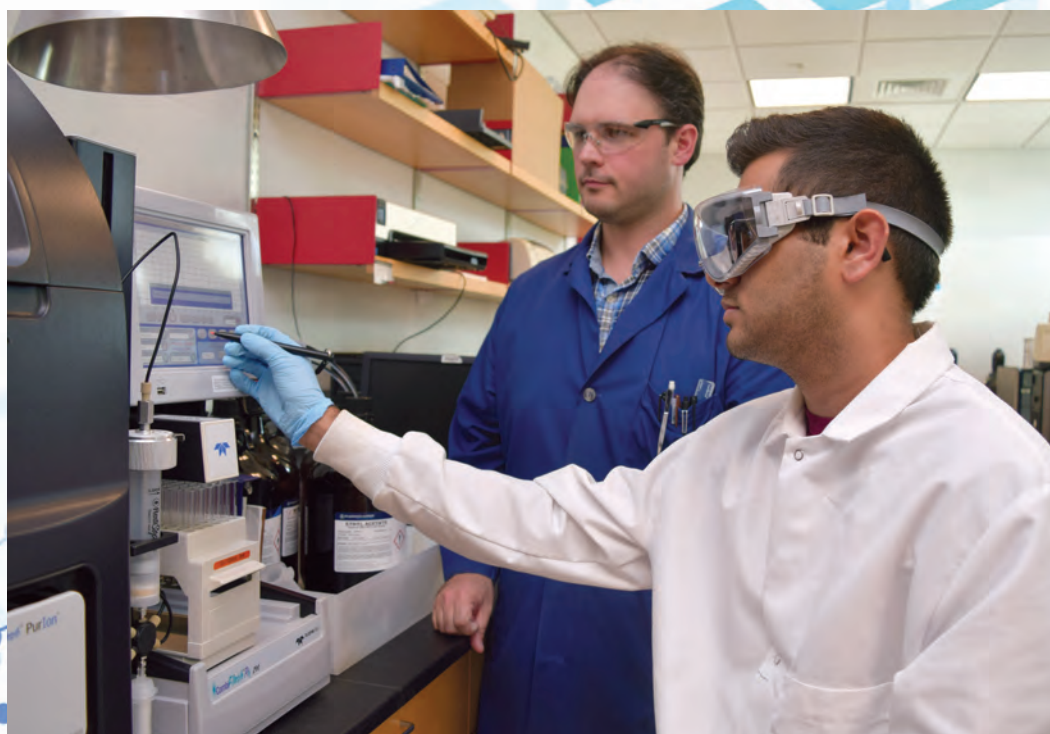
Q: What is your area of specialization?

A: I'm a physical chemist, which means I work near the boundary between chemistry and physics. But a better way of thinking about this is that I worry about what molecules are doing. Chemists usually work at the microscopic level, the molecular level. I spent many years making metastable molecules at extremely low temperatures and investigating reactions of explosives at extremely high temperatures.

"... I liked the discovery. I liked working in the laboratory, and I liked working on projects where nobody knew the right answer."

Q • How important are faculty members in undergraduate research?

A • Without Lester Andrews' help and guidance, I never would have had the opportunities to get excited about research, go to the best graduate school and have a really great career. Mentors can open doors for you that otherwise would be tightly shut. When you go to graduate school, when you get a job in academia, letters of recommendation are essential, and your mentors are the ones who can write those letters. They can pick up the phone and make a call to a friend to recommend you. They can watch out for opportunities for you to apply for fellowships and awards and things like that. Mentors are incredibly important, especially at the undergraduate level.



Q • Are there similarities between overseeing a university and working in the lab?

A • I think there are some similarities. In both situations, you end up teaching the people around you. But there also are very important differences. When you're in a lab, you're focused mainly on figuring out how nature works. When you're leading a university, that job is more about forming great relationships within and outside of the campus. These days, I'm less personally engaged in figuring out how nature works and more engaged in figuring out how people work.

Q • Have you had an opportunity to interact with students doing undergraduate research during your time at SU? What skills have you seen them gain?

A • I've visited students in some laboratories, especially in the Henson School of Science and Technology, to learn how their experience enhances their college education. I also have spoken with students from all the colleges and schools at SU when they present posters on their research. I see students explaining their work to other people in many different venues. I've been really impressed with the high quality of their work. It's no surprise that we have such a great representation of students each year at the National Conference on Undergraduate Research.

Q • What advice would you offer for SU students who are interested in undergraduate research?

A • I think it's important to get a good fit. I encourage students to interview several faculty members to see if their area of research is going to be an area of interest to the student, but also interview the current students in that group to learn what the research experience will be like. Once you choose a group, throw yourself into it because this is one of those cases where the more you put into the effort, the more you'll get out of it. I especially encourage students to complete a project, get to the finish line and try to publish that work in a journal because that will create a permanent public record of their achievement.

Salisbury University Makes More Records with Student Achievements!

By Dr. Kristen Walton, Nationally Competitive Fellowships Office Director



For the second year in a row, Salisbury University has been recognized by the U.S. Department of State as one of the Top Producing Institutions (Masters Level) of Student Fulbrights! With seven student Fulbrights between 2017-2018, SU demonstrates that our students can compare with those from the best institutions in the country (and even the world!). Salisbury students distinguish themselves through their commitment to the community and civic engagement, becoming strong campus leaders, engaging in undergraduate (and graduate) research opportunities, and by their willingness to reach for the moon.

This year, we also had a record number of applicants for the Fulbright, with 26 students completing the arduous application process. Each of these students should be commended and is a winner. Of those students, 13 have been chosen as Fulbright Student Scholarship semi-finalists for the 2019-20 year. Each of the schools/colleges at the University has a representative in this group of students; four are alumni, two are current graduate students and all of these students represent well the Salisbury University student body, with students of different racial and ethnic backgrounds, socio-economic status, several are transferred from community colleges, and others are first generation college students. Three of our students, David Basom, Noah Cline and Kenneth Forest (all of whom were advanced as semi-finalists), have served in the armed forces as well.

This year's students include:

Seven from the Fulton School:

- History majors Kateria Rodriguez (English minor, ETA to Macau), David Basom (secondary education, ETA to India), and master's student Ken Forest (ETA to Romania) and
- English majors Tara Ward (creative writing, Spanish minor, ETA to Panama) and Lilia Dobos (TESOL, Spanish minor, ETA to Costa Rica) have also advanced as semi-finalists.
- Spanish - secondary education and international relations double major Nelcy Avila is a semi-finalist to Colombia as an ETA.
- Conflict analysis and dispute resolution major Noah Cline is a semi-finalist for a Study Fulbright for Taiwan, where he hopes to gain his master's in Asia-Pacific studies at National Chengchi University.

One from the Perdue School:

- Rachel Rolle '18 is a semi-finalist to teach English in South Korea.

One from the Seidel School:

- Marie Hils, an early childhood education major is aiming to be named a Fulbright ETA for Mexico.

Two from the College of Health and Human Services:

- Graduate Student Catherine Raley '17 has been selected as a semi-finalist research Fulbright for New Zealand to study how a "pure water policy" affects childhood obesity.
- B.S.W./M.S.W. 2018 graduate Danesha Owens-Harrell is in competition to teach English in the Netherlands).

Two from the Henson School:

- Biology majors Callista Brown '17 (applying to study science communication at TU-Delft) Senior DAAD-RISE scholar and Goldwater Honorable Mention Lauren DeLong (researching molecular genetics and stem cells in Germany) are also semi-finalists for this prestigious award.

Ward, Hils, Raley, Brown and DeLong are also members of the Honors College.

The current applicants will find out whether they are named Fulbright Student Scholars later this spring.

Salisbury's Nationally Competitive Fellowships Office has guided over 60 students through applications this year for a variety of awards. With help from partners around campus, from the SU Center for International Education to TRIO to the Office of Undergraduate Research and Creative Activity, from Institute for Public Affairs and Civic Engagement to Honors, and with the support of innumerable faculty mentors, our students have gained success, whether or not they have won awards.

For the 2018-19 academic year, Larren Burgess and Maiya Robinson both have won Gilman Scholarships, Abiodun Adeoye has been named a Public Policy and International Affairs Program Junior Fellow for this summer, Hira Shahbaz has been notified that she is a semi-finalist for the Critical Language Scholarship, and we had a record number of students apply for the Truman, Udall and other awards. After not having had a single student apply for a Boren Scholarship, which gives up to \$20,000 for a language study abroad, since 2012, we had eight students submit applications to try to go to Tanzania, Morocco, Israel, Poland, Estonia, India and South Korea. SU is creating true global citizen scholars.

The faculty, staff and administration of Salisbury University do a tremendous job helping our students prepare for these fellowships and encouraging them to put themselves forward and try for these awards, despite intensive application processes. All of our applicants should be celebrated! Congratulations to Salisbury and all of our amazing students. As we like to say, it takes a village to raise a Fulbright Scholar ... or any fellowship student – and none of this would be possible without the support of the entire community at SU! ❖

Student Mentors

UNDERGRADUATE RESEARCH FELLOWS

By Drs. Jessica Clark & Chrys Egan, Office of Undergraduate Research and Creative Activity Co-Directors

The Undergraduate Research Fellows (URF) is a cohort of students with multiple semesters of experience in creative activities and/or research and a strong desire to bring these experiences to their fellow students. They serve as ambassadors to the Office of Undergraduate Research and Creative Activity (OURCA). Each undergraduate research fellow helps students find research resources and guides them in their work using the skills and knowledge they have acquired through their own experiences. This is accomplished through weekly office hours taking place in OURCA, through class visits, and by acting as a liaison between students, faculty and OURCA. In addition, they are involved in preparation, planning and presentation for a variety of events including: Salisbury University Student Research Conference, National Conference of Undergraduate Research, Posters on the Bay, Institutional Review Board Compliance Workshops, SU Open Houses, Scholars Day, Admitted Students Day, Salisbury Student Scholars and the academic journal *Laridae* (named for the family of birds that includes gulls).

Why URFs?

What better way to learn about the benefits of the Undergraduate Research Fellows program than to hear from the URFs themselves:

“Our role is to aid other students through the research process, from finding mentors to obtaining grants and attending conferences. We act as liaisons between the students and faculty across different schools, programs and fields,” said Amanda Rocker.

Austin Dabbs discussed the networking possibilities of the URFs: “Each URF has the unique opportunity to connect curious students to 10-12 other URFs with experience in research or creative activities in all of the schools on campus, as well as some faculty. This can be a valuable first step toward a fruitful undergraduate career in self-discovery and resume building.”

These connections highlight the importance and benefits of undergraduate research explained Rocker: “We want to show our fellow peers the great opportunities SU provides them with through research in their respective studies as well as support them through this experience, so they can get the most out of it and be successful. It is important for students, regardless of field to engage in undergraduate research as it provides them with experiences that they would not find in a classroom setting. Working closely with faculty and other research students not only instills in us necessary skills, but it also teaches us how to think conceptually and broaden our goals.”

For Dabbs, research is a critical way to open doors after graduation: “Research gives you something to talk about with members of the job market with whom you may want to network. It is really what networking is for. If you do research, networking in your field becomes easy and genuinely worthwhile, and people will remember your face after an in-depth conversation about the exciting work you do.”

Early Connections Lead to Senior Success

Senior URF Lauren DeLong, president of SU’s American Society for Biochemistry and Molecular Biology (ASBMB) student chapter, was featured in the February 2019 issue of the organization’s national magazine, *ASBMB Today*. She discussed how she began her SU experience as a high school student, reaching out to ask professors about their research. Unlike others she contacted, SU’s faculty responded. The accolades for DeLong continued in February as she joined fellow URF Kateria Rodriguez as among SU’s 13 Fulbright Student Scholarship semi-finalists (see article at left). ❖

Serving as student ambassadors and role models this year:

Eleanor Brown

Majors: Social Work and Political Science; Minor: Psychology

Kacie Cassar

Majors: History, Psychology, and International Studies; Minor: Political Science

Austin Dabbs

Major: Chemistry; Minor: Business Administration

Lauren DeLong

Major: Biology

Cameron Kane

Major: Computer Science; Minors: Business and Mathematics

Kerry Lynch

Major: Exercise Science Allied Health; Minor: Chemistry

Melissa Marsh

Major: Creative Writing

Julia Miller

Major: Chemistry Pre-pharmacy

Amanda Rocker

Major: Biology

Kateria Rodriguez

Major: History; Minor: English



ESRGC Puts Eastern Shore on the Map

Growing and Remaining a Voice for Communities

By Mikayla Wiseman

When the members of the Eastern Shore Regional GIS Cooperative (ESRGC) set out on their original mission to help a small Eastern Shore town map its water system, they had no idea how far beyond their borders their impact would reach.

Thanks to the organization's community connections, the expansion of GIS (geographic information systems) technology and their constant "beating of the drum" on the value of GIS, the ESRGC has built a strong reputation. The group not only provides technology and resources to local, small-town governments and businesses but now works for the State of Maryland as well.

"On the Eastern Shore, we suffer from a lack of voice in Maryland," said Dr. Michael Scott, interim dean of Henson School of Science and Technology. "The issues of the Eastern Shore take a backseat to the metro areas. But coming together, we can advocate for many different smaller groups."

It was an advantage Scott said they didn't see coming.

GIS may be applied to many different areas. You run GIS every time you open up Google Maps on your smartphone. GIS technology can not only tell you where you are but be applied to sea level rise, infrastructure, economic development and more.

The goal of the ESRGC is not just to provide services but also to expand capacity, so other groups can tackle these complex problems on their own. While GIS is flexible and useful for many issues, it still takes special training to be able to use it – and many smaller towns don't have the resources for a GIS analyst.

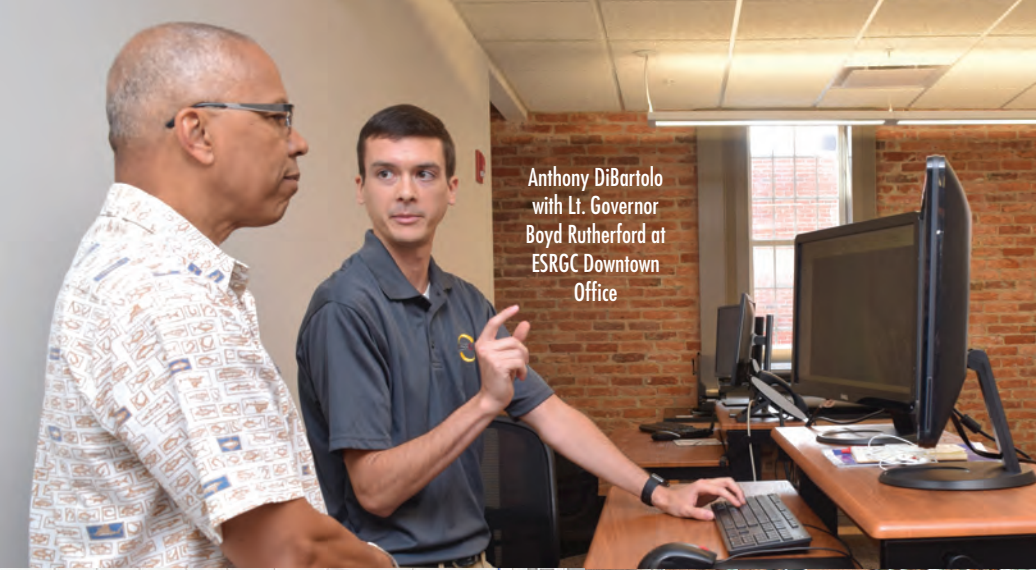
"Although these are small towns, they still have big-town problems," Scott said. "They still want to attract business, detect problems with their sewer and water systems, decide where school districts should be drawn, etc."

A Small-Town Advocate

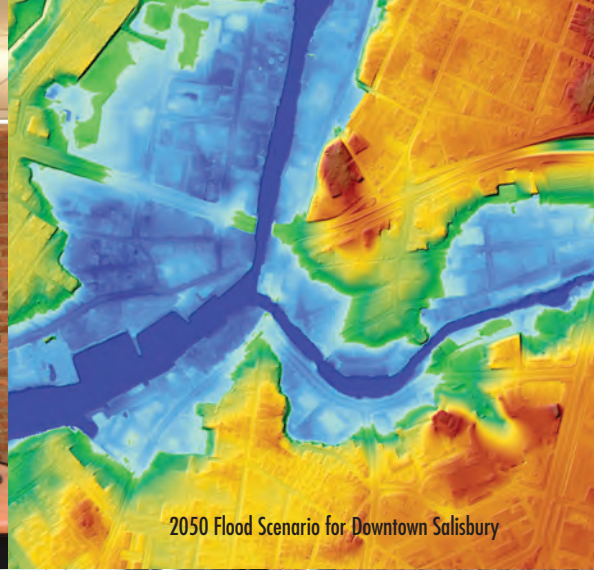
The ESRGC has taken on many challenges in its charge to advocate for small towns, from implementing asset management for Salisbury's water system to confronting environmental change. Thanks to the ESRGC traveling to Annapolis to lobby for aerial photography outside the metropolitan areas of the state, Maryland now has an air photo flight of the entire state every two years. This allows all regions of Maryland, no matter how far from the urban areas, to build solutions to their unique problems using that data.

"Our advocacy has built capacity, and we are very proud of that," Scott said.

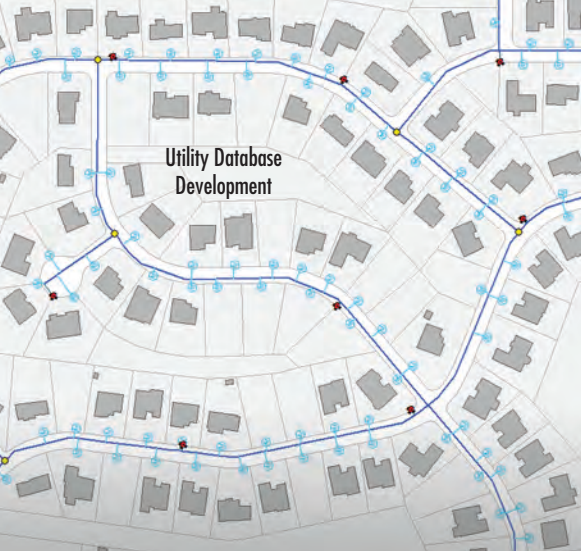
The ESRGC has now expanded from one employee working from a Henson Science Hall research lab 14 years ago to 10 full-time staff and three SU interns. The team recently moved into its new location in SU Downtown on the city plaza. But they have grown in more than size. Their outreach efforts have expanded to the entire State of



Anthony DiBartolo
with Lt. Governor
Boyd Rutherford at
ESRGC Downtown
Office



2050 Flood Scenario for Downtown Salisbury



ESRGC Staff

Maryland as well as surrounding states.

While Scott said the ESRGC has grown from just assisting small towns, they still have the original mission of providing resources to those that can't afford it or don't have access to it.

"It has become self-evident to people how important location, spatial analysis and mapping is," Scott said. "Now people understand how we can help."

Fighting for Environmental Change

Looking forward, location intelligence will become increasingly important as environmental change occurs.

"The sea level is rising, and that isn't going to go away any time soon," Scott said. "So, we want to help communities be resilient in the face of environmental change."

One way the ESRGC addresses environmental change is by projecting flooding and erosion rates caused by sea level rise, as they have in Dorchester County. They map where the land is eroding, what type of land is being affected

and to what degree. This information is valuable to the county for resource constraints; if their budget is limited, where should they apply their funds?

GIS helps compare locations and assess the threat. For example, if one area has a high erosion rate but is only affecting forests and another area with the same erosion rate has houses and communities, the ESRGC can help the county decide that the priority should be to fix the areas affecting people and homes.

The impact of drone technology is also a major change on the horizon.

"It's expensive. It's labor intensive," Scott said. "But launching a drone gets us on-demand information on anything from elevation to aerial photography data in an instant. That changes the game for us."

With drone technology, the ESRGC can partner with precision agriculture systems and help farmers figure out crop yields. For instance, map technology can open and close valves on a tractor as it drives down the field, automatically dropping the correct amount of fertilizer so resources aren't wasted.

Providing Workforce Development

With important, relevant projects like this, the ESRGC also gives SU students real-world experience. Following in its mission of providing resources to those who don't have them, the ESRGC has helped give its interns the agency to operate in a professional setting.

"We provide a workforce development initiative to train a new generation," Scott said. "The GIS managers in every county government are my former students."

Emily Caruccio, a former intern with the ESRGC, was one of these students. She said the organization was her introduction to the professional workforce and became her guide for her career.

"I had a lot to learn," Caruccio said. "I think the best skill I took away from working at the ESRGC was to understand that you have to embrace change. ... The knowledge I gained at the ESRGC has helped me throughout my career, as I learn a new skill almost every day."

First Ed.D. Graduates Pave the Way for Success



By Mikayla Wiseman

SU Ed.D. program faculty and graduates (back from left) Drs. Maida Finch, Heather Porter, Judith Franzak, Jenny McFadden, Gray Jack, Koomi Kim, (front from left) Courtney Harned, Frederick Briggs and Christine Taylor

“I chose to pursue my doctorate at SU because I was looking for a quality program close to home.”

—Dr. Frederick Briggs

Since the Maryland State Normal School at Salisbury opened its doors to 105 students in 1925, the campus that is now known as Salisbury University has grown vastly in size and reputation. In May 2018, more than 90 years later, six SU students became part of the institution’s ongoing legacy as they graduated from its first Doctor of Education (Ed.D.) program.

Looking at the graduates of the first cohort, one would think they are cut from the same cloth. They all endured a very rigorous program with strength and commitment, and they now find themselves in integral positions in the Eastern Shore’s educational system. One is now a top administrator for Wicomico County Public Schools, while another is a lecturer at the University of Maryland Eastern Shore.

However, not all of them began their academic journey knowing this would be their destination. In fact, some of them – like Dr. Jenny McFadden, now a developmental English instructor at Wor-Wic Community College – said they didn’t know what they wanted to do at all.

A Quality Program

“I chose to pursue my doctorate at SU because I was looking for a quality program close to home,” said Dr. Frederick Briggs, a three-time graduate of SU who is now the chief academic officer for Wicomico County Public Schools. “After attending an information session to learn more about this brand-new endeavor by the University, I was excited about the prospects of being one of the first graduates.”

Briggs attended SU as an undergraduate student majoring in mathematics, graduating in 1999 with a Bachelor of Science. He continued to pursue a Master of Education from SU and finally earned his Doctor of Education when he graduated with the first cohort last spring. He said his education from SU has been invaluable in his professional career.

"All three of my degrees from SU have enabled me to have a productive educational career in Wicomico County Public Schools," Briggs said. "The valuable instruction from a great group of educators and the earned degree both played a part in me moving into my current position as chief academic officer."

The Right Fit

Dr. Christine Taylor, a math teacher at James M. Bennett High School, also obtained all three of her degrees from SU, starting with her bachelor's degree in mathematics. After earning her master's degree in English, she was looking to start her doctorate degree and found herself in just the right place.

"I do feel like a much more equipped, reflective and passionate practitioner who not only cares about my students and my work but how I can improve my practice through research," Taylor said.

However, other students of the program found their way to SU by chance.

McFadden, while from the area, had a long road before ending up in her current position at Wor-Wic Community College.

"I wasn't sure what I wanted to do," McFadden said. "I thought I wanted to teach, but I wasn't ready. My grandma saw an ad for graduate teaching at SU, so I became a TA [while pursuing her master's in English] for my first teaching job. I learned a lot about trying to ensure the success of all students. The program prioritizes diversity, so I learned how to reach those minority students."

This experience has become vital for McFadden, as she teaches developmental English students.

A Critical Perspective

"I enjoy working with college freshmen," McFadden said. "I feel the learning is more authentic. College freshmen are very motivated to learn. They are there because they want to be. Most of my students know they are struggling and want to get better. You see progress in them, and that's very rewarding."

Dr. Heather Porter, SU's Center for Student Achievement assistant director, also ended up at SU by chance. She attended Randolph College in Virginia as a French secondary education major and later earned her master's degree in higher education at the University of South Carolina. However, she found herself in SU's Ed.D. program after starting her career overseeing academic support and tutoring initiatives.

"I fell back in love with learning," Porter said. "I wanted to understand the learning process and enhance college students' learning experiences. At the time, I was looking to continue my degree, SU had just started a curriculum and instruction program. It just happened at the right time."

Porter now oversees peer-led academic support services at SU. She works with faculty to develop programs to ensure students have the support they need.

"One of the biggest things enhanced for me was a critical perspective around literacy issues and educational practices," Porter said. "I learned about the issues impacting learning today, which strengthens my ability to develop tutoring services to ensure students get quality time studying and not just putting in hours. My research focused on understanding literacy development within the disciplines ... which helped prepare me to partner with faculty in designing out-of-class opportunities to support our undergraduates."

continued on next page ...

Meet the Grads

Frederick Briggs

- Current Position: Chief Academic Officer for Wicomico County Public Schools
- Graduated from SU: 1999 with Bachelor of Science, 2005 with Master of Education, 2018 with Doctor of Education
- What advice would you give yourself as a student?
"Speak up more often by asking questions, push back when you disagree with something and seek clarity when something is confusing. At the same time, continue to listen to others as you value the different perspectives of those from various backgrounds."

Courtney Harned

- Current Position: Lecturer in the English and Modern Languages Department at the University of Maryland Eastern Shore
- Graduated from SU: 2018 with Doctor of Education
- What advice would you give yourself as a student?
"You really have to commit yourself to the coursework and associated research. I was really invested in the program. I went into it understanding I would be sacrificing weekends and social time ... Had I not committed the way I did, I would not have been successful."

Gray Jack

- Current Position: Director of Worcester County Public School Judy Center
- Graduated from SU: 2018 with Doctor of Education
- What advice would you give yourself as a student?
"Take it one day and one assignment at a time. Always stay in constant communication with your professors and learn as much as you can from each of the professors."

Jenny McFadden

- Current Position: Instructor of Developmental English at Wor-Wic Community College
- Graduated from SU: 2009 with Master of Arts, 2018 with Doctor of Education
- What advice would you give yourself as a student?
“While it’s important to put forth your best effort, keep things in perspective. . . . Whatever the outcome is, you’re learning something that changes you forever. Do it one day at a time. Go to your faculty for help. It’s not about perfection but doing something that matters. It all falls into place as long as you’re motivated, so don’t worry.”

Heather Porter

- Current Position: Assistant Director of the Center for Student Achievement at Salisbury University
- Graduated from SU: 2018 with Doctor of Education
- What advice would you give yourself as a student?
“Make the most of the experience. Reflect on why you’re studying, follow that path and don’t lose sight of it. It’s not just about the degree but what you do with it. I see some students just go through the motions. I wish they’d realize that they’re here for a purpose and to pursue that purpose passionately.”

Christine Taylor

- Current Position: High School Mathematics Teacher for Wicomico County Public Schools
- Graduated from SU: 2011 with Bachelor of Science, 2013 with Master of Arts, 2018 with Doctor of Education
- What advice would you give yourself as a student?
“If possible, I would get more sleep and eat more. Otherwise, I think I took full advantage of my time there through teaching as adjunct faculty, a teaching assistant, presenting at research conferences, getting published and just enjoying my studies and my cohort.”

Research Focused

The research aspect of the doctorate program has been critical for the graduates, according to Dr. Courtney Harned, a lecturer at UMES who conducted research projects with Porter during their time together in the program. The program aligns with national guidelines for doctoral-level research and is respected as a research doctorate, and the two were even given the opportunity to present their research – a major positive for her experience at SU, Harned said.

“The expectations were high,” Harned said. “Application and reflection were both very important, and that made our learning important. We had a very diverse group. [Porter] was in student services, for example, and we had to take and transform what we learned so we could help students in our various positions.”

Dr. Gray Jack, director of the Worcester County Public School Judy Center, also has found the diversity of the program to be helpful in her career working in early childhood education. Looking forward as the doctorate program at SU continues to grow, Jack emphasized the importance of taking advantage of the opportunities available at SU.

“Take it one day and one assignment at a time,” Jack said. “Always stay in constant communication with your professors and learn as much as you can from each of the professors. The professors in the program all have a tremendous amount of research experience, are experts in their fields and can provide you with knowledge that you can utilize in your own career and your area of research.”

McFadden also had some advice to share with current students.

“While it’s important to put forth your best effort, keep things in perspective,” McFadden said. “I was hard on myself. I felt I had to be perfect, but once I saw how much I was learning and growing, it made me realize my GPA doesn’t matter 20 years from now. What is important is what did I learn? What did I change? How am I a better person?”

“Whatever the outcome is, you’re learning something that changes you forever. Do it one day at a time. It’s not about perfection but doing something that matters. It all falls into place as long as you’re motivated, so don’t worry.”

No matter where they came from or what their educational background is, all students of the doctoral program seem to have found their place by staying committed and taking life as it comes at them. Whether it’s promoting school readiness for young children or teaching technical writing at the university level, these graduates are making an impact in their field.

When all is said and done, Harned believes that SU was the right choice.

“I could not be happier with my degree and where I’m going with it.” ❖

““ I do feel like a much more equipped, reflective and passionate practitioner who not only cares about my students and my work but how I can improve my practice through research.””

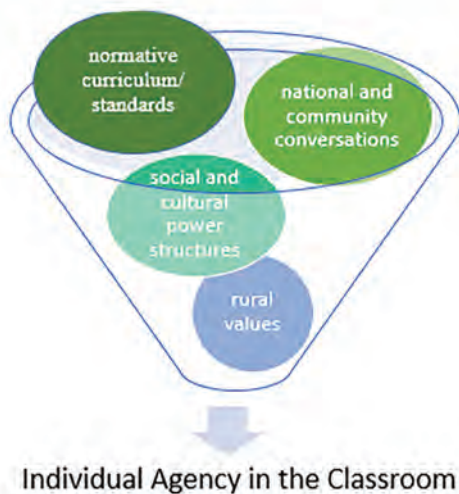
–Dr. Christine Taylor

Harned Earns Dissertation Award for Rural Education

By Judith Franzak, Ph.D.
Professor & Chair, Doctoral Studies in Literacy Department

Recent Ed.D. graduate Dr. Courtney Harned won the American Educational Research Association's (AERA) 2018 National Dissertation Award in Rural Education. As part of the AERA, the Rural Education Special Interest Group's (SIG) mission is to promote high-quality research that increases understanding of rural education, broadly defined, and has potential to benefit rural schools and communities. Dr. Judith Franzak, Harned's dissertation advisor, and Harned reflect on the significance of the research.

Dr. Courtney Harned's study sought to understand how rural students experienced learning and expressed agency when instruction was tailored to make connections to community and place, especially critical community issues. This study is unique because much research on rural education either portrays the rural area as lacking or overly romanticizes the rural context. Courtney's study starts with the idea of community strengths and demonstrated how adolescents and their teachers benefit when learning is local,



relevant and respectful. Recognition of her research by the American Educational Research Association Rural Education SIG is well deserved. Dr. Harned's work continues the strong tradition of SU contributing to our immediate local context. It is especially fitting that Dr. Harned is a member of the inaugural cohort of Ed. D. graduates, as overall the first cohort set a high standard of excellence for their work.

Dr. Harned shared her observations on her research and winning the award:

"My dissertation examined whether or not a critical, place-conscious curriculum, which encourages students to examine issues in their community, can serve rural communities in a way that decontextualized curriculum cannot. This approach to literacy learning positions students as active agents in their own learning, an agency that is imperative to developing citizens who are able to advocate in their own communities. These approaches may amplify the voices of those who are not heard because of the difficulty they have negotiating the literacies of the dominant culture.

"Although it was my hope, I was surprised by the eighth-grade students' immediate engagement in instruction that connected to their communities. I must also recognize the cooperating teacher who worked to leave behind traditional curriculum, promoted by the state for most of her teaching career, for instruction that promoted exploration of topics sometimes sensitive in the community.

"I would not have been prepared for this level of sustained research and analysis that this study required – including conducting a pilot study that examined community perspectives and then three months observing in a public middle school – without the doctoral program's focus on ethical, rigorous research." ❖





By Mikayla Wiseman

You may not think Captain America has much to teach society other than national pride and doing what's right. But a Salisbury University student's research on the timeless superhero taught one professor more than she expected about contemporary neo-Nazism and KKK movements.

Dr. Chrys Egan, Communication Arts Department faculty, recently presented on popular culture in undergraduate research at the Popular Culture/American Culture Association in the South's annual conference

in New Orleans. Egan considers studying pop culture a high-impact practice, a learning experience where students invest time, thought and effort for greater understanding and motivation in their own education.



Some people may consider pop culture like Marvel comics or Jennifer Lawrence's latest blockbuster to be a lesser form of expression because it is enjoyed by the masses. However, while they may not be classified as "fine art" like a Rembrandt portrait, Egan believes these are the very reasons why we should study and appreciate popular culture.

Pop Culture Connections

"Popular culture, like all forms of culture, is a barometer of who we are, what we value and how we express our ideas," Egan said. "A message resonates with a large number of people for a reason. ... Large audiences connecting with a message is a significant cultural indicator of a society."

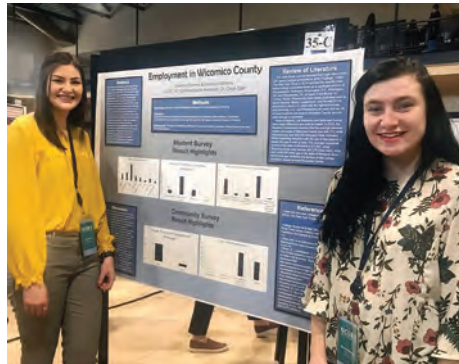
Since pop culture is broadly defined and inclusive, it allows students to investigate a wide range of topics that connect to their everyday lives. Student research topics at the conference in October 2018 ranged from conflict levels on the Eastern Shore to wedding planning to the American Western and homosexuality in *Brokeback Mountain*.

"Students can study whatever they like," Egan said. "I've mentored students through projects ranging from fostering community support for the re-introduction of the northern pine snake to analyzing how a female meteorologist's appearance impacts television audience's perceptions of her credibility."

By challenging students to study contemporary culture, Egan contends, students must use critical thinking, creativity and problem-solving skills.

"Popular culture, like all forms of culture, is a barometer of who we are, what we value and how we express our ideas..."

HIGH-IMPACT PRACTICES



"Becoming engrossed in enjoyable research leads to more active learning and retention, where students not only stay absorbed in their current education, but also better appreciate future advanced education, career training and lifelong learning," Egan stated in her presentation.

SU offers many types of high-impact practices for its students, including civic engagement, collaborative assignments and capstone courses. Through these experiences, Egan said students learn the value of hard work, investment in a project, and trial and error.

A Hub for Research

The Office of Undergraduate Research and Creative Activity (OURCA), where Egan is co-director along with biology assistant professor Dr. Jessica Clark, is one resource that promotes scholarship for SU students. OURCA functions as a central hub that

helps students find faculty mentors to establish projects with and also facilitates research-relevant training. It helps the project and the student move forward toward presentation and publication," Clark said.

"(Egan) and I co-direct, so we have someone in humanities and someone in sciences, which helps us manage the diverse projects being pursued across campus," Clark said.

OURCA connects students with various resources, according to the two co-directors. In addition to partnering students with mentors, the program organizes on-campus research conferences, helps students find funding for their projects and makes their research more visible to the community.

Every year, Egan and Clark also take students to present at two external conferences: the National Conference on Undergraduate Research and Posters on the Bay at the Maryland General Assembly.

Clark believes the biggest opportunity OURCA brings to SU students is awareness.

"Students come to us to find out how to approach the entire process," Clark said. "Our goal is to provide resources to lead them through the things they need to know, from presenting data to networking at conferences. We are there to help walk them through whatever aspects they need."

Through OURCA, students can research anything from anthropology to zoology, and they are connected with both peer and mentor support and opportunities. While taking on such a project may seem daunting, both Egan and Clark encourage students to visit them to take the next step with their research.

"Success takes time and effort, and does not necessarily look like what we envisioned," Egan said. "Learning to overcome failure and frustration is a major life lesson for all of us."

"Don't wait," Clark said. "Just take the leap. The earlier you start, the more experiences you can have." ❖



Faculty Mini-Grant Program

The SU Faculty Mini-Grant Program provides awards up to \$2,500 to encourage faculty to develop research, scholarly or creative programs that provide the potential for sustained professional development and “seed funds” to secure additional extramural support. The following is an overview of this year’s awardees.

Lost? Colonial Failures and Memory in the Early Atlantic World

Dr. Celine Carayon
History

There exists a pervasive, yet under-studied, phenomenon in the history of colonial America: Every European colonizing power experienced resounding failures in settling the American continent. The 16th century, especially, witnessed many disastrous attempts by colonizing groups, labeled “English,” “French” or “Dutch,” but often comprised of international participants, in their efforts to challenge Spanish and Portuguese domination and secure indigenous cooperation. Failed colonial attempts, whether aborted, abandoned or violently destroyed, were thus a cradle of transnational connections (official and informal) and played an important role in establishing later claims to parts of the American continent. Moreover, romanticized memory of past presence in the colonial Americas, regardless of the actual outcome, offered hopes for future revival and were crucial to securing funding for new settlements through promotional literature. Carayon is traveling to France to examine archival materials regarding the early attempts at colonization in the Guianas region and Caribbean. This project analyzes how the French, English, Spanish and Dutch strategically mobilized the memory of colonial failures, in official printed accounts, in personal and official correspondence, and in pictures (maps and engravings), to construct a positive narrative of imperial growth at the time of the events and in the longer term.

Small Molecule Candidates Screen for Treatment of Diabetic Peripheral Neuropathy in Zebrafish

Dr. Jessica Clark
Biological Sciences

Diabetic peripheral neuropathy (DPN), a type of nerve damage that typically affects the limbs and digits, is a debilitating disease affecting approximately 50 percent of diabetic patients worldwide. Yet a therapeutic treatment remains elusive. Clark has used zebrafish to create two models of DPN, allowing her to see in real-time the nerve components interacting — or in the case of DPN, degenerating. In her current study, Clark uses a small molecule drug screen to test thousands of different drugs, to gain insight to molecular nerve changes and drugs that may prevent degeneration. Access to this small molecule drug library allows for extensive testing in the zebrafish, which could not be done in humans. With students heavily involved in her lab, Clark’s research also provides unique opportunities for students proceeding to medical or graduate school.

Localization of Brain Activity Associated with Complex Stimuli in American Crows (*Corvus brachyrhynchos*)

Dr. Jeremy Corfield
Biological Science

American crows have a level of intelligence that is far superior to other birds, and even rivals non-human primates. Crows can outperform chimpanzees in certain cognitive tasks and show many signs of sophisticated behaviors, such as tool use, self-recognition, problem solving and or using past events to solve new problems. Their intelligence could provide valuable insight to the evolution of intelligent behavior in not only birds, but also

mammals, including humans. Corfield is examining the regional activation of immediate early genes (IEGs) in the brains of crows to identify which brain regions have been activated or involved by certain behaviors. Corfield and his students are capturing crows in Maryland and exposing half of them to known vocalizations with social meanings, such as begging calls, contact calls or predator warnings. Brain activity for these crows is compared to brain activity for crows not exposed to the calls. Knowing exactly where these complex vocal signals are processed in the brain helps explain why crows are so “smart” and birds like chickens are not, and it provides a basis to understand the neural mechanisms underlying complex behaviors.

Bread Loaf Literary Translators’ Conference at Middlebury College

Dr. Louise Detwiler
Modern Languages & Intercultural Studies

The study of language doesn’t stop with skills mastery. As with English scholars, scholars of modern languages examine the writing, research, literature, film and history within their language of study. Detwiler, a Spanish scholar, is attending the Bread Loaf Literary Translators’ Conference at Middlebury College, a competitive and nationally recognized educational opportunity for translators looking to improve their literary craft. Upon return, Detwiler is using the experience to design a new course for Spanish majors, Introduction to Spanish Translation, meeting a student need for more applied courses. She also is applying this training to her own research project, the translation of one of Eduardo Galeano’s essays from Spanish to English. The late Uruguayan author and literary giant Galeano is internationally recognized for his writings on history and memory in Latin America. One of his essays, “Memorias y desmemorias,”

remains untranslated into English. Detwiler has used this essay very successfully in her class Hispanic Culture through Literature. Given the passionate and razor-sharp insights he provides there about memory, history and power, the essay would be well-received in English in these highly partisan times.

Investigations in Adult Literacy Learning: What Assumptions About Learning Do Tutors Hold?

Drs. Maida Finch & Laurie Andes
Doctoral Studies in Literacy

Project READ is an adult literacy program offered through the Wicomico Public Libraries. Adults are paired with volunteer tutors, whom they meet with twice a week to develop literacy skills and practices. Tutors in this program range from college students to retired teachers, bringing a wide variation of experience to their teaching. Given the diversity of the tutors and the unique needs of adult learners, Finch and Andes wonder what assumptions and motivations underlie the tutors’ instruction. They are interviewing tutors to understand how they approach teaching and working with adult learners. The research question they strive to answer is this: What literacy theories do volunteer tutors ascribe to in teaching adult learners? They are using data analysis to see what themes and topics emerge. From there, they can evaluate the degree of alignment between the tutors’ assumptions and established literacy theories. Since the beginning of Project READ, faculty in the Department of Doctoral Studies in Literacy have collaborated with the library and project director to provide professional development and program evaluation services. By interviewing the 25 tutors involved in Project READ, they hope to determine how much their existing assumptions are in line with established literacy theories and to use this qualitative data to identify areas of strengths and areas of need among the tutors. This

allows them to offer recommendations for future tutor training in response, thus improving the program for future adult learners.

Image Acquisition by Drone to Model Coastal Areas in Chesapeake Bay

Dr. Giulia Franchi

Mathematics & Computer Science

Accurate measurement of coastal morphology, the study of the forces shaping the coastline, is critical for understanding how coastal environments function, assessing the state of bays and managing the coastal zone effectively. Franchi is using an Unmanned Aerial Vehicle, or drone, to construct a high-resolution digital elevation model (DEM) of the coastal areas in and around the Chesapeake Bay. Advanced software is allowing Franchi and her students to create digital models of coastlands, geometrically corrected to accurately reflect the Earth's surface. She is collaborating with the Horn Point Laboratory in Cambridge, MD. Together, they hope to create an accurate geomorphological model for Poplar Island, allowing changes in its coastal shores to be monitored. They also are creating a new database of these images and maps, allowing changes in the surface elevation and shore line shape to be monitored for erosion and deposition, a vital tool for many Chesapeake Bay communities.

Research at the Mütter Museum of the College of Physicians of Philadelphia and the Geraldine McAlpin Webster Reading Room in the Archives and Special Collections at the Augustus C. Long Health Sciences Library of Columbia University

Dr. Ryan Habermeyer

English

A fraudulent literary artifact is a fictional narrative that presents itself as an authentic non-fiction document. It is a little-known and rather unique literary form, but it is one Habermeyer is well-versed in, having used it in published short stories such as "Everything You Wanted to Know About Astrophysics But Were Too Afraid to Ask," a fake astrophysics

lecture (*Cream City Review*) and "The Good Nazi Karl Schmidt," a fake elementary school book report (*Fiction International*). Now undertaking a full-length novel, Habermeyer is writing a satirical manuscript that poses as an authentic Victorian medical encyclopedia, but it tells the story of a family of physicians struggling with the intersection of spirituality, race and medical advancements at the turn of the century. By travelling to access special archival collections, he is studying Victorian-era medical pamphlets, casebooks and diaries, such as the "Bellevue Hospital Casebooks, 1866-1916" and the 1880-1894 casebooks of a private obstetrician, to lend historical and stylistic authenticity to this manuscript.

Neural Correlates of Age-Related Changes in Associative Memory in Aging

Dr. Echo Leaver

Psychology

Memory and recollection can be studied by examining brain waves while a participant tries to recall pairs of words. Leaver, along with Dr. Meredith Patterson, is using EEG recordings of electrical activity along the scalp to compare memory recall in younger and older adults, to study the impact of aging on cognition. They are giving both younger and older adults pairs of words to memorize (such as dog-sink or fan-tree). Half are receiving no instructions other than to remember the words; half are instructed to form an interactive image for each original pair as a mnemonic device. Participants are then be asked to identify original pairs, rearranged pairs (such as dog-tree) or entirely new pairs (such as car-hose). The underlying brain wave responses create Event-Related Potentials (ERPs), which can be measured and compared with the results of their memory tests. As part of the growth of cognitive and neuroscience studies at SU, this research also gives students unique opportunities to conduct EEG research.

Border Making, Identity and the Limits of Empire on the Ottoman-Hapsburg Border

Dr. Emin Lelic

History

Lelic received funding for his project of a historical study of the creation and development of the Ottoman-Habsburg borderland in what is today the border between Croatia and Bosnia-Herzegovina, in South-Eastern Europe. While the administrative and military history of this border, which separated two major empires for centuries, has been studied by an older generation of scholars, the social, religious and economic life of the people who lived under the military and administrative system introduced by the two empires into the region has been neglected. This is precisely where this project steps in to resuscitate life in this liminal region, and through it, re-interpret the meaning of empire, as seen from the periphery. Lelic expands his research by accessing several major archives and examining their historical primary source materials. The archival collections containing valuable documentation are in Istanbul, Sarajevo, Zagreb, Vienna and Graz.

Examining Changes in Wellness During a 15-week Lifelong Fitness and Wellness Class

Laura Marinaro

Health Sciences

Emerging adulthood is a life stage between adolescence and young adulthood that is characterized by the hallmarks of exploration, self-focus, instability and limitless possibilities. For better or worse, many health and wellness behaviors are either abandoned or consolidated during this period, typically recognized as occurring between 18 and 25 years of age. In the university setting, students are often on their own and making health-related decisions independently for the first time ever in their lives. As such, this is a prime period for education and resource building. One way to educate students and provide them with resources for effective behavior change is through a class that includes information about wellness and allows them to engage in regular physical activity. SU's current Lifelong Fitness and Wellness class covers topics including health-

related fitness, nutrition, chronic disease prevention and stress management within the framework of the dimensions of wellness, and includes both lecture and activity components. Marinaro studies the impact of this class. Interested students are surveyed using the "Perceived Wellness Survey" and the "Behavioral Regulation in Exercise Questionnaire." Surveys are administered at the beginning and end of the semester so that any changes that take place can be evaluated. Further analysis also takes place to evaluate potential group differences between students based on demographic characteristics (gender, on-campus/off-campus residence, etc.) and class delivery mode (online vs. face-to-face lecture, self-directed vs. instructor-led activity) as well as to determine whether behavioral regulation as it relates to exercise can predict perceived wellness.

Ad Likeability and Ad Element Likeability of Advertisements Across Cultures: A Case for Standardization of Audio-Visual Elements in Persuasive Messages

Dr. Andrew Sharma

Communication Arts

As global brands increase, marketers have begun advertising across cultures. But, is a likable and persuasive advertisement in one culture still likeable and persuasive in another? In a study that analyzes the cultural effect of audio-visual advertising imagery, Sharma is building the case for standardization across cultures and is creating a scale of the cross-cultural likability of ad elements. His research involves two standardized advertisements, with each ad element categorized. Undergraduate students in both the United States and Sri Lanka rate both the overall likability and the likability of each element. Sharma is using the resulting data in his research, future publications, and in classes on advertising campaigns and media production. ❖

Graduate Research and Presentation (RAP) Grant Program (Spring and Fall 2018)

The Office of Graduate Studies and Research provides research grants, up to \$500, to help graduate students develop research and scholarly projects with faculty supervisors and present their projects at various conferences and meetings. The program enables students to receive recognition for their work and provides networking opportunities and professional development in their field of study.

Determining Potential Competition for Food Based on Stable Isotope Analyses of Diet in the Endangered Spotted Turtle (*Clemmys guttata*) and Other Turtles Found in Same Habitat

Eaqaan Chaudhry, Applied Biology

Habitat selection in several species is determined by both environmental conditions and interspecific interactions. Chaudhry is studying the extent to which each of these factors influences habitat usage in the endangered spotted turtle (*Clemmys guttata*). Environmental conditions will be determined through water quality measurements and quantification of other habitat parameters. Interspecific interactions will be investigated in two ways: Chaudhry is comparing the presence and absence of spotted turtles in ponds with other turtle species. However, the relative coexistence of multiple turtle species in one pond does not definitively delineate the type of interaction. Chaudhry then is identifying any similarities in feeding ecology (and potential competition for food) by way of stable isotope analysis. Chaudhry collects keratin samples from the turtle claws and conducts stable isotope analysis to determine if similar carbon and nitrogen isotopes are found among different turtle species. These complimentary methods will determine with confidence whether the turtle species are potentially competing for a) habitat resources (by comparing habitat quality where they are found) and b) food resources (by comparing stable isotope profiles).

Does Conspecific Noise Impact Signal Recognition in Female Tungara Frogs?

Derek Coss, Applied Biology

Dense aggregations of frogs pose a challenge for females detecting signals from potential mates. In the tungara frog, male choruses produce a cacophony of noise, both vocal (complex advertisement calls) and visual (inflations in their vocal sac). This multimodal signal is more attractive to females than the vocal component alone. Females face the challenge of deciphering all these signals and choosing the preferred call. In quiet conditions, females consistently choose the most attractive call. However, when those calls are broadcast in a noisy environment, the preference begins to shift as complexity of the environment increases, suggesting that their sensory processes in the brain become overwhelmed. This phenomenon mirrors the cocktail party effect in humans. Disorientation is especially true when the noise originates from conspecific neighbors. Coss' project focuses on understanding how noise generated from conspecifics and heterospecifics affects the ability of females to distinguish among male vocalizations that vary in attractiveness. Coss is using synthesized calls with differing acoustic properties for background vocal noise and dynamic robotic frogs for background visual noise. This study is one of the first to examine how near-natural acoustic and visual noise could lead to potential cognitive overload in anurans.

Diet and Drivers of Interspecific Interactions Between Dominant Ctenophores and Forage Fishes in Maryland Coastal Bays

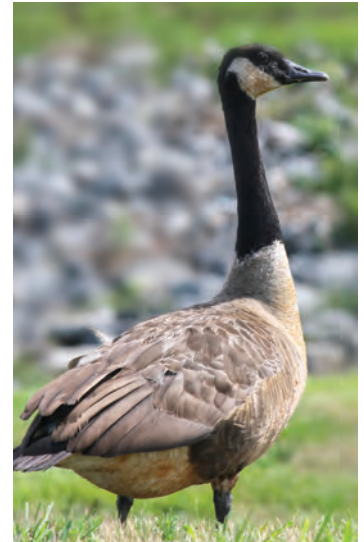
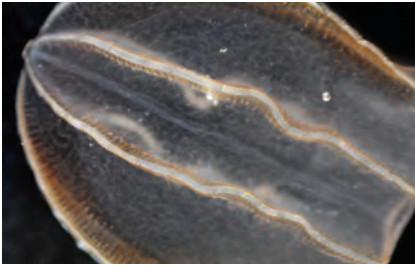
Sarah Cvach, Applied Biology

This study looks to elucidate the diets and drivers of interspecific interactions between dominant ctenophores and forage fishes in the Maryland coastal bays. Samples of zooplankton, ctenophores, Atlantic silversides, bay anchovies and silver perch are taken from various sites in the five predominant coastal bays along Maryland's Eastern Shore. The degree of dietary niche overlap is evaluated using the stable isotopic compositions of the potential mesozooplankton prey and the targeted consumers. Along with dietary interactions, abiotic factors such as salinity, temperature and dissolved oxygen are studied to look for any relationships between these factors, prey or consumer abundances and other biometrics. Over the course of the year, variations in water quality may favor juvenile forage fishes or ctenophores, impacting biomass and productivity of these individuals. Expected interspecific competition may influence coastal fisheries health by changing stocks of game fish and other larger species targeted by anglers that consume smaller forage fishes as part of their diet. The outcomes of this research project begins to address these possible interactions and may be used in future fisheries models to manage and predict the health of important recreational and commercial stocks.

Comparative Study of Somatosensory Pathways in Waterfowl

Kelsey Flowers, Applied Biology

There is a wide array of species within the category of waterfowl (Anseriformes), including ducks, geese and swans. The species that are composed of the waterfowl order forage on a variety of different foods such as grasses, aquatic plants, fish, insects, small amphibians, worms and small mollusks. Due to this, there are multiple feeding behaviors that waterfowl exhibit to obtain their food source in an efficient manner; examples include dabbling and diving. Although there are a variety of foraging tactics, the overall beak structure is similar throughout Anseriformes. The foraging tactics of waterfowl rely heavily on sensory and visual cues. Some species have been found to be somatosensory specialists; whereas, others are classified as more visual specialists. Flowers investigates two main aspects of the neuroanatomy of a plethora of Maryland native species: the anatomical structure of the trigeminal nerve (nV) and the location of mechanoreceptors within each species' beak. By examining these aspects, Flowers is beginning to gain neuroanatomical drivers behind foraging behaviors in waterfowl.



Temporal Patterns of Temperature Acclimation in *Fundulus heteroclitus*

William Gough, Applied Biology

Atlantic killifish, *Fundulus heteroclitus*, are distributed along the Atlantic coast of North America from Canada to Florida, one of the largest thermal gradients in the world. Killifish respond to long-term temperature change by undergoing well-documented changes in physiology. Unknown is the temporal sequence of these changes. Gough's team's hypothesis is that different mechanisms of thermal acclimation occur at different rates. By studying these differences, it might be possible to identify mechanisms that represent "emergency" responses versus more long-term mechanisms. Gough's team proposes to monitor the changes that occur in the expression of key metabolic genes during and after exposed to rapid (nine hours) changes in temperature. The results of this work provide insights into predicting which species may be more or less sensitive to climate change.

Drone Mapping, Lake Victoria, Africa

Noah Krach, Geographic Information Systems Management

Fish farming aquaculture is a rapidly developing industry in Lake Victoria, Africa. As this industry grows, it is having adverse effects on the lake's ecosystem. Local research teams on the lake have been tasked with modeling and evaluating how these cages impact the lake. Researching models are only as good as the data sets that are used. Models predicting output of aquaculture cages are only as accurate as the known location of the cages. For this reason, it is important to have accurate cage locations. Krach's research team can provide accurate results using drone technology provided by the Salisbury University Geography and Geoscience Department. The team is flying the drones over the lake to record aquaculture farming locations. The drones capture area of interests and produce high-resolution imagery as well as other geographic datasets. The data is retrieved from the drones for post processing. Following the processing of the data, it is handed over to the researchers at the local fisheries institutions. These datasets allow researchers to accurately model the cages' impact on the ecosystem and allow them to better plan for the future.

Understanding Perception in Complex Sensory Environments: The Tungara Frog as a Model System

Rosalind Ludovici, Applied Biology

Communicating in noise is a difficult task requiring the cognitive integration of complex signals. Frogs present an ideal system to study communication systems in noise. Male tungara frogs congregate around shallow breeding ponds, producing a noisy chorus and they also have an inflatable vocal sac that is coupled with sound production. Females find this multimodal courtship signal attractive; therefore, the integration of both acoustic and visual signals is critical in understanding mate choice. Females consistently choose the most attractive calls in a two-choice test, but when the signaling environment becomes more complex, preferences begin to shift. This may indicate that the underlying sensory processes in their brains become overwhelmed, similar to humans who have difficulty communicating at a noisy cocktail party. Ludovici seeks to understand the cognitive mechanisms involved in communication between these frogs by examining the effects of signal complexity on mate choice preferences. Ludovici is using three-choice tests containing male vocalizations varying in attractiveness to test female preferences. Ludovici then is adding a visual cue in the form of a dynamic robotic frog and/or broadcast background noise that overlaps with the male vocalizations. The results are evaluated in the context of economic rationality models.

Latina Migrant Families' Literacy Experiences in Home, School and Community

Megan Miller, Doctor of Education

This ethnographic inquiry seeks to examine the literacy experiences of Latinx migrant families in their home, school and community contexts. Utilizing multiple methods of data collection, including observations in varied community contexts, semi-structured interviews and multimodal artifact collection, this study is designed to explore the literacies and lived experiences of the participants holistically. In the current climate, notably marked by opposing stances on immigration and citizenship, it is imperative to illuminate the experiences, knowledge and voices of Latinx migrant families. This research could potentially facilitate a counter narrative to the deficit perspectives traditionally employed to describe migrant families and students. Further, the findings could contribute to ways that migrant children could be better served by schools.

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Can You Hear Me Now?: Three Listening Experiments (Listening within Diverse Realities)

Lauren Hatch Pokhrel, English

Recently, scholars of rhetoric have lowered their voices, leaned in, and attuned their ears and bodies to listening postures. This research takes up three different experimental practices of the often-difficult labor of listening. Hatch Pokhrel's team begins by inviting the audience into a listening posture. What do our bodies do when they listen? How can that be intentionally cultivated? The team then offers the voices of "strange strangers," which entails asking the audience to transform their listening habits in a way that enables them to entertain the new propositions. The team then continues to take them through the three different listening practices, inviting them to do and feel the labor — the hard work — of listening itself. The team ends by inviting possibilities of the labor of listening in our classrooms, our scholarship, and also our cities and communities. Ultimately, through these three different listening experiments, the team asks their audience to do listening, to try out their listening experiments as a means toward paying attention and to re-imagine their work through the labor of listening bodies.

Embracing the Experiences of Middle School Writers in America

Jaimie S. Ridgely, Doctor of Education

This qualitative interview study explores how middle school students perceive their in- and out-of-school writing experiences. Data sources include three semi-structured interviews focused on the following: (1) an adaptation of the Cross-Level Motivation to Write Profile, (2) stimulated recall using participant created writing and (3) completion of an activity where texts are ranked according to perceived quality with justifications for evaluative moves. The sample was selected using purposive sampling; four participants were selected to participate. Preliminary findings suggest that engagement and motivation to write are impacted by community, authenticity and pleasure.

A Comparison of Two Methods to Estimate Population Size and Water Quality Effects on Pond Use of the Eastern Tiger Salamander (*Ambystoma tigrinum*) in Maryland and Delaware

Hannah Small, Applied Biology

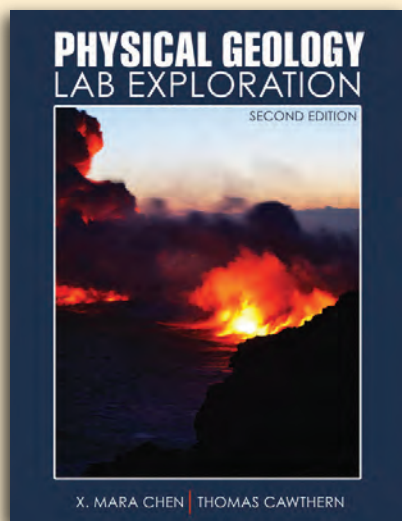
Understanding how population growth rates change in response to habitat change is important to implementing and measuring conservation goals but often difficult to measure. Optimizing choice of population estimation can be complicated further by species that are difficult to detect or count. Small intends to estimate deme- and meta-population sizes for the state-endangered Eastern tiger salamander (*Ambystoma tigrinum*) in one of two sets of breeding ponds in Maryland and Delaware. The deme sizes are then estimated using two different methods: 1) by directly marking and recapturing individuals and 2) indirectly by visually counting the number of egg masses in a pond. These methods then are compared to determine their efficacy and understand how they vary temporally. Water quality parameters and other habitat characteristics are measured. Small then identifies, if any, relationships between the two methods used to collect population estimates and the habitat characteristics. Understanding the relationships between population measures and habitat characteristics that affect *A. tigrinum* breeding is important to making management decisions for this species of conservation concern. This research can then be expanded on to study *A. tigrinum* throughout its range and other endangered pond-breeding amphibians that are also difficult to detect.

Practitioner Inquiry in Literacy: Who Are the Scholars? What Are They Investigating?

Chelsea Tyndall, Doctor of Education

Practitioner inquiry has been a focus in education for nearly three decades, yet despite the attention, there is scant systematic knowledge about its practice. This year's AERA theme calls us to "build knowledge to support the quest for equitable educational opportunity" and to learn from the "first-person experiences" of scholars in schools. The current study seeks to do just that — Tyndall's team is conducting a content analysis to examine the scholarly inquiry of practitioners as they endeavor to improve literacy practices for their students. The findings from this study help them understand aspects of how practitioner action research have been supported and promulgated by the educational research community particularly in regard to professional organizations that publish practitioner-oriented journals. ❖

RECENT FACULTY BOOKS



Physical Geology Lab Exploration

by Thomas Cawthern, Assistant Professor, Geography and Geosciences
& X. Mara Chen, Professor, Geography and Geosciences

Physical Geology Lab Exploration is designed and written for the introductory physical geology course. It provides students with fundamental concepts and principles, as well as examples and lab exercises to apply what is learned in lectures and reading. The primary objectives are to promote and nurture learning through critical thinking and active hands-on activities for problem solving, to achieve a better understanding of earth's internal composition and structures, and to obtain a deeper appreciation for the surface landform features and earth's external dynamic processes.

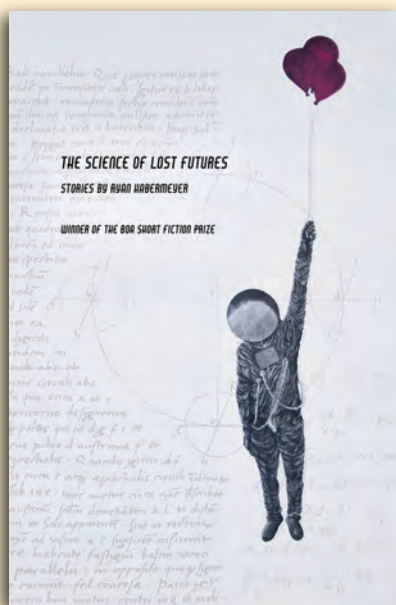
Kendall Hunt Publishing, 2018

The Science of Lost Futures

by Ryan Habermeyer, Assistant Professor, English

The Science of Lost Futures is a prize-winning collection full of quirky humor and intelligent absurdity. Habermeyer is a yarn spinner of the first order. Drawing on urban legends, Internet hoaxes and ancient medical folklore, these stories go beyond science fiction and magical realism to create a captivating collection of fabulist stories that revel in the alien and the absurd.

BOA Editions, 2018



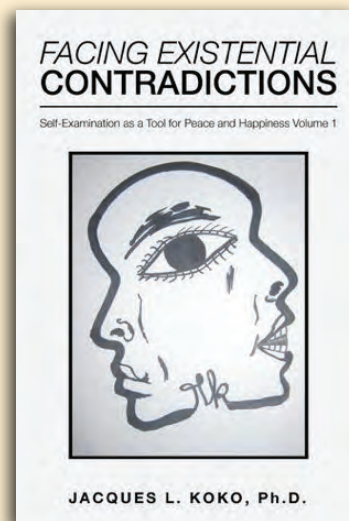
Facing Existential Contradictions:

Self-Examination as a Tool for Peace and Happiness, Vol. 1

by Dr. Jacques L. Koko, Associate Professor, Conflict Analysis and Dispute Resolution

This book carefully tries to unravel the puzzle of existential contradictions and happiness. It reflects and translates, piece by piece, Suru's practice of self-examination in the midst of existential contradictions. Throughout the lines of Suru's adventures or stories, the book unveils the transformative potential of self-examination for peace and happiness. In Suru's experience, the human journey to peace or happiness is a long one. Suru's certainly remains a long and challenging one. Every time Suru thinks or feels like he has conquered peace or happiness for good, he ends up being wrong. He ends up losing his peace; his happiness escapes and challenges him to keep on running after the goal. And when he succeeds in catching up with it anew, peace dwells within his mind and heart for some time and escapes again. Suru keeps on longing for peace and happiness. His road to happiness is filled with contradictions, and his search for peace seems endless; it is like a lifetime journey. Every time the roadblocks of contradictions show up, they force the train of Suru's journey to stop for a moment. Fortunately, self-examination transforms that stop into the opportunity of a much-needed station for the train of his existence. At that station, Suru pauses and takes the time to evaluate the direction of his existential movement to find his lost peace. In the midst of existential contradictions, it could be difficult to find peace. The path to peace could become nebulous. But with the tool of self-examination, peace is likely to find you.

Balboa Press, 2018 ❖

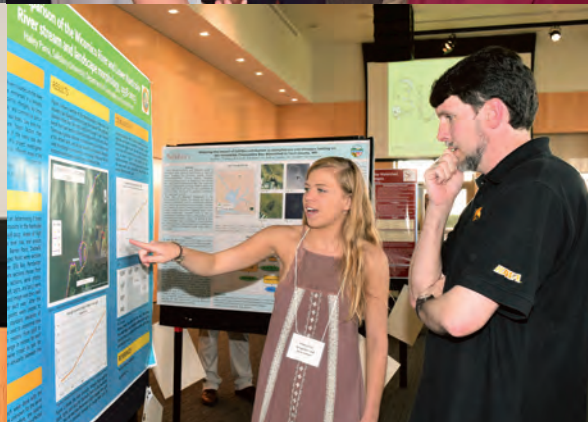
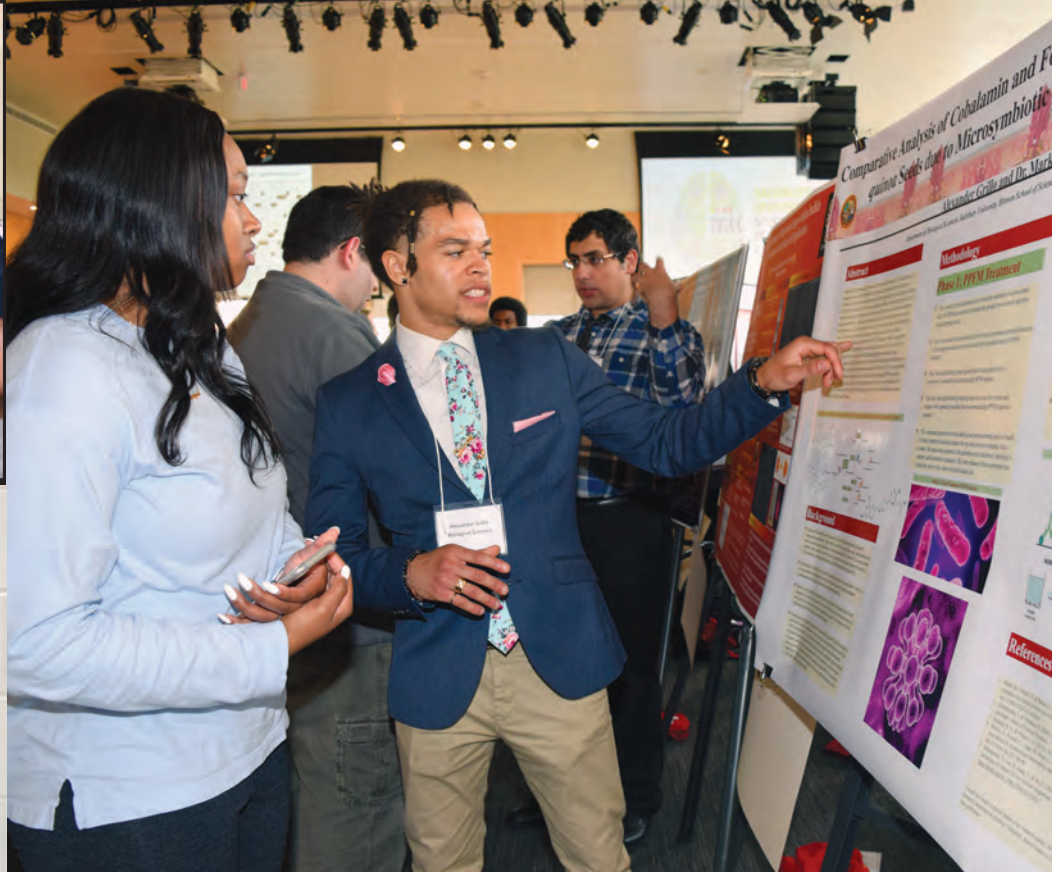
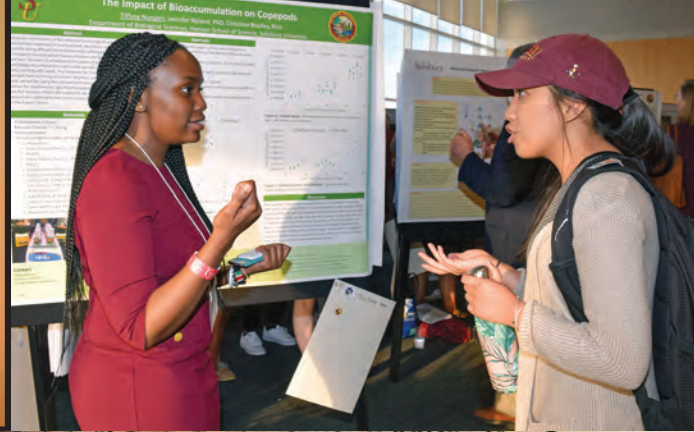


20th ANNUAL SALISBURY UNIVERSITY STUDENT RESEARCH CONFERENCE



Salisbury University students presented their research on topics ranging from the sciences, to the liberal arts, to business, to education and healthcare during the 20th Annual SU Student Research Conference. Highlights included the presentation of the 2018 Outstanding Research Mentor Award to Dr. Stephen Habay of the Chemistry Department.





SAVE THE DATE!
**SU Student Research
Conference**
April 26, 2019

Graduate Studies at Salisbury University



MASTER'S PROGRAMS

- Applied Biology (M.S.)
- Applied Health Physiology (M.S.)
- Athletic Training (M.S.A.T.)
- Business Administration (M.B.A.)
- Conflict Analysis and Dispute Resolution (M.A.)
- Education (M.Ed.)
- Educational Leadership (M.Ed.)
- English (M.A.)
- Geographic Information Systems Management (M.S.)
- History (M.A.)
- Mathematics Education (M.S.M.E.)
- Nursing (M.S.N.)
- Reading Specialist (M.Ed.)
- Social Work (M.S.W.)
- Teaching (M.A.T.)

POST-BACCALAUREATE CERTIFICATES

- Higher Education
- Teaching English to Speakers of Other Languages (TESOL)

POST-MASTER CERTIFICATES

- Advanced Study in Educational Leadership
- Educational Leadership
- Literacy Educator

DOCTORAL PROGRAMS

- Education - Contemporary Curriculum Theory and Instruction: Literacy (Ed.D.)
- Nursing Practice (D.N.P.)

POST-DOCTORATE CERTIFICATE

- Family Nurse Practitioner (Post-D.N.P.)