

# University of South Carolina Upstate Student Research Journal

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## Student Spotlights - 2020

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## STUDENT SPOTLIGHTS

Each volume of USC Upstate's Student Research Journal reserves a section to celebrate the efforts, activities, and successes of our students. The spotlights are typically divided into two major categories: Alumni Spotlights and Nontraditional Student Spotlights. Students featured in the Alumni Spotlight section are nominated by faculty members excited about the transition of USC Upstate students into jobs and professional programs following graduation. Students featured in the Nontraditional Student Spotlight section are nominated by faculty members impressed by the advanced time management skills and multitasking abilities of students facing extra challenges during their tenure at USC Upstate (e.g., return to learn students, students working outside jobs and/or those having a family). In the current volume we spotlight and five alumni and one non-traditional student.



## ALUMNI SPOTLIGHT: KYLE BROWN

Kyle Brown, a life-long resident of South Carolina, graduated high school in 2005 and bounced around several different careers before deciding to return to school and pursue his dream of a career in wildlife conservation. Kyle transferred from Greenville Technical College to USC Upstate in the spring of 2014. A bit naïve, Kyle was targeting a career in marine biology even though there are no oceans in the upstate region of South Carolina. Kyle's plans quickly changed. During his studies at USC Upstate, Kyle found an interest in ecotoxicology and environmental policy. In his second semester at USC Upstate, Kyle found himself in Dr. Melissa Pilgrim's Ecology and Evolutionary Biology course. On one of the first days of class Dr. Pilgrim showed the class a video from her graduate research tracking massasauga rattlesnakes (*Sistrurus catenatus*). This sparked an immediate interest in the conservation of herpetofauna (i.e., reptiles and amphibians) and sent Kyle on a new trajectory.



Kyle got hands-on research experience when he joined Dr. Pilgrim's undergraduate research group, Upstate Herpetology. Kyle conducted call surveys for the North American Amphibian Monitoring Program and used automated recording systems to monitor anuran calling activity in the Piedmont region of South Carolina. Kyle was selected to take part in the 2016 National Science Foundation's Radioecology Research Experiences for Undergraduates (REU) program at the Savannah River Ecology Laboratory (SREL). As an REU participant, Kyle worked with Drs. Tracey Tuberville and Melissa Pilgrim investigating the bioaccumulation of environmental contaminants in Florida green watersnakes (*Nerodia floridana*). The experiences at SREL reinforced his love for research and working with herpetofauna. At the conclusion of the program, Kyle was selected to present his research findings at the National Science Foundation's REU symposium. The symposium was in Washington, D.C. and traveling to the symposium involved his first plane flight!

Following graduation from USC Upstate, Kyle accepted a position as a research technician with Dr. Tuberville at SREL. As a technician, Kyle continued investigating contaminant accumulation in watersnakes, conducted surveys for the state threatened gopher tortoise (*Gopherus polyphemus*) at Naval Air Station Pensacola, reviewed camera trap data documenting commensals at tortoise burrows, and reared hatchling and juvenile tortoises that were part of a headstarting program with the Department of Natural Resources. Kyle then joined Dr. Tuberville's lab as a graduate student whose thesis research focused on bioaccumulation and sublethal effects of mercury and radiocesium in Florida green watersnakes and banded watersnakes (*Nerodia fasciata*). Kyle graduated from the University of Georgia with his master's degree in December 2019 and accepted a position with the Florida Fish and Wildlife Conservation Commission (FWC). He is currently the Gopher Tortoise Conservation Biologist for Southwest Florida.

Kyle's experiences as an undergraduate put him on a course that allowed him to achieve his goal of a career in wildlife conservation. His time spent at USC Upstate prepared him for a future in research and gave him opportunities that would not have been possible elsewhere. As a non-traditional student with a wife and young child, USC Upstate offered Kyle the ability to stay close to home, work a part-time job, and get involved in research. Kyle is grateful to the biology and chemistry professors at USC Upstate, whose coursework and labs gave him the foundation necessary to become successful in graduate school and competitive in the job market. "Being able to have the opportunity to get involved with research and learn from Dr. Pilgrim and fellow students in Upstate Herpetology was an invaluable experience. I sincerely believe I could not have ended up in a better place."

## ALUMNI SPOTLIGHT: DONDRE CROSBY



Growing up as the baby of a family is pretty much seen as the gold standard by older siblings (e.g., spoiled, “momma’s boy,” etc.); however, I argue from my own experiences that their perceptions are skewed, and they fail to see the bigger picture. What my three siblings “saw” was that I received all the attention as a younger child, which took away from their levels of attention. However, as I transitioned into becoming a very capable child and they started to go through adolescence, attention shifted back to them. This occurrence left me searching for ways to find attention elsewhere. As a child, I poured everything I could into academics hoping that I would receive the same recognition and attention that I was used to. However, I never felt like I was “seen,” or the level of attention/recognition never equated to my expectations.

It wasn’t until I was walking down the hallway in fifth grade that I experienced the level of being “seen” that I was craving for. A teacher’s assistant by the name of Mr. Rice, who was an African American male like myself, told me to step into his office and he proceeded to ask me what I wanted to be when I grew up to which I responded a doctor. The very next day, he called me into his office by saying, “Good Dude!” and waving for me to come over. He had bought a book written by Dr. Ben Carson and told me that in order for me to get to where I was going, I needed to learn how others like me got there first. Keeping in mind that at this point in my life I only had one African American teacher in my life and that Mr. Rice was not even one of my teachers, I knew at a young age that this person genuinely “saw” me and what I could be. To this day I still have the book titled *Gifted Hands*.

Fast forward to my sophomore year as an undergraduate and I found myself playing my last college football game at Wingate University after accepting a football scholarship only two years prior. I made the careful decision that it was time to hang up my cleats and focus on the future that Mr. Rice saw in me so many years back. It was then that I made the best decision that I could possibly make. Transferring to USC Upstate opened the gate to realizing my potential and allowed me to understand what it meant to find out who I wanted to be. My research experience supervised by Dr. Kenneth Barideaux Jr., my internship molded perfectly towards my interest thanks to Dr. Lynn McMillan, and an opportunity to explore my educational advancement with the help of Dr. Scott Meek contributed to my success at USC Upstate. One thing I can be sure of is that at USC Upstate, you will be seen, cultivated, and pushed to become the best possible you there is. This led me to graduate cum laude as a Magellan Scholar and the recipient of the Jerry D. Lehman Award for outstanding psychology major. This pushed me to where I am now, a graduate student at Winthrop University in the School Psychology program where I hope to fulfill my passion of advocating for children with disabilities and making sure that they are seen just as Mr. Rice saw me so many years ago.

## ALUMNI SPOTLIGHT: SHIMIA HUNTER

Shimia Hunter is a 2019 graduate of the University of South Carolina Upstate, earning a bachelor's degree in sociology with a dual minor in nonprofit administration and health communications with honors. Raised in a small rural town in South Carolina, Shimia was able to experience the impact of household income, race, and education on a child's future success firsthand. This led to her decision to pursue an education and future career in public health, as she realized the importance of health in underserved and rural communities. Shimia's interests in healthcare increased after helping a family member recover from outpatient surgery, and continued to grow throughout her high school education after she enrolled in a health science course at a local career center. While in that course, she received the opportunity to participate in an internship in the intensive care unit at a rural hospital, where she realized not only the importance of health but also the need for health education and reform for the public.



While attending USC Upstate, Shimia initially became an interdisciplinary studies major with a concentration in public health. As a result, she was able to take classes that allowed exposure to multiple aspects of the public health sector (e.g., Health Economics, Social Problems, and Health Psychology). However, after taking a sociology course taught by Dr. Calvin Odhiambo, an Associate Professor of Sociology at USC Upstate, Shimia was encouraged to examine the multiple facets of the sociological field, gained interest in public health-focused research, and changed her major to sociology.

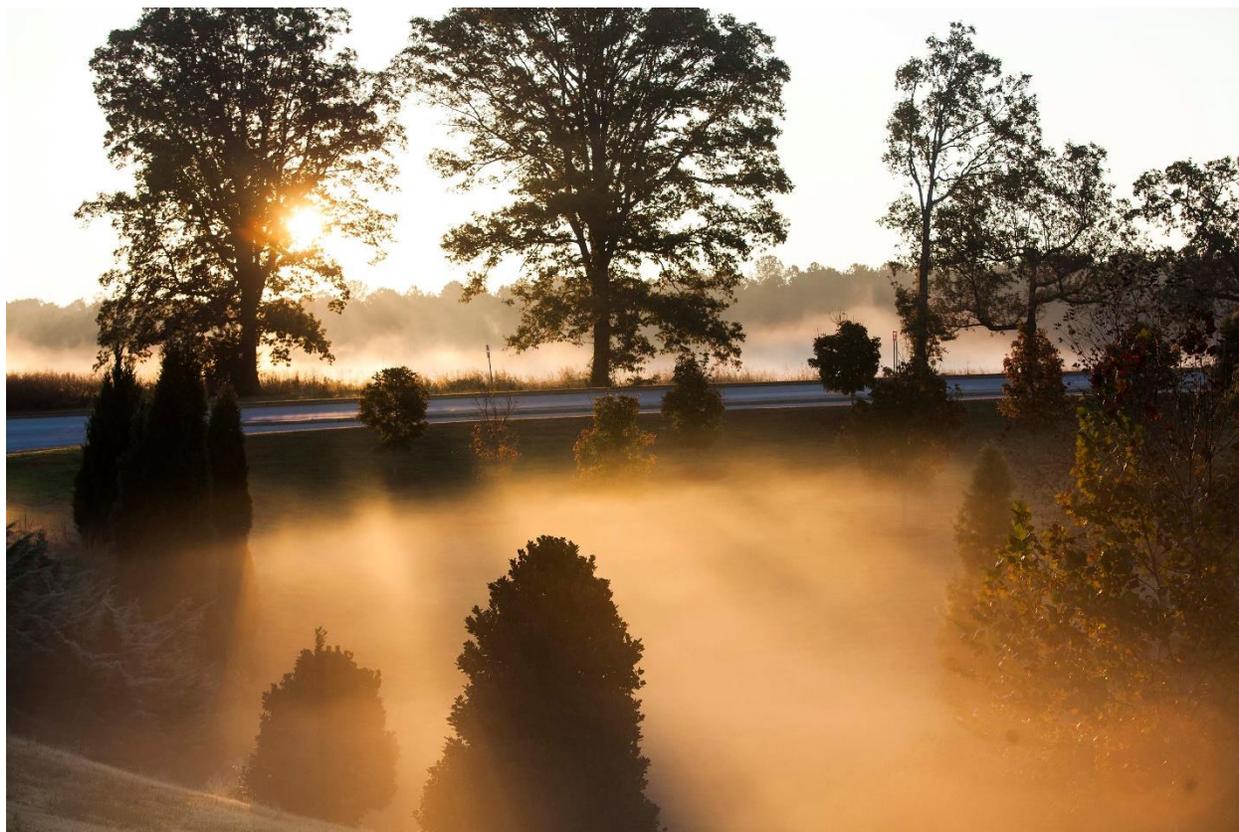
As a Sophomore, Shimia became a research assistant to Dr. Odhiambo on a project that examined racial disparities in breast cancer knowledge among undergraduate students, and later presented the research findings, at the 2016 South Carolina Upstate Research Symposium. Shimia went on to also present research at the 2017 Carolina Undergraduate Social Science Symposium in which she was awarded *Best Paper*, the 2019 South Carolina Upstate Research Symposium in which she was awarded *Best Student Oral Presentation* and received recognition at the 12th Annual James E. Clyburn Health Disparities Lecture.

Shimia worked various jobs on the Upstate campus during her undergraduate studies. From her sophomore year until graduation, she created and led group fitness classes and fitness events that encouraged physical and mental health for students on campus. She also worked in the Office of Service Learning and Community Engagement as a student assistant assisting with the SNAC (Spartan Nutritional Assistance Campaign) pantry which provided low-income students with supplemental food options. Finally, she led multiple student-led volunteer trips to various locations across the United States in underserved communities in Atlanta, Georgia, New Orleans, Louisiana, and Washington, D.C. to combat hunger and homelessness and to assist in disaster relief.

During her senior year, Shimia completed research which examined racial socialization for a Senior Seminar course, once again worked as a research assistant to Dr. Odhiambo on a project that examined racial disparities in maternal mortality in the United States and completed a certificate in phlebotomy. Her work with Dr. Odhiambo is published in this volume of the USC Upstate Student Research Journal – *it received the best graduate student paper award!*

Following graduation, Shimia began working as a phlebotomist and later a medical scribe to gain healthcare experience prior to applying to physician assistant school. Through both jobs, she received the opportunity to work alongside healthcare providers, non-clinical and clinical staff, and experience health issues and diseases first-hand. Her interest in healthcare increased after working on the frontlines during the coronavirus pandemic since its outbreak in the United States. By doing so, she learned the importance of health challenges faced by underserved communities as well as the need for general health communications so the public may receive accurate information about current health situations in America.

Due to her increased interest in public health following her participation in sociological research and various collegiate studies, Shimia has plans to pursue a career that will help to better understand the relationships between public health and medicine. Shimia's intentions are to obtain a Master's of Medical Science and Public Health degree in hopes of furthering her education to one day improve the health of communities, as well as contribute to new policies that will combat public health issues in the United States. Shimia is grateful to the faculty and staff at USC Upstate for providing the resources and encouragement needed to succeed academically and professionally.



## ALUMNI SPOTLIGHT: NURI SMITH



I grew up in a low-income family in rural South Carolina and was always observing the behaviors of those around me – both my immediate family members and others I interacted with on a regular basis. I remember being particularly interested in rarities in behavior (e.g., extreme anxiety, depression, obsessiveness). I began to question the relationship between heredity and abnormal human behavior. For example, “Why would a father and son have the same pattern of anxiety?”, or “How do certain behaviors appear without a family history?”, and more importantly, “Can these behaviors be treated?”. I asked my family these scientific questions, but they were unsure of how to answer them. So, it quickly became apparent that I had to go to college to find the answers.

I began my college career at USC Upstate as a biology major, psychology minor, and the hopes of going to medical school afterwards. I thought a career in medicine would put me on the path to answering my scientific questions. After taking a few biology classes and listening to SC Upstate Research Symposium keynote speakers Dr. Tyrone Hayes and Dr. Louis J. Gillette, I expanded my interest to consider how our environment impacts heredity and biology. I quickly sought out faculty that were doing research linking environment and biology/genetics, and first found Dr. Kimberly Shorter. I began working in her lab on various projects, and co-authored two publications that investigated the role of folic acid on human neurons as it relates to autism spectrum disorder. I was also able to conduct an independent research project that investigated gene expression changes as a result of over consumption of vitamin B12. I went on to give an oral presentation of this research at the SC Upstate Research Symposium in 2019 and won the Best Student Oral Presentation for Molecular Science. During this time, I became more interested in psychology and upgraded my minor to a major in psychology.

After a year of working with Dr. Shorter, I was asked by Dr. Christa Christ to start independent research, and jumped at the opportunity to work in a psychology lab. Starting in Dr. Christ’s lab doubled my time commitment for research every week, in addition to my 15-hour/week job at Starbucks and full course load. However, the commitment was worth it. Dr. Christ taught me how to ask specific scientific questions and design experiments that would best answer my scientific inquiries. She also taught me how to communicate my findings concisely and clearly. With her, I investigated whether feelings of anxiety and fear could be reduced by hand holding. I went on to present the findings of this project at the SC Upstate Research Symposium in 2020.

I graduated May 2020 with my Bachelors of Science in Biology and Experimental Psychology and both of these programs uniquely prepared me for my future. I am currently a Post-baccalaureate Research Education Program scholar at Johns Hopkins University working under Dr. Keri Martinowich and Dr. Svitlana Bach. This program prepares students for graduate school by increasing their time in the laboratory while providing opportunities for academic improvement and professional development. I am currently leading a research project that seeks to understand schizophrenia by altering the expression of genes associated with the disease. I plan to apply to doctoral programs next year. My long-term goal is to become a professor so I can perform research while also teaching. I want to impact the minds of young scientists the same way that the four phenomenal women in science mentioned above have impacted me.

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## ALUMNI SPOTLIGHT: MANETTE TANELUS

USC Upstate is an institution very near and dear to my heart because it shaped my career in ways that I could never have imagined. I was originally born in Port-de-Paix, Haiti and moved to Fort Lauderdale, FL in 2003. I graduated from high school in 2014 and was excited to have many college acceptances in hand. I chose to attend USC Upstate instead of larger state schools because USC Upstate offered smaller class sizes and more opportunities to interact with professors. Also, USC Upstate offered me an academic scholarship which meant less financial burden for my family.



My four years at USC Upstate taught me that students are at the core of the institution. My class sizes allowed me to fully ask questions, engage in class discussions, and find my niche. It was through these classes and discussions that I was able to meet Dr. Melissa Pilgrim, Dr. Thomas McConnell, and Dr. Araceli Hernandez-Laroche. Dr. Hernandez-Laroche taught me the French language, the importance of culture, and the importance of non-profit organizations throughout the world. Dr. Thomas McConnell taught me how to write with purpose as a creative writing minor. Dr. McConnell taught me that regardless of the genre, you must always think about your audience and give them enough information to navigate through your piece. Dr. Pilgrim facilitated my love for research.

As a student in Dr. Pilgrim's class, I was mostly focused on trying to stay afloat and get a good grade. However, we bonded during office hours and that led to her writing me a recommendation letter for the National Science Foundation's Radioecology Research Experiences for Undergraduates (REU) at the Savannah River Ecology Laboratory. I was selected to participate in the REU's 2017 cohort and completed two projects with the guidance of my mentor, Dr. Guha Dharmarajan. My projects focused on (i) the relationship between contamination concentrations and parasite loads of Largemouth Bass (*Micropterus salmoides*) and (ii) the effects of methylmercury on yellow fever mosquitoes (*Aedes aegypti*). These two projects exposed me to full-time research and also resulted in me gaining an appreciation for disease ecology.

Upon returning to USC Upstate, I joined Dr. Pilgrim's undergraduate research group, Upstate Herpetology. The research group exposed me to another side of science – I gained experience in fieldwork, animal handling, teamwork, research, scientific writing, and scientific presentations. As a member of Upstate Herpetology, I attended a national conference, published in two journals, and presented my work at the SC Upstate Research Symposium. Overall, I became aware of what it means to be a scientist and gained an appreciation for how scientists contribute to both society and the scientific community. It was these experiences that fueled my interest in becoming a scientist and enabled me to obtain a prestigious graduate fellowship to Virginia Polytechnic Institute and State University (Virginia Tech).

I am now a masters' student who is supported by the George Washington Carver fellowship through Virginia Tech's Entomology department as a member of Dr. Albert J. Auguste's Lab. I am studying the efficacy and safety of a chimeric vaccine designed for the Zika virus. The research experiences that I received as a student at USC Upstate were invaluable and prepared me well for graduate school. I can maintain my classes, remain organized, and plan protocols for my six research projects because of the discipline I learned throughout my bachelor's degree at USC Upstate.

## NON-TRADITIONAL SPOTLIGHT: ZACHARY FUCHS



Growing up, all I wanted to do was cook. By my junior year of high school, I was already working in restaurants. I threw myself right into the mix, washing dishes, learning the lingo, and chopping vegetables in a cramped kitchen, shoulder-to-shoulder with people who have become my lifelong friends. Naturally, my focus was to get out of high school and into culinary school. Academia was nowhere on my radar.

After entering culinary school, I learned to mop, chop, sweep and wipe my way into a fancy white chef's jacket (with equally fancy white hat, of course). Before graduating culinary school, I was picked up by Deveraux's, a snazzy fine-dining restaurant in downtown Greenville. The years flew by as I honed my craft, meeting new chefs, learning new techniques, and developing my own flare. I even got to spend a few years teaching culinary classes to homeschool students in the Upstate.

In the last few years of my tenure in foodservice, I had gone into business for myself as a caterer. During this transition, I looked for new ways to expand my repertoire as a culinarian. I had picked up home brewing as a hobby back in culinary school, and it continued to be something that I really enjoyed. I even learned how to make my own agar and isolate yeast strains from commercial beers. This was way back before brewing beer and growing a mustache were cool things to do. So I did my research, and I found that I could earn a BS in brewing science online. There were a few prerequisites that I needed to satisfy before applying, which I wasn't crazy about, but you can't make an omelette without...well, you know.

One of the prerequisites was microbiology, which was taught by a microbiology lab tech who worked at a local hospital. In a crazy turn of events, I found myself touring the local hospital lab, and loved it. The discernment of leaving foodservice was a genuinely difficult time for me, but I ultimately took the leap. I took my prerequisites and applied them to the Medical Lab Tech program at Greenville Tech. Once again, I threw myself into the mix with four lectures and four labs per semester. I thought I had lost my mind, but I was doing great. I finished with one of the highest GPA's in my graduating class, passed my boards on the first try, and jumped straight into hospital life. Working in a medical lab is a lot like cooking, except there's air conditioning and a lot less yelling.

After several years of serving in the medical community, both as a tech and a phlebotomist, I began to crave more. I have had the opportunity to work alongside a multitude of primary care providers, who have shown me that serving in primary care is not some exclusive club. It's for those who have the drive to succeed and to put the needs of others above their own.

So I went BACK to school in the Spring of 2019 as a Bio Pre-PA major at USC Upstate while continuing to serve in the hospital. This has been one of the biggest challenges of my life, because my responsibilities are very real, and it has been a delicate balancing act in keeping my responsibilities satisfied while performing at the level required of a pre-health major. And I wouldn't trade it for anything. I'm so thankful for the support that I have received from my professors while I continue this journey through academia and into this new and exciting vocation.