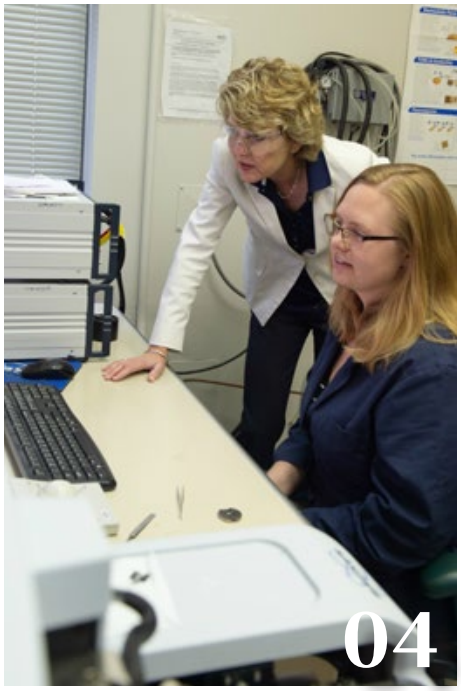
ARETE

THE UNIVERSITY OF SOUTHERN MISSISSIPPI
GRADUATE SCHOOL MAGAZINE

Winter 2018-19

Contents



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Letter from the Dean

Welcome to the second issue of *Arete*, the annual magazine of the Graduate School at The University of Southern Mississippi. Within these pages, we have taken the opportunity to showcase some of the people and programs that distinguish graduate education at Southern Miss. Our institution has undergone a major academic reorganization over the last year, reducing the number of academic colleges from six to four and clustering programs into the broader umbrella of schools rather than within the confines of departments. The intent is to foster collaborative research and programming with the removal of organizational barriers, enhancing opportunities for innovative scholarship.

In this issue, we focus on exceptional graduate students, faculty, and programs from each of the four colleges. From the brand new College of Arts and Sciences, we feature Professor Sarah Morgan, executive associate director of the School of Polymer Science and Engineering, whose contributions to student success resulted in her selection as the 2018 Graduate Mentor of the Year. Within the College of Business and Economic Development, we spotlight the Master of Business Administration (MBA) program with sport security management emphasis, which results from a partnership with the National Center for Spectator Sports Safety and Security (NCS^4). MBA student Jacob Neal recounts his experience in this one-of-a kind program. A story about the research of psychology professor Michael Anestis and his doctoral student Sarah Butterworth, from the new College of Education and Human Sciences, provides timely insight into factors impacting lethal suicide attempts. Clinical product research and development, improved methods of nurse anesthesia training, and health disparity are research topics of faculty in the College of Nursing and Health Professions, which are featured in this issue.

Moreover, our diverse graduate student body includes traditional and non-traditional students from all across the globe. Their contributions to scholarship and service enrich the culture of our campuses. After reading this magazine, I hope you will consider pursuing a graduate degree or certificate at Southern Miss or supporting graduate education through your gifts. I sincerely believe this issue captures the essence of what "arete" means to us at Southern Miss - the pursuit of excellence in graduate education.

Dr. Karen S. Coats
Dean of the Graduate School


“Almost everything has a surface or interface that can be examined and altered, and we study ways polymers interact with surfaces to achieve specific types of performance.”
Dr. Sarah E. Morgan

Guidance and Collaboration Essential to Success

Dr. Sarah E. Morgan, 2018 Graduate Mentor of the Year

As a professor and the associate director of the School of Polymer Science and Engineering, and with over 13 years of experience in engineering thermoplastics at General Electric, Dr. Sarah Morgan brings a wealth of both industrial and academic knowledge to her classroom and research program. Dr. Morgan's application of this knowledge, attention to the individual needs and interests of students, and awareness of the professional environments for which she is preparing graduate researchers have earned her recognition as the 2018 Mentor of the Year.

Dr. Morgan received her undergraduate education at Rice University in Texas, her PhD in polymer science from USM, worked at Bell Labs for a year after graduation, and specialized in research and technology management at GE Plastics. While earning her degree at USM, Dr. Morgan worked in "surfaces and interfaces" with her graduate advisor, Dr. Charles McCormick, who became her colleague once she returned to the university. Dr. Morgan cited the value of his mentorship and went on to discuss the valuable role mentors have played all along.

Even in high school and in fields unrelated to her future profession, such as playing piano and flute, the encouragement Dr. Morgan received inspired her. John Flock, a PhD in chemical engineering and a "strong advisor," helped her learn aspects of engineering at GE with which she had no previous experience. Working in industry and at a multinational company, she had the chance to collaborate with people from around the world, giving her international and interpersonal experience, as well as management training. Jack Welch, CEO of GE at the time, "worked to inspire the best in people, show the value of interdisciplinary and international efforts, how we must work together toward common goals to drive progress," Dr. Morgan said. She embraced these examples, taking opportunities to work in leadership and technical management and develop skills she would eventually apply as an educator and mentor herself.

After over a decade at GE, Dr. Morgan decided to return to USM, wanting to work with students and aid their development as researchers. Among her reasons for returning to academia, she cites the uniqueness of the polymer science program and the focus on students. She notes the faculty focus on the development of their graduate researchers rather than making a name for themselves. Other universities and national labs are aware of the rigorous academic standards and intense coursework polymer science students must complete. They are equipped with the fundamental expertise that employers seek in the candidates for research positions at USM. The program, like the field of polymer science in general, is highly collaborative, and the students learn to work in tandem to "collaborate around" their weaknesses and to determine and develop their strengths.

"Not only did Dr. Morgan provide me with several opportunities to further the advancement of my research, she also taught me how to effectively collaborate," said Katrina Knauer, USM alumnus and research group leader at Badische Anilin und Soda Fabrik (BASF). "While in her group, I collaborated with several companies such as Boeing, Solvay, and the Spaceship Co. We also collaborated with other universities, such as University of Alabama, as well as internationally with the Indian Institute of Technology in New Delhi, India. As a result of these collaborations, I was able to live in India for three months on a research project and had one of the most amazing experiences of my life."

Katrina also spoke to Dr. Morgan's job search assistance. "She spent several hours with me to improve my interview skills and strengthen my résumé. She taught me how to brand myself, and this training ultimately led to an offer to join BASF (a Fortune 100 company) as a research scientist. I rarely see that kind of dedication from graduate advisors. I have now been at BASF for two years, and I continue to implement the teachings of Dr. Morgan into my professional life. I reach out to Dr. Morgan on a regular basis for guidance and she continues to be a mentor in my life that I truly admire and respect."

The broad applications of polymer research help contribute to students' professional appeal and success. Polymers are large macromolecules that are present in animals' bodies and our own. By studying "biopolymers," such as proteins, polysaccharides, and DNA, scientists are able to develop synthetic polymers that emulate the functions and characteristics of biopolymers or produce entirely new effects. While Dr. Morgan describes her research as bio-inspired, she is quick to mention that all sciences share this interest in nature.

Just as synthetic polymers are produced in tandem with nature, their study is inherently interdisciplinary and collaborative, as industrial leaders fund polymer research to manufacture stronger and more efficient substances and products. Biopolymers provide inspiration for the types used in cosmetics and medicine. Natural fibers like cotton influenced polymeric nylon, Kevlar, and Teflon. Cellulose, which makes up the structure of trees, is used in the development of structural polymers. These molecules are present in our day-to-day lives, in both our bodies and the environment, and the work of polymer researchers deepens the relationships between natural and manufactured worlds.

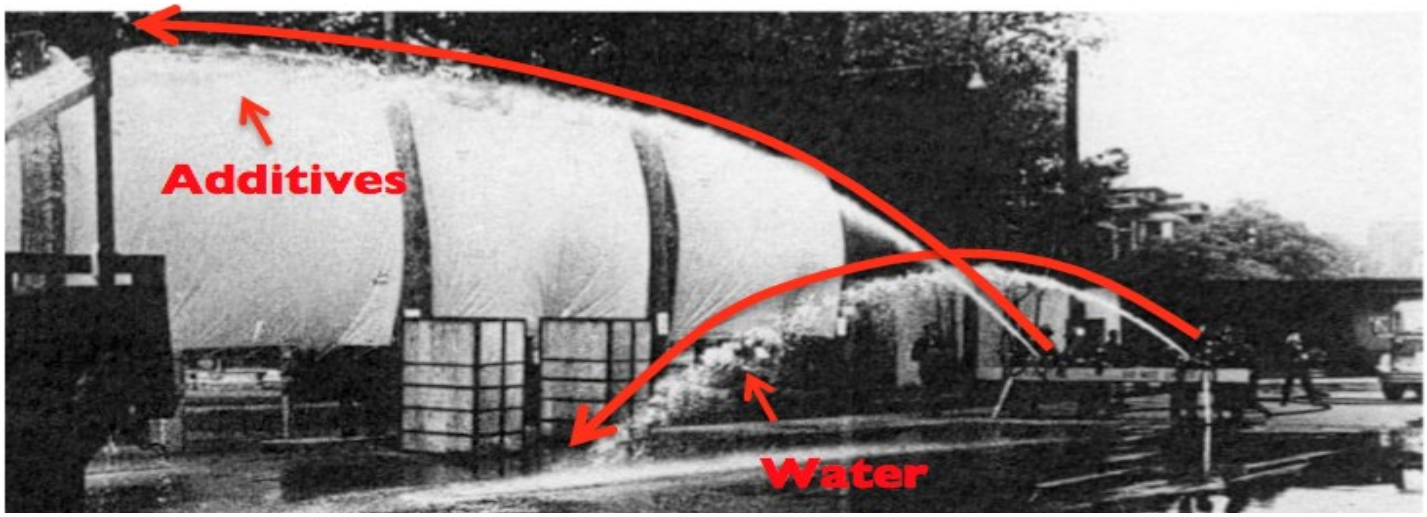
Dr. Morgan's primary research area is surfaces and interfaces, which spans both "bio-inspired" polymers and high-performance materials. "On the high-performance side," Dr. Morgan said, "we're looking at how we can add nanomaterials or structural polymers at or near the surface to give products certain properties. Almost everything has a surface or interface that can be examined and altered, and we study ways polymers interact with surfaces to achieve specific types of performance." Such research has developed hydrogel materials, polymers that absorb many times their weight in water, which Dr. Morgan studied for Johnson and Johnson.

One study on "ultra-high molecular weight water-soluble polymers," another type inspired by polysaccharides, examined the slick substances that improve the maneuverability of fish. "This coating is made up of polysaccharides, which helps them to travel through the water at a faster rate," Dr. Morgan said. "These are drag-reducing, natural molecules." Such drag-reducing polymers extend the stream and strength of fire hoses by allowing them to use less energy. These polymers are also used in oil pipelines to help the pumping process.

"Polymers allow for shapes and colors that aren't achievable with metal," Dr. Morgan said, showing me pictures of a Volkswagon Beetle frame, one of her final projects at GE. While her background is in engineering thermoplastics, "plastics that can be used for structural applications," she currently collaborates with researchers in other scientific disciplines at USM. One example is the study of Alzheimer's disease with Dr. Vijay Rangachari, associate professor of biochemistry. By "synthesizing glycopolymers, which mimic polysaccharides," they can observe the behavior of "amyloid beta" molecules, the peptides responsible for the disease. Such methods, Dr. Morgan added, "enable researchers to possibly develop treatments or cures."

Her work with Dr. Shahid Karim, a professor of biology, is concerned with ticks. Ticks secrete protein-based structures referred to as "cones," which help them remain attached to hosts. Dr. Morgan's collaborative research "disrupts the way ticks attach to hosts by studying and genetically modifying the 'cone' used to attach, causing it to fall off." The researchers work at the molecular level, exploring the nanomechanical properties of the cones and reducing their mechanical strength. Research such as this displays that polymer research can have both


Electrostatic Force
TUNA & Conductive
Piezoresponse



Example of firehose effectiveness with and without polymer additives. Courtesy of Vincent Terrapon at MTFC Research Group.

universal and regional relevance and applications. On the high-performance side, Dr. Morgan works with the Army Corps of Engineers, developing lightweight, high-strength materials for protection and maneuverability in the field.

When asked what receiving this award meant to her, Dr. Morgan said, "I was so surprised and humbled because I was nominated by my students. Everything I work for is really for them." April Fogel, a current graduate student, said the qualities that make Dr. Morgan a "phenomenal mentor," are her "unwavering support, guidance, scientific expertise, diverse career experience, and structured approach to graduate student mentorship. These efforts are reflected in the success of her graduate students both during their studies and throughout their continued careers."

"Internship opportunities have aided her graduate students' decisions regarding career paths and research areas of interest," April said, adding that Dr. Morgan's "graduate students complete successful internships in academia, national laboratories, industry, and even international exchange. These internships have also aided in advancing research directives within the Morgan research group. For example, my Ph.D. research involves the determination of water organization and mobility within bio-inspired hydrogel architectures. In the summer of 2017, I completed a three-month long industrial internship at Johnson and Johnson Vision, where I gained invaluable experience with newly developed R&D techniques related to hydrogels. I was then able to bring back those techniques and directly implement these skills into my own research at USM."

Helping facilitate these internship and professional preparation opportunities is part of Dr. Morgan's approach and impact as a mentor. A central responsibility of hers is "to help students understand their own strengths and develop them and become independent scientists and engineers." As students advance in the program, collaboration becomes essential if they want to overcome their weaknesses. First-year graduate students take intensive coursework before they choose a mentor or start in the lab. Students are encouraged to work and study together, make strong relationships, and become team members because most have undergraduate degrees in various sciences, such as chemistry, chemical or mechanical engineering, and biology, and must learn polymers together. Once completed, students begin to perform research alongside their professors.

Students go on to work at companies such as Haliburton, GE Aviation, and DuPont, as well as in national labs. To prepare students for these fields and guide them toward specializations, part of Dr. Morgan's job is to get funding to pay students to work full-time in the lab as research associates. Funds are allocated to two areas, bio-inspired and biomedical, and high-performance materials. Students tell her in which funded area they are interested, and she helps them create and develop a project within that area so the students are directly involved in determining the nature of their research. They are made to understand and take into account what the potential opportunities are in each area, which allows them to make educated decisions about their futures.

Dr. Morgan helps provide various professional development opportunities to students. The National Science Foundation funds the National Research Traineeship for Graduate Students, which features Dr. Derek L. Patton as principal investigator (PI) and Dr. Morgan as co-PI. There is also a summer "boot camp," one week of professional development, including lessons from outside instructors. Such resources, Dr. Morgan said, "teach communication skills, project management, leadership training, and teamwork skills. All of my students go to conferences, so they generally present at the American Chemical Society (ACS), the Society of Plastics Engineers (SPE), the Materials Research Society, and other types of conferences." Dr. Morgan creates or helps identify internships in industry and national laboratories in which her students participate.

Dr. Morgan was not only nominated for this award by students, but by colleagues who recognize her impact on the research and professional future of graduate students. "Perhaps most indicative of Dr. Morgan's effectiveness as a mentor is found in the success of the students performing research under her direction," said Dr. Jeffery Wiggins, professor and director of the School of Polymer Science and Engineering. "Her students regularly receive national and international awards and fellowships, including National Research Council, National Science Foundation, Goldwater, National Aeronautics and Space Administration, ACS, Society for the Advancement of Material and Process Engineering, SPE and numerous internal USM awards. As a mentor, she consistently emphasizes development of science communication. This is exemplified by three of her graduate students qualifying as Three-Minute Thesis finalists at the USM competition. Two advanced to compete at the regional level, the most recent being Rahul Shankar, who competed at the Conference of Southern Graduate Schools Three-Minute Thesis Competition in Fayetteville, Arkansas, last spring."

Dr. Morgan's exceptional mentorship style was also recognized by the Conference of Southern Graduate Schools, which selected her as 2019 Outstanding Mentor. Consisting of 200 member institutions from 15 states across the Southeast, spanning Texas to Maryland, CSGS is an organization focused on contemporary issues in graduate education. She received the award at the organization's annual meeting in Knoxville, Tennessee, in February 2019. When asked what advice she might have for other aspiring mentors, or even those who have never given thought to mentoring, she said, "It's not about you, but the student. They are the future of the field, as well as your future—if the students excel, you excel. Being this person for them means showing support, but support is sometimes sharing criticism, having high standards. Achieving is a challenge, but awards and acknowledgements are good for them, the field, and society itself because it means work is being done and people are pushing each other, which leads to further advancements." Dr. Morgan's model for mentorship clearly contributes to advancements in polymer science, and by providing a foundation for the intellectual, professional, and emotional development of students, she advances the next generation of scientists.

by Chad Foret

For more information about the School of Polymer Science and Engineering, visit usm.edu/polymer.

Write Your Way Home: Poetry as Self-Conception and Community

Jessica Guzman, Graduate Assistant of the Year

Born and raised in Port Charlotte, Florida, Jessica Guzman is a poet and researcher whose work reflects growing up along the Gulf Coast and her own heritage. She received a bachelor's degree in English from the University of South Florida and a Master of Fine Arts (MFA) degree from West Virginia University. Jessica's award-winning poetry, international research, and generosity as an educator have earned her the distinction of the 2018 Graduate Assistant of the Year. What is perhaps most compelling about Jessica's work is how important the concept of place has been to the foundation and development of her creative and critical work.

Whether her projects explore the history and development of certain literatures or the relationship between writing and identity, Jessica focuses all of her efforts on poetry and "poetics," the study of the characteristics of written works, namely how they are constructed, influence an audience, and the nature of that influence. These topics are always at the center of her research, Jessica said, "whether it is writing creatively, or reading, analyzing, and criticizing."

Jessica has become increasingly aware of the "intersections" of her research. Her parents' personal histories and immigrant experiences influence her interest in Caribbean and immigrant poetry and literature. "Also British Romanticism," Jessica added, "for many reasons, but mostly how they wrote about and affected Caribbean literature through colonization." Both of Jessica's parents came to the U.S. from Cuba, but at different times and stages in life.

Her mother arrived as a teenager and attended an American high school, allowing her to engage with the culture more easily. Jessica's father came to the U.S. from the Mariel Harbor during the events of the "Mariel boatlift" in 1980. Those who immigrated during this event were known as "marielitos." When he arrived, her father was in his early 30s, so his experience and adjustment differed from her mother's. He had come of age in Cuba and "maintained his accent and habits," Jessica said. "He had his own way of walking through the world." The shared, yet distinct, histories and adaptations of her parents have greatly influenced Jessica's research and writing, providing a complex and culturally rich artistic and academic perspective.

"I never thought of myself as 'from' Florida while living there... The details about that place became more important, and their role in my identity and how I understand things became clearer."

"I'm most interested in place and language," Jessica said, explaining the characteristics of poetry she is most drawn to when writing and reading. The term "place" is used in poetics and creative writing to describe how texts and writing styles are informed by the history, topography, and culture of a location or area. "Place makes up a lot of who we are. I never thought of myself as 'from' Florida while living there. I felt ambivalent about it until I left for college." The greater the emotional and literal distance, the more home began to define itself for Jessica and manifest in her writing. "The details about that place became more important, and their role in my identity and how I understand things became clearer."

While reflecting on place through poetry helped inform and develop Jessica's sense of self, this focus also enables her to consider the ways place helps shape other people. "My father was a tile setter and pool cleaner," Jessica said. Even though these professions exist elsewhere, they are especially common in Florida due to the weather and culture. Jessica would sometimes accompany her father to work, and the small details of those days remain in her memory and end up in her work. In one poem, "The First Friday," dedicated to Mark Doty, the speaker describes the "silvery hoop" of her father's pool skimmer "sailing" chlorine tablets, the deep "gulps" of filters, and floating dragonflies. Poetry allows Jessica to reflect on such moments and to deepen her understanding of the circumstances that shape people, as well as the people that shaped her. "The way Florida attracts tourists and the population booms in winter," Jessica said, using the term "snowbirds" to describe the seasonal visitors, "these are things I didn't consciously think about. These little details become special. They become you."

Writing about familiar things can be challenging, partly due to doubt that others will be interested in

Cuban refugees immigrate to the U.S. during the events of the Mariel Boatlift, 1980. Copyright - Credit: Historical Museum of Southern Florida, 1981-099-89.

the details of our lives. The poet Derek Walcott, who passed away in 2017, gave Jessica the confidence to write about the place and people that she knows best. "There are some people who give you permission to do things. The way he writes and talks about place," in Walcott's case, the island country of St. Lucia, "showed me that my writing can be valued by others, even strangers. He inhabits St. Lucia in his work. It's hard to convince yourself that anyone will care," Jessica said, but experiencing his life and St. Lucia through his writing assured her that she could find an audience.

Because of her Cuban heritage and the different adaptations of her parents to American culture, Jessica's relationship to language is almost as important to her poetry as place. "Both of my parents' first language was not English," Jessica said. "It was a bilingual household. I primarily spoke English, even though the family spoke mostly Spanish." Spanish was not encouraged in Jessica's public school, which was partly why she never spoke it and why much of her understanding of it developed through listening to others. "I didn't acquire Spanish in the same way my older siblings and cousins did," Jessica continued, discussing how she learned through "mishearing," and how mistakes inform her relationship with language. In one poem, her mother says "acuerdos" (arrangements), but Jessica hears "recuerdo" (remember). "I'm really interested in how those mistakes happen and what that means and how that affects you." In a way, as a poet and person, Jessica lives between languages, observing the idiosyncrasies of this liminal space.

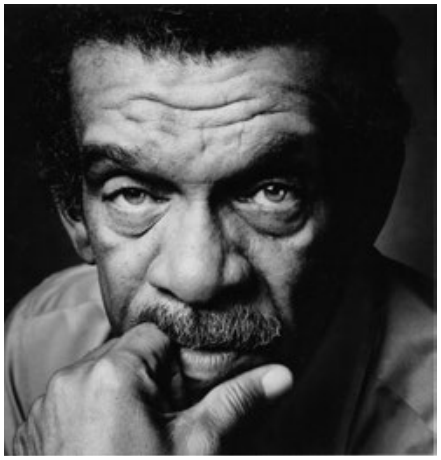
Jessica's writing journey started at a young age but did not begin with poetry. Her first forays into writing were "stories in third grade and then, a year or so later, song lyrics. Not whole songs," she emphasized, laughing, "just lyrics. They were really, really bad!" Jessica admitted she had not encountered or understood what poetry was until near the end of middle school, when she came across the poem "Oranges" by Gary Soto in a textbook. She recalled her "aha moment," the final image of the poem that taught her the possibilities of carefully selected words:

> I peeled my orange
> That was so bright against
> The gray of December
> That, from some distance,
> Someone might have thought
> I was making a fire in my hands. (51-56)

Struck by the transformation, she felt the potential of a written image to do "work," influence emotion and affect real change. "Something about it made me think, 'I know this. I have felt this, and I want to do this, too.' So I started writing poems—really bad poems." Writing that suddenly transforms its content and readers is sort of the bread and butter of poetry, as many authors can recall their first "encounter" with a text that changed or strengthened their self-perception and understanding of the world.

The "bad" poetry Jessica describes is also a normal part of developing as a writer. She has won awards and been published in various journals for her work because she has never stopped trying to improve, but certain individuals have been key to her self-assurance. Jim Buley, Jessica's 12th grade English teacher, "removed the stigma of pursuing English." He made a future in the field seem possible and fun. "If it's what you care about," Jessica said, paraphrasing her teacher, "it's what you should do." He would read whatever poems she brought to him and entertained her aspirations. He was one of her earliest supporters at a crucial time.

Jessica's undergraduate instructor Katie Riegel, a poet as well as fiction writer, was one of the first to



Poet Derek Walcott (1930-2017)
Photograph by Nigel Parry, courtesy of Faber & Faber

Jessica helps students with their recommendation reports in a technical writing class.

make Jessica feel like she could pursue poetry and that it was not ridiculous to do so. Katie showed the value in creative writing and made Jessica feel talented. "What I remember most about Jessica was how eager she was to learn: she opened herself to poetry," Katie said. "Like so many talented young poets, she had no idea how good she was already as an undergraduate; like all poets who succeed and grow, she read and wrote and went to readings and workshops as often as possible. I am not at all surprised by the publications and praise her work continues to get, both on the page and in the classroom. I'm honored to have been part of her poetic journey."

Support from professors continued into Jessica's graduate education. Under the supervision of professors Angela Ball and Adam Clay, the workshop environment at USM has provided Jessica with invaluable opportunities for critique and collaboration. Angela Ball has been Jessica's strongest mentor at USM and is a model poet and professor. "I don't think I ever told her this before, but Angela is the reason I chose to study here." When considering graduate schools, prospective students tend to research specific professors, as they spend most of their specialized coursework and research with select individuals. "Faculty was the deciding factor in what schools I looked into, and I already loved Angela's poems. That sealed it."

"She shines in all areas of endeavor: as a responsive and brilliant student in seminars, as a stunning poet, and as a genius T.A.," Dr. Ball said, eager to share her impression of Jessica. "Just in the past few months, [she] has accumulated multiple national honors for her work. She received the *American Literary Review*'s Poetry Award and *Harpur Palate*'s Milton Kessler Memorial Prize for Poetry. She presented a scholarly essay on Nobel laureate Derek Walcott at the South Atlantic Modern Language Association Annual Conference, and moderated a panel on Women, Femininity, and Embodiment in Caribbean Literature at the South Atlantic Modern Language Association Conference, a major meeting for literary scholars all over the region."

She is a joy in poetry workshop—always putting the poetry first, and her strong intelligence has made her a star in academic classes, leading to an invitation to deliver a paper at an important Canadian Romanticism conference." Adam Clay, editor of *Mississippi Review* and poetry instructor, echoed Dr. Ball's comments. "In the classroom, she brings a crucial perspective to the texts being discussed and contributes in exciting and insightful ways. She has a uniquely empathetic approach to critiquing her peers' work and offers suggestions very much in line with their creative intentions. When Jessica speaks up in class, her peers listen. She's a joy to have in class and brings a unique perspective to all topics of discussion. I learn something in each class meeting from Jessica's keen observations and critical insights."

Clay goes on to say, "In terms of service, Jessica has been active as president of the English Graduate Organization. She's helped organize numerous events, including fundraisers and research symposia. Jessica understands that the academic community does not stop at just teaching and scholarship—she places great value on service and has been a vibrant part of our department's community." Adam has also observed and admired the effort Jessica puts into her teaching assignments. "She has taught a wide range of courses during her time at USM, including technical writing, world literature, and composition. She has also served as assistant to the director of composition, which suggests a deep respect for the curriculum connected to these general education classes . . . I can't think of a time in which I've walked by her office and I haven't seen her meeting one-on-one with a student to discuss their work."

As an instructor, Jessica prioritizes intellectual development. "Learning is more important than being a perfect student, not to say being a good student doesn't contribute to learning," Jessica said. "The student population at USM is unique. The college has many students who work full-time, often to support themselves or their families, so it's important to primarily facilitate learning, to understand students' situations and respond/react generously and appropriately." While "generosity" is central to Jessica's teaching philosophy, her curiosity is just as essential, providing a model for active self-enrichment by sharing in her students' research. "Teaching is the perfect field if you want to help others and yourself continue learning," she said. When Jessica does research for lesson plans, she reinforces previous knowledge or learns entirely new things. Her awareness of "even something as foundational as action verbs" improves with exposure. This is especially useful for writing, where awareness of the function of small units of language is essential to poetic character and depth. She hopes to continue her career and development in education after graduation and to begin publishing books as well—"before I don't like the poems anymore," she interjected. Judging from her success and feedback so far, she will not have long to wait.

by Chad Foret

For more information about the English program and creative writing, visit usm.edu/english.

"It's important for people to know the quantity and variety of work done and still needed in the field of suicidology to truly understand and treat others."

Sarah Butterworth

Discussing Suicide: Prevention Through Education

Dr. Michael Anestis and Sarah Butterworth, Researchers in Clinical Psychology

In the Clinical Psychology program at USM, professors and graduate students have a wide array of research interests, such as neurodevelopmental disorders in children and the effects of anxiety, trauma, and substance abuse on individuals. While these are only some of the program's research areas, perhaps the most difficult to discuss and obtain data for is suicidology, the study of suicide and suicide prevention. People often feel uncomfortable when asked to address or think about the causes and effects of suicide. Student researchers in the Suicide and Emotion Dysregulation Lab (SEDL), such as Sarah Butterworth, are constantly working to understand the circumstances and behaviors that contribute to suicidal crises or death by suicide. The mindfulness and sensitivity Sarah displays while explaining and pursuing her research is essential to navigating the social taboos surrounding discussions of suicide.

"Because suicide is a bit of a mystery to researchers as a field," Sarah said, "there are many subfields within suicidology. A big one is mechanisms, trying to understand the underlying factors that contribute to crises or death." Sarah addressed the several types of suicide research at USM and recently even wrote a collaborative paper on opioids and suicide. However, Sarah's main interest is suicide prevention overall, in military populations, and firearms and suicide.

"My reason for getting into this field, like many other people in psychology and suicidology, is personal." Sarah said she was comfortable discussing her experiences, and that it is important to do so. People's general reluctance to share speaks to one of the major obstructions to suicide prevention research. "This gets at the nature of the discussion about suicide, how people often find it difficult or refuse to share. I lost my cousin to suicide when he was 17. Your family is never the same after that."

Sarah also has a personal stake in her major research area. "I come from a military family. My dad was in the Navy, and as for my brothers, one is in the Army National Guard and the other is out. It's such a unique population where we train people to do specific things for a role, and then they are expected to return to their civilian life, where things have changed, but they have not. Complicated things come with that." While Sarah is passionate about suicide prevention in the military, much of her research examines associations between suicide and general gun ownership.

"Suicide is a huge public health problem in the U.S.," Sarah said. "I don't think people understand the magnitude of it. Suicide is the 10th leading cause of death, while homicide, which receives more media attention and is thought to be more prevalent, is the 17th leading cause of death." It is frustrating to Sarah and other researchers that suicide continues to affect so many Americans, especially considering its preventability. "Some people think suicide is inevitable, but that is not the case. 90% of individuals who attempt suicide and survive will not go on to die by suicide later. Out of 45,000 suicide deaths in U.S. in 2016, half were from firearms. Firearms are the most lethal means for suicide. If they are used in the attempt, the person is likely to die, so they don't get that chance to survive. The U.S. has such an interesting relationship with guns."

Discussions about gun ownership and safe practices in the U.S. can often be polarizing. "It's very important to gun owners to keep themselves and their families safe and to exercise their rights. Many people don't realize that having a gun in your home increases the risk for someone to die either accidentally or intentionally, so a lot of my research is trying to find out what the general knowledge is regarding firearms and suicide." Sarah was quick to point out that when she interviews gun owners for research, she emphasizes that the focus of the research is not to reduce gun ownership. One of her brothers in the Army National Guard is a police officer and gun owner. Their conversations are interesting and informative, and they share a lot of common ground. "We're not talking about taking guns away. In fact, gun owners are typically more knowledgeable about and focused on gun safety than others. They know about and prepare for situations, such as kids and accidental firing or shooting range safety, but suicide is not often at the forefront of their minds. A lot of gun owners don't think there is a relationship between gun owners and suicide."

Sarah understands why this is the case. "If you've never had something happen personally, why would you make this connection?" Since not everyone has "encountered" suicide in this way, Sarah maintains a focus on "means safety" to improve prevention practices and knowledge, trying to understand the circumstances that make people less willing to store guns safely. "Means safety refers to limitation of access and decrease in lethality of means for suicide," Sarah explained, "which means it isn't limited to firearms." She gave examples of "bridge barriers, such as on the Golden Gate bridge, developing and prescribing less dangerous medication, and detoxifying gas in home appliances." Sarah is still most interested in firearms because of their lethality, and studying them provides the most potential to save lives.

In fact, Sarah recently defended a thesis on means safety and firearms. "In that project, I focused on where people lived, what their political beliefs were, and if any of these factors might make them less open to storing firearms safely and removing them temporarily from the home. We don't know what we don't know," Sarah said. "Researchers are trying to understand circumstances that prevent or enable means safety. They need to understand these things to make use of them in practice."

USM's location has been essential to Sarah's research. "Where I am is highly relevant to the work that I do. Mississippi has a high rate of firearm ownership and one of the highest suicide by firearm rates in U.S." The college's proximity to Camp Shelby has also been significant. "Children, prisoners, and the military are protected groups that require special approval by IRBs (Institutional Review Boards) to make sure researchers are not harming human subjects. Projects involving these populations can be difficult to get off the ground," so having access to military populations ensures greater ease of approval processes.

Dr. Mike Anestis, psychology associate professor, advisor, and coordinator of the SEDL, "has received two grants from the Military Suicide Research Consortium (MSRC) funded through the Department of Defense. We are currently recruiting National Guard members to participate in our study. We are involved in other local work, such as developing partnerships with organizations in the community to raise awareness about suicide prevention and its relationship with firearms." Sarah's local responsibilities also include clinical placements at an inpatient psychiatric hospital and the Forrest County DA's office, as well as her own caseload at the USM Psychology Clinic.

Dr. Anestis and the Suicide and Emotion Dysregulaton Lab together at Shoemaker Square

Sarah has been studying human behavior and practicing empathy in research since she was an undergraduate student at Virginia Tech, where she participated in a lab focused on industrial organizational (IO) research at the Center for Applied Behavior Systems. Many projects were researched, each concerned with human behavior and endeavoring to promote kindness and pro-social behaviors, areas of inquiry tied in many ways to the study of suicide. Before pursuing an advanced degree, Sarah decided to work full-time at the Institute for Defense Analyses (IDA) for two years. At IDA, Sarah had the opportunity to work alongside people with years of military experience and PhDs in fields such as astrophysics. "My project leader was Dr. Deena Disraelly, an incredible researcher and human being. She was an officer in the Navy, had a PhD in engineering management, and received extensive funding for various projects. She was a role model because she was a successful researcher in a high position managing her own team. I knew I was interested in psychology, suicide prevention, and mental health in military populations, but IDA helped me develop those interests." These experiences led Sarah to the SEDL here at USM, where she is in her third year.

While those years in research helped refine her interests and expertise, Sarah recognized the pivotal role a specialized mentor plays in professional development. "In these programs, it's so important to have a good match with your mentor and research opportunities. I have had an awesome research mentor at every stage of my development. In undergrad, that was Shane McCarty." A novice researcher at the time, watching him grow ideas into projects was crucial to her professional maturation and ambition. Even as an undergraduate, Sarah distinguished herself and made a lasting impression on her mentors. "I have observed her passion for prevention science, remarkable character, and evolving research skills," Dr. McCarty said. "She communicated with social workers and school administrators, conducted workshops with high school students, and trained new undergraduate research assistants to deliver research-based workshops. She is passionate, competent, and committed to conducting the research necessary to solve one of the most important societal problems of our times—suicide."

Sarah continues to stand out as a researcher. Dr. Anestis has acknowledged her value to the SEDL, claiming she "has managed to combine a passion for military and firearm suicide prevention and a thoughtful and programmatic approach to research in her time at USM. As a result, she has published a remarkable amount of high-impact science, presented this work at national conferences, and positioned herself to be a leader in this field early in her career. She manages the rare combination of being a fun person to have around and a sharp thinker who helps shape the ideas of her colleagues."

"Suicide is difficult to discuss because it is a taboo subject, which means the 10th leading cause of death in the U.S. is not talked about, and that is a serious problem."

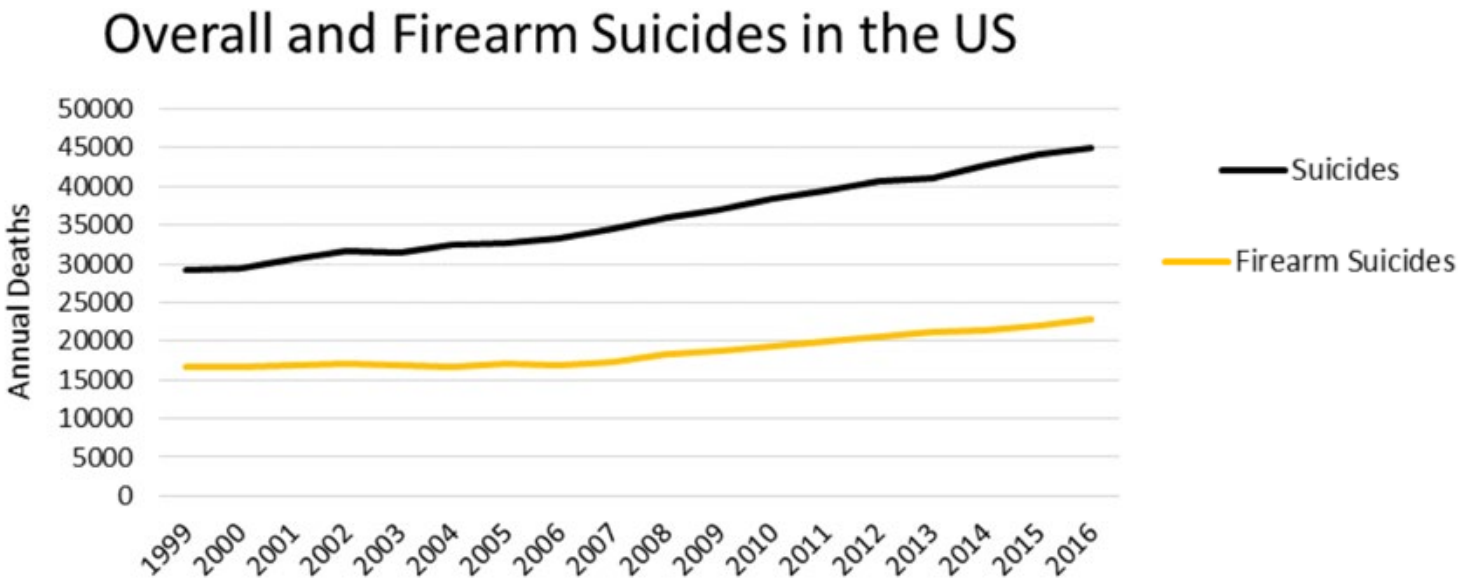
The quality of her research environment and instruction contribute to Sarah's success. "Mike [Anestis] has such a successful, established research program here. He's productive, present in the world, asking questions, and getting samples and grants, which helps students receive funding themselves. He meets students where they are and eases them into the research process instead of giving them more than they can handle. As they gain skills, they get more independence. He's aware of and sensitive to the developmental process." Sarah also values his example outside of academia. "He is a great person, which is important because graduate school is hard, and he and his wife, also a faculty member in clinical psychology, show what good work-life balance looks like. He models how to be a successful researcher but also have a full life and kids."

This academic environment allows Sarah to pursue her projects and collaborate with other students, departments, and even universities. She has worked with Dr. Rich Mohn, a statistics professor, and jointly developed a paper about opioids and suicide with students from the University of Toledo in Ohio. "Mike is very supportive, and if I wanted to start researching something like self-harm, he would find avenues and individuals to help me develop and publish on these topics." Sarah has her interests, but she is free to explore the many areas of possible study.

"There are many theoretical underpinnings to suicidology. It's important for people to know the quantity and variety of work done and still needed in the field to truly understand and treat others." Considering other research areas helps form a more complete picture of the intricacies of suicide research and the obstacles the subject's complexity can create for researchers. One such research area for Sarah is "capability" for suicide. "Inherently fear-provoking," suicide should go against a person's drive to stay alive, so when individuals display a resistance to this fear, researchers study their "ability" to die by suicide.

Capability for suicide was first suggested in the "interpersonal theory" of Thomas Joiner, the mentor of Dr. Anestis. "The most recent theory is Three Step Theory, posited by E. David Klonsky and Alexis M. May," which explores three types of capability for suicide, "acquired, practical, and dispositional." "Acquired" is experiences that increase your capability. Such examples are "being exposed to painful or provocative events, such as combat or any incidents that make you less afraid of death and injury." "Dispositional" denotes genetic or inheritable traits. Although humans possess an inherent fear of dying, some may be born with a resistance to this fear. Sarah is most interested in "practical capability, because these are the logistical factors that make it easier to die by suicide, and these factors can be addressed whether or not we know someone is suicidal."

While specialists are constantly working to understand and prevent suicide, you do not have to be a professional researcher to make a difference. "Don't be afraid to talk about suicide," Sarah said. "Research shows that asking someone if they are thinking about suicide or hurting themselves is not going to make them want to do it, but can actually be refreshing. Suicide is difficult to discuss because it is



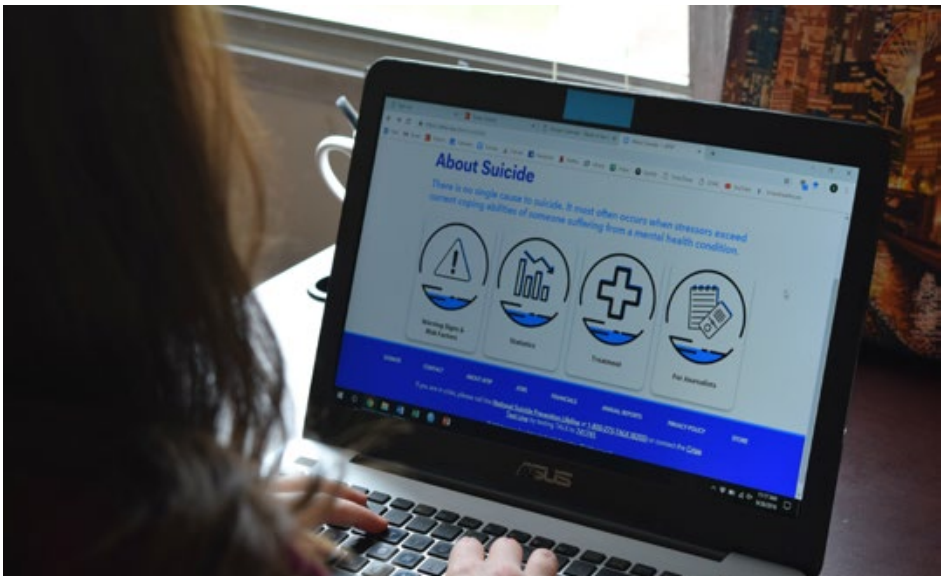
a taboo subject, which means the 10th leading cause of death in the U.S. is not talked about, and that is a serious problem. There have been recent discussions by celebrities," Sarah added, but people are not nearly vocal enough about the prevalence and risks.

For people who are concerned about others but do not know how to approach them or phrase concerns, the National Suicide Prevention Lifeline is a great resource, namely the "Help Someone Else" tab on the website. Sarah also recommended the American Foundation for Suicide Prevention and the American Association of Suicidology. "I go to their conference every year," Sarah said. "They have resources for talking about suicide and reporting on it. We also have our in-house clinic (the USM Psychology Clinic), which provides child and adult services. Students-in-training are supervised by licensed psychologists, and we use evidence-based treatments."

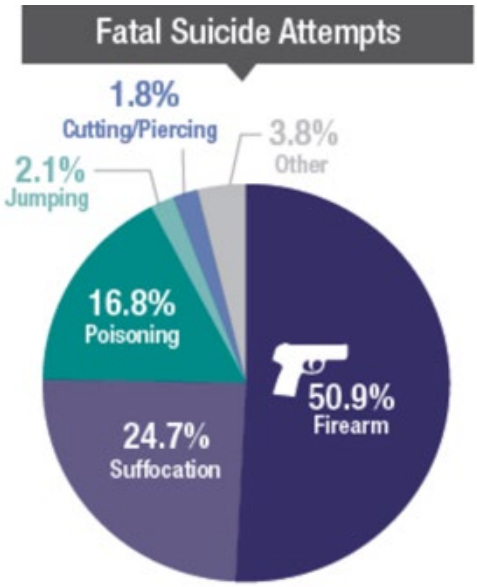
Other ways people can help is by simply taking steps to prevent risks. "Understand that there is a relationship between guns and suicide. Owning a gun does not mean that you or someone else is going to become suicidal, but if that thought is present in you or another, just having access to the most lethal means for suicide is a risk. You don't necessarily know if someone is thinking about it. Often, suicide prevention research focuses on people who attend therapy and go to emergency rooms, but many people are not going to do that. It is important to 'disarm unknown risk,' decrease the risk for people who might not seek treatment or help, but who have suicidal ideation."

Sarah goes on to say, "By talking about suicide, it can feel like you are 'making it real' for someone thinking about suicide, but it is always there regardless. People have this idea of a suicidal individual whose mind is made up, of suicide as being inevitable, but many people think about it and then never think about it again, and some days it's worse for those who do think about it. Know strategies to store guns more safely. Use cable and trigger locks, a gun safe, store ammunition separately from guns, and keep guns unloaded. It varies state-to-state in terms of what is allowed, but some people may determine that it is unsafe for them to have access to their gun in times of crisis. Whether they are planning to drink or having negative thoughts, they can ask someone else to keep their weapons temporarily. This removal from the home is similar to someone making the decision to ask for a designated driver." Spreading awareness and knowledge about suicide risk and prevention is not the sole responsibility of researchers. By taking the initiative to help influence perceptions and discussions of suicide, individuals have the power to save lives.

by Chad Foret



Sarah visits sites for information about suicide and prevention practices.



For more information about the Clinical Psychology program and SEDL, visit usm.edu/clinical-psychology.

Prepared to Protect: Pioneering Sport Event Safety

The USM College of Business and Economic Development, in collaboration with the National Center for Spectator Sports Safety and Security (NCS^4), provides a specialization for aspiring MBAs unavailable anywhere else in the country. The Sport Event Security Management emphasis prepares students for positions as directors and officers in the sport safety and security industry, teaching them responsible and advanced practices for securing athletic and concert venues, as well as how to contribute to the advancement of security technologies. MBA candidate, graduate assistant, and developing researcher Jacob Neal hopes to help improve venue vulnerabilities, risk prevention practices, and technological adaptability during his time with NCS^4 and beyond.

After receiving his undergraduate degree in business management from The University of Mississippi, Jacob briefly pursued banking and even considered a future in the Marine Corps. With a law enforcement background as the son of a police chief, he felt guided to potential careers that prioritized public safety. Once he found out about the NCS4 program, Jacob spoke with Dr. Lou Marciani, the National Director of NCS^4, and interviewed for a position performing outreach to affiliated organizations, universities, and companies, as well as prospective collaborators. "We do this to prepare for our security summits," Jacob said. Considering the variety of small- and large-scale venues for which NCS^4 facilitates and contributes research, it is helpful to understand the scope of its functions and influence.

"We spend time researching and developing best practices for security anywhere large crowds might gather," ranging from high school stadiums to general entertainment venues. "In the past decade, we have seen a significant increase in domestic and international terrorism, such as the Ariana Grande concert shooting in Manchester and the Pulse night club shooting in Orlando. People target those events partly because it is difficult to get people out in a hurry."

"The more the public's technologies improve, the more ours need to improve to keep up and respond. The goal of the organization is to make public events, going out with family and friends, as safe as possible."

Jacob also spoke about the prevalence of "crowd crush" in such situations. "People don't think about what can happen even after the initial threat is gone. In Las Vegas last year, for example, the incident resulted in chaos, people running over and into each other." This disorder leads to injuries and fatalities, but also prevents the security officials and medical professionals from being able to provide assistance or perform their duties. "It's not just about getting people out of that situation, but finding a way to get help into the area while people are flooding gates." In Las Vegas, first responders wanted to help, but there was a lack of coordination. This led to the victims being randomly transported to hospitals and unsupervised assistance, which complicates the situation and makes control and outlook more unlikely or problematic for security professionals and prevents optimal outcomes. Such are reasons why NCS^4 is concerned with educating both event attendees and those responsible for their security.

NCS^4 utilizes the National Sport Security Laboratory (NSSL), a space on the USM Hattiesburg campus where technology can be tested, including that of large companies, such as Dell and Microsoft. This also serves as an excellent training environment. Recently, congressional aides visited and sponsors provided a 3D mapping of M.M. Roberts stadium that can be navigated using virtual reality. Companies bring a range of devices they hope to implement, including cameras, speakers, software, and robots.

Jacob added that such facilities "allow groups to earn certifications and accreditations for when they present their technologies to interested parties. We can actually test these devices on a small scale at M.M. Roberts and Pete Taylor Park to examine how they might function and fare in a larger environment." The lab is currently being integrated into M.M. Roberts so groups can communicate back and forth. In effect, the venues on campus also serve as a sort of laboratory. Such facilities allow for various summits, such as the drone summit held last year.

"Drones are a new way to provide resources to stadium security officials. They can easily fly over venues and campuses," Jacob said, stressing the

9/11 memorial on premises features spandrel from twin towers

Jacob, giving a tour of the NCS[4] facilities and laboratory

importance of keeping their development current. "We're always testing new materials because the more the public's technologies improve, the more ours need to improve to be able to keep up and respond. The goal of the organization is to make public events, going out with family and friends, as safe as possible. We want to be able to notice and mitigate risks. If there is an issue, we need to be able to get people out as safely as possible. One challenge is ensuring public safety while maintaining their experience and comfort, but we work for people to enjoy their activities without worrying about threats."

NCS[4] hosts four annual security summits for marathons, interscholastic sports, intercollegiate sports, and professional sports and commercial events. The purpose of these summits is to develop and circulate useful information for NCS[4] and affiliated groups. "We facilitate keynote speakers, technology showcases, and panels for questions and small-group discussions to share ideas," Jacob said, "which allows us to create and update best practices guides. There is no better place to gather industry leaders and professionals and pick each other's brains. People are happy to contribute and gain new knowledge, because there is always an opportunity and need to improve weaknesses in industry." The summits take place in December, January, February, and April, and the organization reaches out to professionals not just for their own benefit, but also for others to learn from their personal insights.

"Many feel like they don't have the voice or protection afforded others. They have the right to enjoy a game or concert peacefully. Security is a necessity, and I want to be the person who makes that possible."

"We are at the forefront of sports safety and security research. The Sport Event Security Management emphasis," implemented by USM in 2015, "is still the only program of its kind. We are associated with Texas A&M's engineering program (TEEX), one of seven members of the U.S. National Domestic Preparedness Consortium. Our funding funnels through this group, and while there are such research institutes all over the nation testing for issues such as chemical weapons and urban warfare, ours in the only centered on sports and entertainment."

NCS[4] has also created security courses available to applicants "from Alaska to South Florida," as well as international groups such as INTERPOL.

"We offer four FEMA-funded courses, two of our own and two jointly with TEEX. Security and stadium officials from across the nation attend at no charge. We build a best practices guide from what we have learned from summits and national conferences and distribute this information to others to implement at their events." These courses cover sport event risk management, incident management, and evacuation training. Their collaboration with INTERPOL reflects an effort to expand tactics developed domestically to international organizations. NCS[4] welcomes individuals from Qatar, Taiwan, China, France, and several other major countries. "These classes are designed more for what *they* see," Jacob emphasized, "as they offer us what they feel are their biggest issues, such as when they host the World Cup, as well as general problems they might experience that we haven't encountered in our country."

People know they can turn to NCS[4] for quality information, learning, and testing, whether the concern is for small- or large-scale venues. "There are some distinctions between venues of different sizes, but recently the gap is being bridged. Local

NCS4 NATIONAL CENTER FOR SPECTATOR SPORTS SAFETY AND SECURITY SOUTHERN MISS

Research, Training and Operations Center at the NSSL

NCS4 and Interpol Risk Management Training Course

events experience the threats that once strictly occurred are larger venues." Jacob cited increased incidents at high schools in recent months, such as shootings at football games, baseball practices, and on a national level, the E-Sports shooting in Jacksonville. "The public and security mindset has changed from 'that will never happen here' to 'who knows what might happen?'" People are becoming more anxious and aware that this is not a strictly global problem anymore, but a hometown possibility, as well.

Many issues security officials experience at public events can be addressed through prevention practices. Jacob hopes to be at the forefront of this research area. "There are not a lot of ways to find out who is going to act and what is going to occur in an attack," Jacob said, "but it is even harder to stop someone once they start taking these actions. How can you stop someone that has already made it to a venue? I would like to see or perform research on non-lethal technologies that can be put to use in large crowds." The idea behind non-lethal and alternative suppression technologies is partly to reduce danger and to keep the public calmer, as the sight and use of traditional weaponry can make people uneasy and cause a panic. "There are useful current non-lethal methods, such as beanbags, hand-to-hand techniques, and smoke grenades," but for Jacob, these are not applicable to a wide enough range of scenarios. "You can't just toss a smoke grenade into a crowd, so there is still a lot of work to be done researching safer methods that don't cause chaos or alert others unnecessarily. I would like to see that type of technology be further developed and scalable to multiple venues. We need more adaptable devices and approaches."

Jacob believes that a solution exists for every security issue, and while researchers and officers can solve unique problems through research and collaboration, human intervention is essential to public safety. "There's no way to put a uniformed officer or security guard in a position to see every square inch of a venue at all times. It helps to have text lines and anonymous hotlines. This gives the public an opportunity to post details to a Twitter page for an official to look into. We need people to step up and speak up when they see something suspicious." However, there is also the issue of people misinterpreting behaviors or making false reports.

"To avoid misinterpretation, there needs to be a way to verify real threats. If a person mentions something, we should have the ability to put a camera on the section or situation to check the truth of their claims. There would be consequences to knowingly inaccurate claims. If you are going to say something, understand we may come back to verify information. A big part of human intervention is education up front, such as putting things on prompters before and during the game so people know how to contact officials and the nature of the services provided."

Growing up around law enforcement, Jacob developed a natural affinity for defending people. "Many feel like they don't have the voice or protection afforded others. They have the right to enjoy a game or concert peacefully. Security is a necessity, and I want to be the person who makes that possible." Because the goal of NCS4 is event safety through risk-prevention and improvement of venue vulnerabilities, Jacob is a natural fit within the organization, and his insights and need to serve will surely turn him into a professional asset.

by Chad Foret

For more information about NCS4 and the Sport Event Security Management emphasis, visit ncs4.com.

Faculty Spotlight: Nursing Research and Simulated Learning

The College of Nursing, now the College of Nursing and Health Professions, has always been a competitive and appealing destination for graduate and undergraduate students pursuing nursing disciplines, and thanks to the construction of Asbury Hall and its state-of-the-art learning environments, USM continues to attract promising students. Another draw for prospective students is the college's quality instructors and experienced researchers. Three professors, in particular, exemplify nursing research at its best—Drs. Bonnie Harbaugh, Nina McLain, and Michong Rayborn. Their recent and ongoing collaborations at USM with other universities and even abroad attract external sponsors and contributes to the advancement of nursing practices worldwide.

Dr. McLain has worked clinically as a nurse anesthetist in Mississippi for 27 years. She has worked in nurse anesthesia education for the last 13 years while continuing to practice and maintain her clinical skills through weekly practice. She received her Bachelor of Science degree at USM and a master's degree from Xavier University in New Orleans. Desiring greater intellectual challenges, she pursued a PhD from Virginia Commonwealth University, where she first developed a passion for research. She brought that passion back to USM when she returned in 2017 to mentor, teach, and continue her research.

Dr. McLain continues to practice in a clinical setting, and her professional experience often informs research topics. Noting respiratory complications in comatose and intubated patients on ventilators, Dr. McLain was inspired to design an innovative device to prevent ventilator-acquired pneumonia. "Because they cannot swallow, pooling of secretions leads to mini-aspirations that have been reported to cause pneumonia," Dr. McLain said. Once she noticed this issue in clinical practice, she decided to design a device to remove these secretions herself.

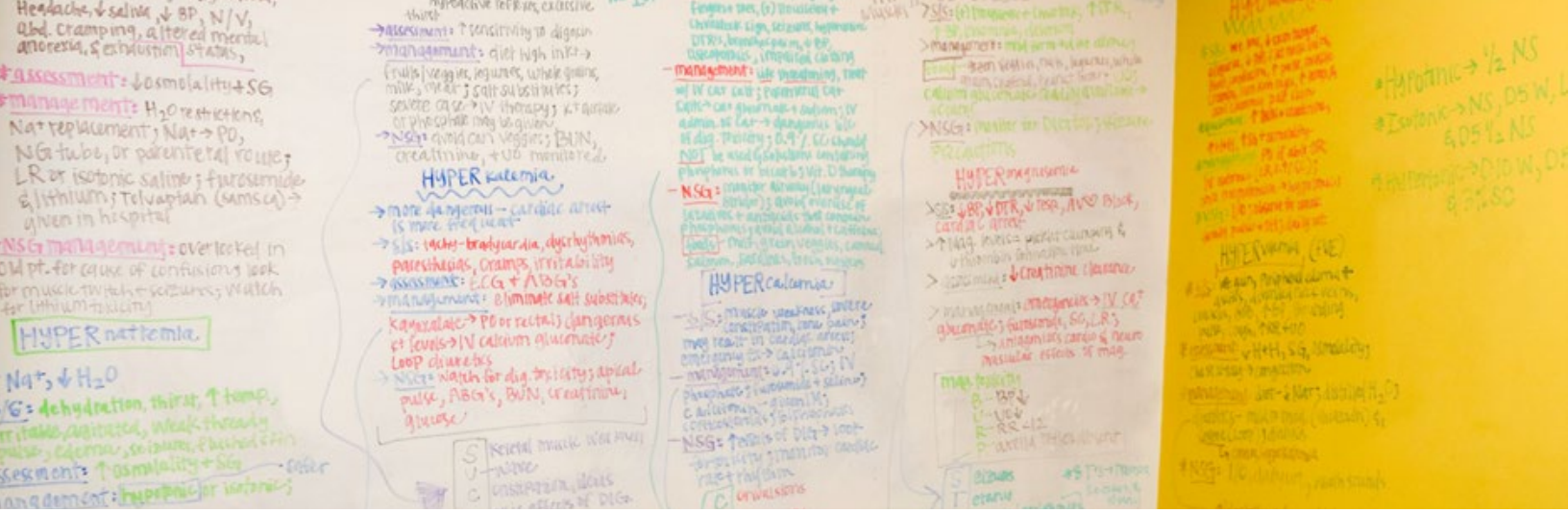
"I sought out a facial plastic surgeon who was interested in collaborating. We began a research and design company, Oral Suction Device, LLC that developed the medical device. Our product is in the testing phase now, and we received our patent in August 2018." Her company has done additional work in the area of wound healing. "We have been able to speed up wound closure and reduce scarring by developing a gel-based compound applied at the time of surgery. It is in the late patent stages right now. We will keep developing this product and hopefully be able to build a company around it or sell it to the pharmaceutical industry." USM's Office of Technology Development assisted Dr. McLain in establishing the LLC.

Dr. McLain is involved in various other collaborative and prospective research studies, such as her partnership with the biotechnology group, SIWA Therapeutics Corporation, specializing in antibodies that bind to and remove senescent cells from human tissue to improve health and lifespan. A project with Dr. Fengwei Bai, associate professor in the School of Biological, Environmental, and Earth Sciences, focuses on early detection of renal cell carcinoma, a cancer typically detected too late for treatment. Dr. McLain also collaborates with Dr. Michong Rayborn. Highly regarded as an outstanding teacher, Dr. Rayborn's research focuses on international education and updated anesthesia guidelines and practices.

Among her most impactful current projects is an ongoing collaboration with Dr. Gyeseon Jeong, associate professor at Chosum College of Nursing in South Korea. Born after the Korean War, Dr. Michong Rayborn was constantly exposed to the various health problems and economic issues affecting South Korea. Those experiences and the educational opportunities she received since coming to the U.S. in 1981 to work as a registered nurse (RN) and certified registered nurse anesthetist (CRNA) inspired her to help improve South Korea's CRNA training programs and certifications to enable better patient care and health outcomes for South Korean people. While volunteering with the International Federation of Nurse Anesthetists (IFNA), Dr. Rayborn noticed and wanted to understand why education standards and practices for CRNAs in South Korea were so different from what she had experienced in the U.S.

Connecting with the Korean Association of Nurse Anesthetists (KANA), she studied and published articles about the cost-effectiveness of CRNA education implementation in South Korea, then studied the cultural values that might affect the national perspective toward education reform. She found the values that prevented the development of CRNA programs were regional religions and patterns of group-thinking that differed from Western individualism.

She also learned about the inception of anesthesia practices in South Korea. When the war created a demand, nurses from military hospitals were trained to perform anesthesia. Sister Margaret, a nun



Students and professors make use of erasable white board walls in Asbury Hall's debriefing rooms.

and American CRNA, visited Korea to help develop training protocols. At the time, there was no system to monitoring training or oversight for anesthetists, so the programs Sister Margaret introduced were implemented nationally and resulted in over a dozen schools. Since then, South Korea's CRNA programs have become almost nonexistent, with only a single master's degree program remaining. To meet the need for anesthesia providers, hospitals often resort to training RNs. As a result, the contribution of RNs in anesthesia is significant but not properly recognized.

Dr. Rayborn has worked with lawmakers to implement a scope of practice guidelines that emulate the standards and effectiveness of certified anesthetists in other countries such as the U.S. The implementation of these standards is now possible because incomes are higher and advanced degree programs are more widely available in South Korea. She was appointed senior advisor and consultant and collaborated with the president of the Korean Nurse's Association to help guide aspiring CRNAs and raise public awareness of the need for specialized anesthesia training. "Anesthesia is a high-risk practice," Dr. Rayborn said. "You have to have a good education to ensure safe administration. CRNAs have to be treated as distinct from other nurses because they perform a specialized function. Why wouldn't I communicate with lawmakers and healthcare providers about the necessity for better certification systems?"

She continues her correspondence to improve her own understanding and ability to help South Korea, focusing on ethical education and updated applications, which she is personally passionate about and implements in both her teaching and clinical practice. A greater focus on ethics and protocol improves public safety and protects the profession by keeping its standards high. She constantly strives to remain current in clinical practice and teaches her students to do the same. "If you don't know what the best current practices are," Dr. Rayborn said, "how can patients trust you, and how can you be trusted with them? They are at their most vulnerable, so you must educate yourself for the benefit of others."

To provide such opportunities for education to students, she advocates for frequent and varied use of simulations: "Students need to know how to put in epidurals and catheters. Simulations prepare students by exposing fears and unpreparedness. You have to make difficult decisions very quickly." She stressed the importance of working to bridge gaps between clinical practice and academic study and labs. A more comprehensive approach to nursing education and practice helps preventative medicine. Nursing is always changing, and research can always be more than theoretical. "We must always ask ourselves, 'What problems are we facing? Can we improve this and how?' For example, the nation is experiencing a narcotic crisis. CRNAs are in contact with many of these patients. They can reduce dependence through nerve blocks and injections and steroids and apply multimodal approaches to pain control."

"In controlled environments, nurses can work without consequences and take over coding patients. Not every hospital floor has the same problems, [but] someone can practice with a customizable 'patient' any day at Asbury."

She loves to mentor and collaborate because members of a group can improve each other's knowledge. She believes researchers should consider others and themselves as resources. Her doctoral nursing students, such as Kristine Ho and Brittany Pierce, benefit from her expectation of high standards and her expertise, developing projects that allow for the development of more adaptive pain scales and therapies that reduce postoperative pain for recipients of spinal surgery. Dr. Rayborn's own mentor and colleague, Dr. Bonnie Harbaugh, has also mentored Dr. McLain and brought her own research interests to the Nursing school at USM.

Dr. Harbaugh received her PhD in child and family nursing research at the University of Minnesota but, like Dr. McLain, attended USM as an undergraduate. Her research as a doctoral candidate focused on uncertainty and stress in families of critically ill children. "There wasn't a lot of knowledge about how that affected parents," she said. "We knew they dealt with anxiety, but how much was related to uncertainty?" Dr. Harbaugh described "types" of uncertainty of interest to her research: "cognitive," which is what parents are thinking about and how they are processing these thoughts, and "family boundary ambiguity."

She compared this approach to understanding parents' experiences to wartime shifts in family structures. How does a family operate when a parent goes off to war, and how are relationships and responsibilities further complicated upon their return? "A similar phenomenon happens in an ICU. Parents go home, and the child is not in their bed. The child is not where the family functions but in an entirely different system or world with strange noises, people, equipment, and environments." The parents are in a problematic position, having to turn their child over to someone else for protection. Parents usually "cohabit" that space in the ICU. Often, only a single parent can be present at a time while the other works, causing further strain and feelings of separation.

"The parent present in that space is there intensely," Dr. Harbaugh added. She wanted to interrogate the specifics of their uncertainties, such as what they thought they could and could not do to help their child. "I developed groups of behaviors to observe in parents—vigilance, looking, and timing—and focused on details, such as how and how often parents watched their child, their child's breathing, catheters and monitors," and how they even interacted with and adjusted devices.

When she returned to Hattiesburg, she had to switch from pediatrics, but as she noticed the phenomenon existed in a general hospital setting as well, she was able to continue her research on uncertainty. She discovered that while parents of children in ICU will rate their children as "very sick" (8 or more out of 10), parents of children on regular floors give the same rating. Parents experience similar distress and urgency regardless of the magnitude of their child's situation and feel as though they are giving up their role. "Trust issues and fear override their normal affect."

Cadaver "Anastasia Kate" simulates organs, bones, and nerves.

Digitally interconnected classrooms enable video-conferencing.

Ednita Founta exhibits one of several practice dummies.

"Noel," the delivery room mannequin, and neonatal station

Students prepare for real scenarios with medical equipment, including various types of hospital beds, 28 in total.

Working in this environment, Dr. Harbaugh was approached by Dr. Debra Copeland about a possible mentorship and collaboration. Dr. Copeland transferred from the Gulf Park campus to Loyola University in New Orleans, and the pair began researching the transitions of mothers and fathers to parenthood. The W.K. Kellogg Foundation funded the research, interested in how men developed into fathers in urban New Orleans. They developed data that helped them understand how men acquired fathering skills for themselves and for their children, such as what they were taught, how they handled babies, how they supported women in the family, and how men without examples might adjust. Father figures were accounted for, such as uncles, preachers, and even police officers in some cases.

Addressing one of the many health disparities found in the Mississippi population, Dr. Harbaugh partners with Dr. Jerome Kolbo, coordinator for the Master of Social Work (MSW) program and professor in social work at USM, on a project evaluating child obesity in Mississippi. Dr. Harbaugh gathers epidemiological accounts of how child obesity is changing in the state. Right now, she has data from 2005, 2010, and 2017 on preschoolers and tracks and compares weights to determine significant trends.

Yet another enticement for prospective students and educators is Asbury Hall, the center of operations for USM's Nursing programs. The brand new building and fully equipped facility makes state-of-the art nursing education the expectation at USM. Varied environments and the use of simulations create "scenarios or stories," which emulate reality and enable students to practice diagnoses and perform nerve blocks, intubations, medicine administration, catheterization, overall situational judgement, and even allows them to call physicians and other nurses.

Students can practice with an anesthesia machine and even ultrasound, which helps employ nerve blocks with greater precision. Older equipment is made available, as well, to prepare students to utilize the dated technology they may encounter in some clinics or hospitals. Providing students these learning opportunities prepares them for countless scenarios that can complicate their work and confidence.

"When you're in a hospital," Dr. Harbaugh said, "other nurses will intervene when the situation calls for it—and they should, because the patient's safety is paramount. In controlled environments, however, nurses can work without the consequences and take over coding patients. Not every hospital floor has the same problems, either. For example, it is not common to come across a patient with severe burns in Hattiesburg, but someone can practice with a customizable 'patient' any day at Asbury, and do so in an ICU setting with the necessary equipment, orders, and medications."

A surgical suite is available for nurse anesthetists to practice putting a dummy to sleep and administer medicine. Professors can sit on the other side of a glass wall to manipulate and "speak" for dummies, communicating concerns a patient might have. For example, the dummy might say their back is itchy and needs to be examined, and when the student checks the area, the back is reddened. The instructors can change the vital signs, and "patients" can be on ventilators, tracheostomy tubes, and even wound care equipment. Real physicians, such as cardiovascular surgeons, are available during mock surgery sessions in the simulated operating room, and the surgical mannequin can cater to all situations, such as blood pressure spikes, patients waking up early, and even coding and death.

Asbury Hall has a home health room, as well, which simulates a space in a patient's own house and doubles as an area for students to practice interviews. A labor and delivery room includes a mannequin that can give birth normally, abnormally, and can have seizures post-delivery, and several other mannequins have customizable skin tones and specialized functions, such as making distinct heart and lung "sounds" that students must diagnose. There are even practitioner exam rooms for students to practice interactions with actors trained as "patients."

Debriefing rooms create office environments where students can learn from their colleagues working in simulations by watching them operate through a display and answering questions from teachers about possible alternative reactions to treatments. The walls in these rooms are made of erasable white boards, so faculty and students can create and develop scenarios or work out their own ideas and research. The classrooms are advanced, as well, featuring both flat and tiered designs and able to connect to each other, the Gulf Park campus, and other universities digitally, allowing for local, regional, and international video conferences, which are convenient and save money on travel fees for professors and visiting speakers. The facilities are available from 7a.m. to midnight, so cameras are used to help students and faculty feel safe, and the entire building can be locked down immediately if there is a threat on campus.

Nursing is a highly competitive field of study because graduates are immediately employable in the profession. The advantages of Asbury Hall, including space capacity that far exceeds Elizabeth Harkins Hall, the college's former home, promote maximum productivity and allow increased enrollment. Asbury Hall and the high-quality nursing faculty distinguish USM as among the most sought-after destinations for the study of nursing and promotion of the profession.

by Chad Foret

For more information about the College of Nursing and Health Professions, visit usm.edu/nursing-health-professions.

2018 Hall of Fame: Celebrating Student Achievement

The Graduate Student Hall of Fame recognizes the top students from each of USM's academic colleges. The students included in the Hall of Fame were selected by their respective deans based on their scholarly accomplishments and commitment to excellence. They represent the best and brightest students at USM.

Pratikshya Adhikari is a Ph.D. student in biological sciences with an emphasis on molecular biology. Her research focuses on identification of regulatory machinery of mast cell degranulation, a biological process known to cause allergy, inflammation and autoimmune diseases. She noted that unraveling molecular targets controlling mast cell degranulation could identify potential drug targets for the control of allergic inflammation.

Lacey A. Bagley is a Master of Science student in the Marriage and Family Therapy program in the School of Child and Family Sciences. Lacey's research assesses a variety of areas that impact relationships and families, including technology and romantic relationships, infertility, cohabitation, and autism spectrum disorders and family therapy. She is currently working on a peer-reviewed article, a clinical research project, and relationship education classes.

Nina Bellipanni is a Master of Professional Accountancy student in the School of Accountancy, representing the College of Business and Economic Development. The MPA program is coursework-based, requiring a minimum of 30 hours of graduate coursework, providing graduates with the courses and credit required to sit for the Certified Public Accountant exam. After completing her degree Nina plans to pursue the CPA designation.

Aaron Joshua Bennett is pursuing a Master of Arts in the Teaching of Spanish and Teaching English to Speakers of Other Languages (TESOL) in the Department of World Languages. Aaron is learning how to teach foreign or second languages through the Communicative Language Teaching method. He teaches two Spanish classes here at USM, where he applies these skills and techniques into his own classroom.

Katherine G. Burton is a Master of Business Administration student representing the College of Business and Economic Development. The MBA program requires her to complete extensive coursework in graduate-level accounting, economic development, management, and marketing. She works full-time at the Institute for Marine Mammal Studies in Gulfport as a marine mammal trainer, internship coordinator, and rescue and rehab specialist.

Julian Pernett Castilla is a Master of Music student (piano emphasis) in the School of Music, representing the College of Arts and Sciences. He is an improviser, composer, arranger, and plays with the Southern Miss Jazz Lab Band and the Southern Miss Jazztet. He has participated in diverse musical projects, such as L. A. C. Connection, Clube da Esquina, and Salseros del Sur.

Dr. Sheree Conley-Donaldson is currently a student in the Psychiatric Mental Health Nurse Practitioner Certificate Program. The purpose of her recent project was to determine if nurse practitioners are implementing evidence-based practice guidelines, including screening, brief intervention, and referral to treatment to mitigate risk of prescription opioid medication misuse and abuse among patients who request a prescription for these drugs.

Haley Dozier is a PhD student in computational science with emphasis in mathematics. Her research is concerned with partial differential equations, which are "used to describe many different types of phenomena, including sound, heat, and fluid dynamics," and often need numerical methods to be solved. Haley is working on the optimization of a type of numerical method called Krylov Subspace Spectral Method that solves time-dependent partial differential equations.

Jessica Guzman is a Ph.D. student in the Department of English. Jessica describes her creative projects as a collection of poems that balance place, identity, and grief, juxtaposing her Floridian upbringing with her late father's Cuban roots. The poems investigate the exchanges between the human-made and the natural world—what happens when the real alligator wanders onto the animatronic beach.

Lindsey Hardin is pursuing the Master of Social Work in the School of Social Work. Lindsey is researching third grade reading literacy and how students' classroom behavior may be correlated with reading performance. She is attempting to discover what specific behaviors, such as symptoms of depression, anxiety and aggression, are associated with the failure to meet Mississippi third grade reading literacy standards.

Dr. Tran Ngoc Bao King is a certified registered nurse anesthetist (CRNA) and Doctor of Nursing Practice (DNP) in nurse anesthesia. Her research project is an exploration of the prevalence, nature, and sources of workplace incivility affecting CRNAs and the development of in-service education for CRNAs on workplace incivility as an intervention strategy.

Rahul Shankar is aa Ph.D. student in the School of Polymer Science and Engineering. Fiber-reinforced thermoplastic materials have been known to provide cost-effective and lightweight replacements for traditional metal alloys in a wide range of applications. His research focuses on determining ways to ease their processing, either through structural modifications or melt-blending with unique additives, without compromising any other properties.

Brianna Werner is a Ph.D. student in counseling psychology. Brianna is interested in vocational psychology. Her research focuses on improving how we assess career decision-making in both practice and research. In particular, she is developing a measure of the Cognitive Information Processing theory in career decision-making.

Stephen Williams is a Doctor of Audiology student in the School of Speech and Hearing Sciences. Stephen is completing a year-long externship in audiology with the Gulf Coast Veterans Health Care System in Biloxi. In addition to serving the hearing and balance needs of veterans, Stephen's areas of research include hearing conservation among musicians and the efficacy of assessment tools for cochlear implant patients.

2018 Three-Minute Thesis: Competition for Professional Improvement

Over 30 students competed in preliminary rounds of the 2018 Three Minute Thesis competition (3MT) held November 7-8 in the Trent Lott Center. Judges selected the top master's and doctoral student in each category (life, environmental and health sciences; arts and humanities; physical sciences and mathematics; and social/educational sciences and business). Seven students advanced to the November 9 finals competition, where judges chose a grand champion and runner-up, while the audience selected the "people's choice" winner.

Ashleigh Bristol was selected grand champion for her presentation, "Polymers as Therapeutic Agents for Celiac Disease." Ashleigh, a doctoral student in polymer science and engineering mentored by Dr. Sarah Morgan, won the $1,000 prize for her efforts. She will compete in the regional Three-Minute Thesis competition, hosted by the Conference of Southern Graduate Schools during their annual meeting in Knoxville, Tennessee, February 14-16.

Ashleigh commented on some of the challenges presented by the competition. "The time limit was definitely a challenge! Three minutes is not very long when trying to discuss the importance of the work in addition to the details of your research. Also, having no props (such as a laser pointer) really emphasized the need to accurately express your research with the right language since you could not rely on pointing out specific diagrams in PowerPoint that would usually aid a presentation."

Preparation was key to performing well and being chosen as Grand Champion. "I typed out my speech in a word document, and in the weeks leading up to the competition, I slowly made edits to refine the talk. Once I felt the speech was complete, I memorized it and practiced it repeatedly. I practiced my hand movements for the speech in the mirror. I practiced in the lab, which was full of distractions. The day of the competition, I made sure to stand where I would be competing so I could be familiar with the room. That way, once it was my turn during the competition, it was just like going on autopilot!"

Ashleigh also shared the professional and personal benefits of this process. "Winning the 3MT competition provided validation for my communication skills. I always felt confident as a public speaker, but being selected as grand champion among many great presenters was truly an honor. Understanding how to communicate your research to all audiences is extremely important! In the future, I will need to communicate research to all sectors of the workplace, such as marketing, management, etc. I now understand how to relay complicated scientific topics to other scientists and lay audiences, and all levels in between."

Raymond Jones was selected as runner-up for his thesis, "Sitting to Death: Where Do We Stand?" and Arien Faucett was the People's Choice selection for her thesis "The Good, the Bad, and Their Coaches." Both doctoral students in kinesiology, Jones (mentored by Dr. Stephanie McCoy) specializes in exercise physiology, and Faucett (mentored by Dr. Melissa Thompson) specializes in sport pedagogy.

Aside from providing opportunities to win significant prizes, the purpose of the competition is to help students improve communication skills. The only visual support allowed in the competition is a single PowerPoint slide. The competitors had three minutes to explain their research projects comprehensively. These challenges required them to practice their delivery and articulation extensively and taught them how to isolate significant information and summarize arguments. The competition was judged by members of the community and university, and prizes were funded by Provost Steven Moser and Vice President for Research Gordon Cannon.

by Chad Foret

Johnson Oguntuase presents his research to a panel of judges.

Grand Champion Ashleigh Bristol during her presentation

Alumni Spotlight: On the Outcomes of Graduate Education

Kate Stepaniuc, PhD, Mass Communication

What is your current position, and what are your responsibilities?
Currently, I have an instructor position for the Mass Media department at South East Missouri State University. I teach five media classes, four face-to-face and one online course. I teach media software tools and equip students with the proper skills that will help them succeed in a converged mass media setting. However, the most important responsibility I have is to positively impact my students and share my experience, knowledge and expertise with them. I am part of an incredible team of professors within the SEMO Mass Media department. Everyone is supportive and helpful. This positive environment motivates me to do my best in my teaching. This gives me confidence and assurance that I have equipped them to achieve success in their careers. Moreover, I feel like an achiever when I have students stop by my office or send me an email to thank me for caring about them or for helping them understand a media topic.

How did your education at USM prepare you for this work and affect your life?
I would not have been able to do what I do now without USM's contribution. To an extent, I like to think of myself as a version of all my USM professors put together. I stole mentorship principles from one, learned charisma from another, borrowed dedication from the third, media understanding from the fourth, and the list goes on. I wish they could hear me when I share stories about the lessons I learned from them. USM has also given me many opportunities that prepared me for the things I do now. My position as a graduate assistant at USM equipped me for the teaching environment; working on research projects alongside my professors convinced me to start my own research agenda; participating in university competitions helped me see my value as a professional and contributed to building my confidence.

What advice do you have for prospective graduate students?
Pursuing a graduate degree isn't easy. Having the right group of people to help you makes all the difference. The knowledge, relationships and achievements you will gain from USM will equip you with everything you need in order to be successful. I am a result of that, and I am blessed to have been at Southern Miss.

Brian Street, MSW, Social Work

What is your current position, and what are your responsibilities?
I currently have my own social business, Your Legacy Begins Now, LLC, where my services include delivering motivational speeches to public schools, universities, and other youth-related entities and events; working with university grant-funded programs as a youth leadership and mentoring consultant, as well as program and curriculum development; serving as an international personal enrichment coaching facilitator, where I do one-on-one virtual coaching with clients from five different countries; and present at trainings in select cities around the nation. I'm also a full-time PhD student at Louisiana State University, where my dissertation focus is social entrepreneurship in the social work profession.

How did your education at USM prepare you for this work and impact your life?
I went from being academically suspended as an undergraduate to winning Student of the Year for my cohort and the entire School of Social Work MSW program both years in the program. My time there gave me a plethora of opportunities to engage with other students, faculty, and staff across the campus, across the state, and even in other states ,where I was able to become so much more culturally competent. It afforded me the opportunity to develop a state champion social business Blueprint Health (2016) with three other partners and to start a non-profit on campus (The Eagle's Nest) with fellow cohort members. It allowed me to serve in leadership positions for four different student organizations and gave me the platform to springboard my speaking, coaching and mentoring career through GA and internship opportunities. And lastly, it connected me with other professionals that I will have in my close circle for a lifetime.

What advice do you have for prospective graduate students?
"Know your why" before you make a decision to enroll. Know why you want to do it, because it will get tough, and your "why" has to be so strong that when it looks like there is no success in the foreseeable future, you still push through because you know why you're there. When the "why" is strong enough, the "how" will take care of itself. Embrace your uniqueness and don't try to fit in. Proudly stand out, lean forward and let your passion be known. When you aren't afraid to stand out, that's when opportunities will come your way.

Allison Campbell, PhD, Creative Writing

What is your current position, and what are your responsibilities?
Currently, I teach creative writing at Lusher Charter School, an arts-based education charter school in New Orleans. I am responsible for teaching creative writing elective classes to middle school students and also teaching the beginning-level creative writing course for high school students studying in the Certificate of Artistry in Creative Writing Program.

How did your education at USM prepare you for this work and impact your life?
Well, this starts as a small question, in terms of preparation for teaching creative writing, but the second half is rather major, life impact. My creative writing professors at USM guided me in understanding aspects of literary craft that apply directly to teaching young people how to write, and think, creatively. And my literature classes prepared me for guiding my own students through discovery of the work of others. But I would say that the biggest impact on my career and person has been the idea that having a creatively productive life has as much to do with patience, kindness, and perseverance as it does intelligence.

One of the most interesting parts of my job is seeing what my sixth grade writers come up with. Most of them have never taken a creative writing class, and they are extremely uninhibited. I think there may be something about the unformed ego allowing them access to parts of their minds that become blocked later in life - but that's just a working theory!

What advice do you have for prospective graduate students?
Don't keep rigid expectations for what you want to learn and exactly how you want to apply it. Soak in all you can and let it materialize as it will, when it will. Also, enjoy the generosity of your teachers and peers. And, if you are teaching while studying at USM, be equally generous with your own students.

Levi Moore, PhD, Polymer Science

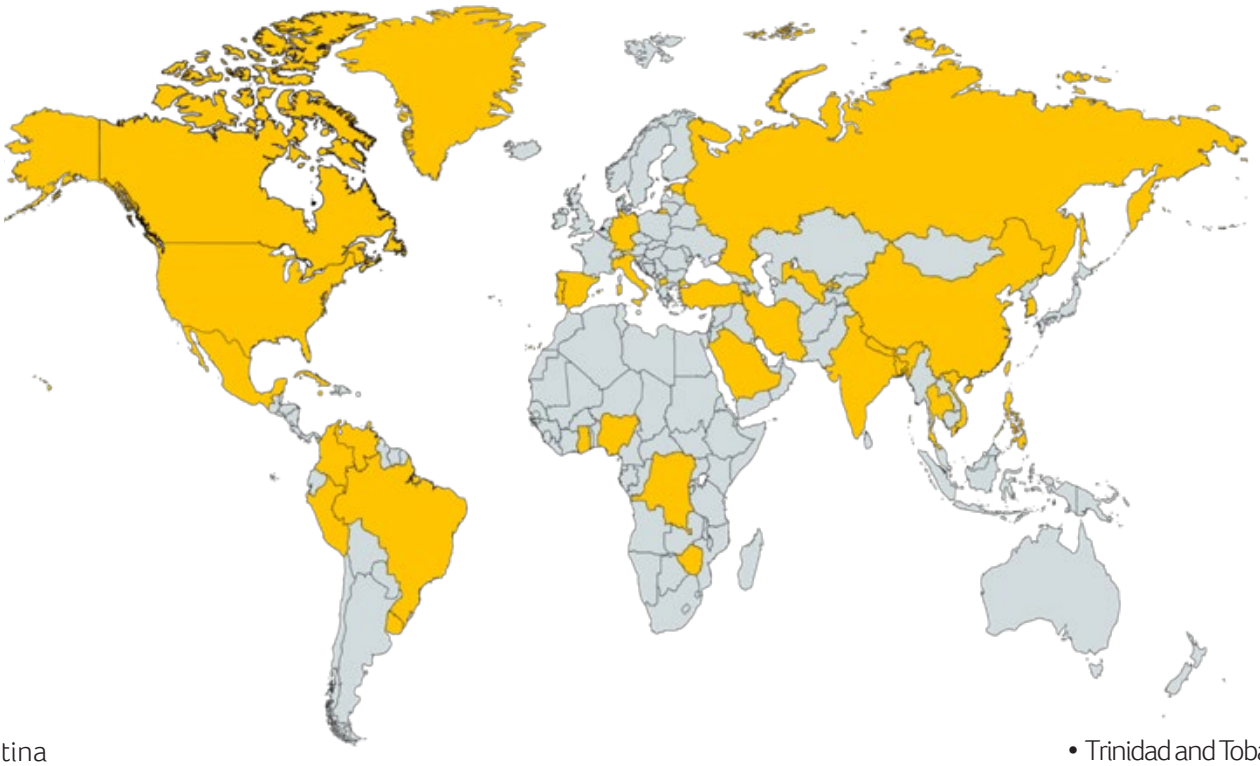
What is your current position, and what are your responsibilities?
I'm a research chemist at the Air Force Research Laboratory. My group is focused on basic research for materials concerned with rocket propulsion, ranging from solid rocket fuel to heat-resistant high-performance carbon fiber composites. Our goal is to discover and develop technologies that will maintain and enhance the Air Force's technological superiority now and into the future.

How did your education at USM prepare you for this work and impact your life?
The Polymer Science program at USM is world-class and gave me the tools to question and solve the diverse problems I'm faced with every day. My advisor, Dr. Sarah Morgan, was especially instrumental in preparing me for this work. In addition to the science, she pushed me to strive for excellence outside of the lab, as well, like how to present ideas well to diverse audiences and make tough scientific concepts accessible to those outside our specific field. That is especially helpful now, where everyone has disparate backgrounds, and that effective communication leads to better outcomes because everyone is on the same page.

The most interesting part of my job is the fact that it's rocket science! I'm always learning new things. The challenge is to design, create, and understand materials that can meet the extremely demanding specifications used in such complex systems. It's a constant challenge, but extremely interesting every single day.

What advice do you have for prospective graduate students?
We go to graduate school to discover new knowledge, to do things that have never been done before, and doing things that have never been done before is difficult. It can be easy to lose sight of that goal when things aren't going well, but persistence through that adversity is key to success.

USM Graduate Enrollment by Country (Fall 18)



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- Bahamas
- Belize
- Brazil
- Barbados
- Canada
- China
- Cameroon
- Colombia
- Costa Rica
- Germany
- Denmark
- Dominican Republic
- Ecuador
- Egypt
- Spain
- Ethiopia
- Georgia
- Grenada
- Guatemala
- Guyana
- Honduras
- Hungary
- India
- Iran
- Italy
- South Korea
- Kuwait
- Saint Lucia
- Sri Lanka
- Moldova
- Mexico
- Macedonia
- Montenegro
- Mongolia
- Malawi
- Nigeria
- Netherlands
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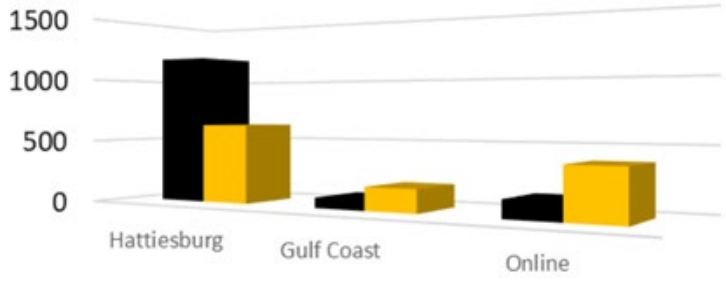
- Nepal
- New Zealand
- Pakistan
- Panama
- Peru
- Philippines
- Poland
- Portugal
- Romania
- Russian Federation
- Saudi Arabia
- Serbia
- Slovenia
- South Africa
- Thailand
- Trinidad and Tobago
- Turkey
- Taiwan
- Uganda
- United Arab Emirates
- United Kingdom
- United States of America
- Uruguay
- Uzbekistan
- Venezuela
- Vietnam
- Zimbabwe

USM Graduate Enrollment by Campus (Fall 18)



	Hattiesburg	Gulf Coast	Online
Full Time	1178	80	137
Part Time	627	179	389

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4. Submit graduate exam scores
5. Submit three letters of recommendation