A Season of Success in the Department of Biological Sciences

The Department of Biological Sciences has a number of big reasons to be very proud and excited as we begin the 2018-2019 academic year. First, we are in the middle of the design phase for our new building to house the College of Science and Mathematics. This building, which is to be constructed adjacent to Medical College of Georgia’s Harrison Education Commons, will contain state of the art laboratories for our department. It will provide the space we desperately need to grow both our academic programs and our research capacity, and it will put our faculty and our students right in the middle of the action on our Health Sciences Campus. Second, we expect our proposal for our Masters of Science in Biomolecular Science to be approved soon which will allow us to begin recruiting students for our inaugural incoming class for the fall of 2019. This two-year research-based masters program will prepare students for future jobs in a variety of molecular science fields or prepare them for Ph.D. or other professional programs. Third, the first cohort of students from our BS/MD and BS/DMD Programs recently completed their first year of medical and dental school, and they out-performed their fellow students who did not complete their undergraduate work with us! Moreover, we are very pleased that six of our former students were selected to receive Harrison Scholarships from the medical college. Fourth, the results of the Major Field Test, an exam taken by all of our graduating seniors, continue to demonstrate the quality of our program. For the second year in a row, our graduates collectively achieved scores that exceeded the 90th percentile nationally! That is an outstanding ranking, and it is all due to the very hard work of both our students and our faculty. We are all extremely proud of the quality of a degree from Augusta University’s Department of Biological Sciences.

Dr. Richard Griner
Department Chair
Student Research Presentations

INTERNATIONAL /NATIONAL MEETINGS

The Wildlife Society 24th Annual Conference
Albuquerque, NM
Detection of Bisphenol A in the plasma of Yellow-Bellied Sliders (Trachemys scripta)**
K. McDavid and R. Cromer

Evaluation of Wild Pig Behavioral Responses to Scent Exposure on Cowden Plantation, Jackson, SC ♦**
S. R. Hitchens; S. Sethuraman, and B. Saul

24th Biennial Meeting of the Coastal and Estuarine Research Federation
Providence, RI
The case of the towering Spartina: on-going assessment of salt marsh dynamics in an altered estuary in Georgia**
S. Johnson, J.M. Reichmuth, and S.T. Bennetts

Signs of endocrine disruption: morphometrics and EcR expression in fiddler crabs along the Georgia-Carolina coast**
J. Mercer, J.M. Reichmuth and J.D. Cannon

Investigating genetic diversity of Callinectes sapidus and Areanaeus cribrarius of the southeastern Atlantic coast**
K. Minglesdolph, B. White, S. Mannix, A. Coleman, J.M. Reichmuth, and A.L. Abdulovic-Cui

Electronics at the coast: designing and testing an inexpensive GPS-tracking sonde using the Teensy™ microcontroller✦**
C. Morrison, A. Holmes, J.A. Hauger, and J.M. Reichmuth

Hooked on healthy estuaries: Fish assemblage diversity of the Satilla River Estuary♦
J. Wiggins, B. Saul, and J.M. Reichmuth

International Wild Pig Conference
Oklahoma City, OK
Evaluation of Wild Pig Behavioral after Exposure to Visual and Olfactory Stimuli on Cowden Plantation, Jackson, SC **
S. R. Hitchens and B. Saul

19th International Conference on Heavy Metals in the Environment
Athens, GA
Establishing Guidelines for Healthy Food Production in an Urban Brownfield: Is Aquatic Vegetation in the Augusta Canal, Augusta, GA, Safe for Use as Compost? ♦
B. Barrera, R. Greene, and D. Wear

2018 American Association for Cancer Research Conference
Chicago, IL
Characterization of NF-κB Deficient bone-marrow derived macrophages **
A. Peppers, J Fischer, and J.W. Bradford

48th Annual Meeting of the American Pancreatic Association
San Diego, CA
Nox1-derived reactive oxygen species deteriorates the pancreatic exocrine function in middle-aged mice ♦X
J. Rammohan, A. Pruitt, K. Bhagat, L. Miller, and M.E. Sabbatini

Chronic consumption of ethanol decreases trimethylation at Lys9 and phosphorylation at Ser10 of histone H3 in rat pancreas♦X
A. Pruitt, C. Hernandez, T. Patton, and M.E. Sabbatini

SYMBOL KEY
♦ Oral Presentation
** Poster Presentation
★ Award Winner
❖ Presented at Phi Kappa Phi Conference
⊙ Presented at CURS Brown Bag Seminar Series
✓ AU’s Congressional Fly-Inn Ted Talks
X Published Abstract
REGIONAL MEETINGS

Southern Regional Honors Council Conference
Washington, DC
Structural Affinity of CAP1 and AC isoforms**
S. Mehrotra and M. Sabbatini

Detection of Bisphenol A in the plasma of Yellow-Bellied Sliders (Trachemys scripta) **
K. McDavid and R. Cromer

Tri-Beta Regional and 79th Annual Association of Southeastern Biologists Combined Meeting
Myrtle Beach, SC
Characterization of NF-κB Deficient Bone-Marrow Derived Macrophages♦
A. Peppers, J. Fischer, and J.W. Bradford

Isolation and Culture of Microglia**
D. Doughty, N. Venugopal, and J.W. Bradford

Southeastern Estuarine Research Society Spring Meeting
St. Augustine, FL
Remote live tracking of water flow in Satilla River Estuary to examine changes due to human alteration◆
A. Holmes, C. Morrison, J.A. Hauger, and J.M. Reichmuth

Show me what you’re made of: an initial investigation into shark populations and diet in the Satilla River Estuary**
A. Henning, J.M. Reichmuth, B. Saul, and A. Loren

6th Annual Southeast Regional Georgia Undergraduate Research Conference
Milledgeville, GA
The Significance of the Study of Evolution: Development and Implementation of an Interactive Course Module: Phase I **
C. L. Wilson and S. Mukhopadhyay
LOCAL MEETINGS

CURS Brown Bag Seminar
Ethanol abuse decreases phosphorylation at Ser10 of histone H3 in rat
K. Liao, N. Jhanji, and M. Sabbatini

Production of a NF-κB deficient microglial animal model
M. Goodall, K. Soni, and J.W. Bradford

CURS Summer Scholars Program Poster Session
Nox1-derived reactive oxygen species deteriorates the pancreatic exocrine function in middle-aged mice
J. Rammohan, A. Pruitt, K. Bhagat, L. Miller and M. E. Sabbatini

Microglial NF-κB deficient animal model production and isolation of microglia
M. Goodall, A. Peppers, K. Soni, and J.W. Bradford

2nd Southeast Cancer Immunology, Immunotherapy and Inflammation Research Retreat
Microglial NF-κB deficient animal model production and isolation of microglia
M. Goodall, A. Peppers, and J.W. Bradford

2017 TechNet Cyberspace and Electronic Warfare Operations Augusta (Future Leaders Poster Show)
Microglial NF-κB deficient animal model production and isolation of microglia
M. Goodall, A. Peppers, and J.W. Bradford

19th Annual Phi Kappa Phi Student Research and Fine Arts Conference
Epigenetic Modifications in Rat Pancreas Following Ethanol Abuse
K. Liao, N. Jhanji, and M. Sabbatini

The sublethal effects and bioaccumulation of 17α-ethinyl estradiol in Lumbriculus variegatus
K. Ogunsemore and F. Wiley

Examining the effects of Aetokthonos hydricola extract on oxidative stress in C6 cells
K. Ward and F. Wiley

A Preliminary Investigation of the Blue-eyed Grasses of Augusta University’s Summerville Campus
C. Treacy and C. Christy

Expression of Bcl-2 in MCF-7 Cells Treated With PFOA
M. Glenn, V. Gaw, and J. D. Cannon

Measuring the Influence of Traffic Noise on Songbird Vocalizations
E. Frazier, M. VanDeventer, and R. Cromer

Epigenetic modifications in rat pancreas following ethanol abuse
K. Liao, N. Jhanji, A. Pruitt, C. Hernandez, T. Patton and ME Sabbatini
Emil K. Urban Student Research Awards

These awards were created in memory of Emil K. Urban who passed away on January 23rd 2014. Dr. Urban was an internationally-known and highly-respected ornithologist who co-authored the definitive works on African birds, titled appropriately, the Birds of Africa. He led our department as chair for 27 years with excellence, and the sustained quality of our academic programs and the student-centered culture ingrained in our department are his lasting legacy. We owe it to his memory to strive to never lose these qualities as we seek to maintain the level of excellence he established for our Department. Each year three undergraduate students who have made outstanding contributions in research are selected by the faculty of the Department of Biological Sciences - one award is given to a student whose research is field-based, one is given to a student whose research is laboratory-based, and for the second time, another will be awarded to a student who’s research bridged both categories.

Laboratory Research – Anthony Peppers

Anthony is a senior Cellular and Molecular Biology and Chemistry double major, and has recently interviewed at medical schools. He has conducted undergraduate research on the optimization of a microglial isolation procedure with Dr. Jennifer Bradford since 2017. He has also worked with the characterization of a NF-kB knockout animal model in conjunction with Dr. Jeffrey Fischer. He presented his work at the American Association for Cancer Research Meeting, Association for Southeastern Biologists Conference, PKP Research Conference, 2nd Annual Southeast Cancer Immunology, Immunotherapy and Inflammation Research Retreat, and the Augusta University CURS Summer Scholars Symposium. He will also co-author a scientific article on his research topic.

Integrated Research – Keturah Mingledolph

Keturah is a senior Cellular and Molecular Biology major who graduated in May. She has conducted undergraduate research with Drs. Amy Abdulkiv-Cui and Jessica Reichmuth since 2015 on the genetic diversity of blue crabs in the Satilla River Estuary. She has been the lead undergraduate researcher on two studies and presented her work at the Dover Bluff Community Research Conference in GA, and at the Coastal and Estuarine Research Federation Meeting in Providence, Rhode Island. She will be a co-author on a manuscript about the genetic diversity of crabs on the southeastern Atlantic Coast. Keturah plans to go to Pharmacy School in 2019.

Field Research – Samantha Hitchens

Samantha is from Salisbury, Maryland and transferred to AU in 2012. She will be graduating in 2019 and will earn three AU degrees: Biology from the Department of Biological Sciences, Chemistry from the Department of Chemistry & Physics and Finance from the Hull College of Business. Samantha has been doing wild pig olfactory and behavioral research with Dr. Bruce Saul since 2017. He has also worked with the characterization of a NF-kB knockout animal model in conjunction with Dr. Jeffrey Fischer. She presented her work at the American Association for Cancer Research Meeting, Association for Southeastern Biologists Conference, PKP Research Conference, 2nd Annual Southeast Cancer Immunology, Immunotherapy and Inflammation Research Retreat, and the Augusta University CURS Summer Scholars Symposium. She will also co-author a scientific article on her research topic.

Dianne C. Snyder Distinguished Service Award

Each year senior biological sciences major who has demonstrated an exemplary and sustained degree of selfless and dedicated service to the Department of Biological Sciences is selected by the faculty of the department to receive this award established in honor and memory of Dr. Dianne Snyder.

Missy Hewett

Missy was born in Thomson and was raised & homeschooled by her mother. She transferred to AU in 2014 and has been involved with many campus service organizations. Missy is the co-founder and president of the Pre-Dental Club and Chair of Education in the LEAD Scholars Program. She has been a peer mentor at leadership camps at Augusta University and her past school, the University of North Georgia, where she received an outstanding leadership award. She has been involved in ecology research with Dr. Bruce Saul and plans to continue assisting in that research after graduation. This past year Missy also became involved in laboratory prep for both Biology 1107 and Biology 3700. Her level of organization, preparedness coming in to prep sessions, and her attention to detail have helped to ensure that labs each week are set up for success. Missy was a tremendous help in Biology 3700 this spring as a TA for labs, and she utilized her experience as a student, having successfully completed this course, to help walk groups through more difficult experimental design and analysis phases. Her future plan is to enroll at the AU’s Dental College.

Biological Sciences Outstanding Senior Award

Each year a senior biological science major that has a distinguished record based on their classroom and laboratory performance and their major and overall grade point average is selected by the faculty of the Department of Biological Sciences

Lara Way

Lara was born and raised in Augusta, Georgia and graduated from Lakeside High School. After starting at the University of Georgia, she transferred to Augusta University in the fall of 2016. She is a very enthusiastic, hard-working Biology major and scholar athlete who will graduate in May. In her short time with us, she has set three school track records and was recognized as a NCAA Academic All-American, twice. In addition to her degree studies and athletics, she enjoys conducting endangered plant research with Dr. Bennets, and being a representative in the Student-Athlete Advisory Committee. Lara is greatly inspired to give service to her country by joining the U.S. Army and ultimately achieving her dream of becoming a dentist. She was recently accepted into the Dental College of Georgia, and will enter in the fall of 2018. Based on her outstanding academic and athletic accomplishments, she has been awarded a U.S. Army Health Professions Scholarship to cover her expenses for four years of dental school followed by four years of dentistry service in the Army.
Academic Excellence Award in Biological Sciences
This award recognizes excellence and achievement in academic performance for the highest science GPA.

Jason Brown

Jason was born in Augusta where he initially attended Tobacco Road Elementary School. In the 4th grade, his parents’ employer (U.S. Department of Defense) moved the family to England where he finished elementary and middle school. He took advantage of his time in Europe to enjoy its culture and history, before returning to Augusta to attend Lakeside High School. Jason has been enthralled by the biological sciences ever since his parents gave him: Walking with Dinosaurs. His interests have evolved from paleontology to herpetology to eventually ending up with neuroscience. He will graduate in May from Augusta University with a degree in Cell and Molecular Biology with a Pre-medicine focus. He will enroll in a MD/PhD degree program in Texas or here at AU. Jason was the only senior biological sciences graduate who has earned a perfect 4.0 in not only their biology, chemistry, and physics coursework, but also every single class he has taken.

Graduate and Professional School Acceptances

Medical School
Jason Brown - Augusta University
Avirale Sharma – Augusta University
Mark Yassa – Edward Via College of Osteopathic Medicine
Stav Leibou – Sackler Faculty of Medicine at Tel Aviv University
Ariel Newsom – Philadelphia College of Osteopathic Medicine

Pharmacy School
Keturah Mingledolph – Medical University of South Carolina
Regina Ferraro - University of Georgia

Graduate School
Corey Treacy, MAT, Augusta University
Keri Jones, MS Medical Illustration, Augusta University
Monisha Amin - MS Biomedical Sciences, Philadelphia College of Osteopathic Medicine

Veterinary School
Kassandra Willoughby – University of Tennessee

TriBeta 2017-2018 Inductees

Beta Beta Beta (TriBeta) is a society for students dedicated to improving the understanding and appreciation of biological study and extending boundaries of human knowledge through scientific research. Since its founding in 1922, more than 200,000 persons have been accepted into lifetime membership, and more than 553 chapters have been established throughout the United States and Puerto Rico. This year at AU 25 Biology majors were inducted into the Kappa Kappa Chapter of TriBeta during a ceremony on March 29th in the JSAC Ballroom. Congratulations!

Bryaunna Barrera  Aileen Li  Ellis Reavis
Abigail Bickle  Aaron Mahajan  Victoria Rodriguez
Jason Brown  Nicholas Maron  William Saunders-Cummings
James Crockett  Laura Marshall  Karan Soni
Deanna Doughty  Francis Medina  Amy Trang
Victoria Gaw  Jarron Okine  Corey Treacy
Avirale Sharma  Austin Osby  Liam Wolff
Allison Lewis  Anna Raley  Michael Goodall

Alumni Accolades

Jason Brown (2018) was awarded a J. Harold Harrison Scholarship to attend the AU Medical College of Georgia
Lara Way (2018) was awarded a U.S. Army Health Professions Scholarship to attend the AU Dental College of Georgia
Emily Friedman (2016) completed MS in Biology at GA College and State University
Shawna McCafferty (2014) completed the AU Medical College of Georgia
Austin Coleman (2013) completed MS in Ecology at the University of Georgia
Rion Taylor (2000) became MidAmerica Nazarene University’s first endowed professor
We would like to welcome our new Program Director, Sharn Vericella, to the Department and University.

“As a native of Augusta, I’ve always appreciated the beauty of the Summerville campus. Now to be working on that campus is a dream come true. After earning my MBA a while ago, I volunteered for a year of AmeriCorps service. This service combined with international sales development for Delta Air Lines helped to expand my diversity horizons and reinforced my passion for guiding and serving others.”

As the 2017-2018 academic year comes to an end, we can look back with pride on the many accomplishments of our Professional Scholars. Whether it be through academics, research, or volunteerism, the professional scholars have had many highlights as noted below: The Junior class entering MCG this Fall averaged 514 on the MCAT with two of those students scoring 522, placing them in the top 1% nationally. The Sophomore class created the first ever Augusta University Red Cross Club. And the Freshman class worked with Mr. Vericella to create the inaugural Student Advocate Committee for Professional Scholars. Throughout every cohort, the professional scholars joined service organizations such as 1828 Ambassadors, Biology Club, MAPS, Pre-Dental Club, and volunteered for events such as the Dental College of Georgia Impressions Program, Igniting the Dream of Medicine Conference, CURS Brown Bag Seminars, and Augusta University Day of Service. We would like to thank those faculty on the Summerville and Health Sciences campuses who have mentored the professional scholars through participation in research topics such as breast cancer, pancreatic cancer, glioblastoma tumors, and laser technology on implant services Many of these scholars will continue this summer to partner with faculty to conduct or continue with ongoing research, volunteer in the CSRA or back at home, shadow physicians and dentists, and prepare for the MCAT or DAT. In the Fall of 2018, we will welcome the sixth cohort of Professional Scholars and look forward to mentoring them as they formally begin their journey toward a career in healthcare.

**Medical Scholars**

- Haroon S. Alam
- Rohitha Baskar
- Akash Chakravarthy
- Sheenu Chirackel
- Sahithi R. Edavally
- Sun Yong "David" Kim
- Pranjal Mishra
- Namratha Mylarapu
- Sambit Panda
- Pranav Prabu
- Hasith Sangabathula

**Dental Scholars**

- Kanwar P. Singh
- Garima Sinha
- Jin-Hyuk "Augustine" Song
- Jennifer J. Su
- Shalini R. Vemuru
- Natasha Venugopal
- Di "Maggie" Xia
- Albert Xiong

**Biology Club Corner**

The Biology Club is an organization comprised of mainly Biology students and provides a sense of community for students interested in the biological sciences. Students gather and exchange ideas as well as learn more about their field of interest through socializing with others who share the same interest. Biology club membership includes regular meetings to maintain the club community, guest speakers from local and national graduate school programs as well as industry to provide career insight to members, social events for members to gather and have fun, and a chance to interact with the community through volunteer and outreach programs. This past year the Biology Club was able to recruit almost 40 new members to increase the club size and participation. Educational and career based activities that members were involved in included hosting of multiple information sessions for students— one of which was a presentation by Ms. Patty Cardenas with Ross University School of Medicine and another by Sgt. Duby to inform members of the Army scholarships that are available for students looking to go into healthcare. This academic year the club also hosted a new outreach event the DKMS Blood Cancer drive, as part of the AU Wellness Fair held in April, to raise not only monetary donations for affected families but also to recruit bone marrow donors locally! In addition, Biology club remained active in the community with its continued involvement with the annual Earth Day celebration at Phinizy Swamp Nature Park, partnering with the AU Cancer Center, to give out plants to the event participants. Members also took a long-awaited trip to the Riverbanks Zoo in Columbia and enjoyed each other’s company while visiting with the resident animals. Student members finished the semester strong with the timeless tradition of the spring plant sale—having the biggest sale yet- and raising over $300. A huge should out goes to Dr. Bennetts, Dr. Davis, Dr. Christy, and all the club members who made this year great and allowed for this organization to rank among the top scientific clubs here on campus. As the outgoing President of Biology Club I leave the club satisfied knowing that it is in good hands with the newly elected officers led by President elect Hanna Minot.

Arman Qureshi
President August University Biology Club 2017-2018
MAPS (Minority Association of Pre-Health Students)

MAPS, which stands for Minority Association of Pre-Health Students, is the Summerville campus organization that works closely with its mentors from the SNMA (student National Medical Association) group down at the Health Science Campus. Our mission is to guide, support, and encourage pre-healthcare students in their various ambitions to become members of the healthcare field. Ultimately, our goal is to increase diversity in the healthcare field, with a special emphasis on underrepresented minorities and work towards the betterment of general patient care. We seek to bridge the gap between undergraduate studies and professional level programs (such as medical, dental school, and other graduate schools), and raise awareness of the health profession in the community especially among underrepresented populations. Also to provide minority communities with resources and information about general health care and preventative medicine, in order to eliminate health disparities.

This year MAPS has had many informational sessions and volunteering opportunities for undergraduates. As some may know, in the month of March, MAPS had hosted a MedTalks series. This seminar series of talks were given by distinguished faculty regarding diversity in healthcare. We were able to host Dr. Robyn Hatley who is a Professor of Surgery and Pediatrics, Dr. Reynolds Jarvis, which is the Associate Professor of Medicine and Psychiatry, and Dr. Kelly Homlar who is the Director of Orthopedic Residency Program also specialized in Orthopedic Oncology and Reconstructive Surgery. All of these doctors represented the underrepresented minority groups in the healthcare field and told their personal stories about how they were able to be successful in their respective fields. Students who attended were able to ask all their questions about the healthcare field and any obstacles that came in the way to be more prepared as undergraduates.

MAPS also was able to host Ms. Melissa Knapp, the coordinator of the CURS program, who was able to conduct a research workshop for MAPS members by providing information about the research opportunities available at Augusta University. Members were also given mentors, who were 1st and 2nd year medical students in SNMA at MCG, through a mentor-mentee mixer to allow them to build a more personal relationship with someone at medical school to help them discuss any advice or even future problems they may encounter. We were also able to have Mr. Troy who is a part of the Medical School Admissions Panel to come in and tell students how to create a successful medical school application along with what MCG, specifically, looks for in a student who is applying.

One of the last major things MAPS was able to conduct this school year was Game Night at the Ronald McDonald house on the Health Science Campus. Many volunteers came in every other Thursday to play games with children and families. This gave members a new experience of the healthcare field and we wish to continue this Game Night for the future as well. The children were always happy to see new faces and volunteers come in and play!

MAPS’s focus this year was to expand their research and volunteering opportunities to the members and we have been very successful in getting members more involved in the community! We always encourage students to join this club so we can make a difference on the Summerville and Health Science Campuses!

Faculty Awards

Half-Way There Student Celebration Awards:
Compassion: Drs. Jennifer Cannon, Heba Saleh, Bruce Saul, Debra Saul
Collegiality: Drs. Joanna Appel, Chris Bates, Bruce Saul, Debra Saul
Leadership: Dr. Debra Saul

Center for Undergraduate Research (CURS) 2018 Summer Scholars Program:
- Dr. Jennifer Bradford with students: Deanna Doughty, Michael Goodall, and Emilee Mikulsky
  The role of myeloid cell NF-κB signaling in cancer
- Dr. Eugenia Sabbatini with students: Jasim Shuja, Di (Maggie) Xia, and Kanwar Singh
  Alterations in histone modifications following alcohol in pancreas from Nox1 KO mice
Faculty Grants, Presentations, and Publication

**External Grants**

Drs. Jessica Reichmuth, Amy Abdulovic-Cui, Chris Bates, Stacy Bennetts, Jeff Fischer, & Bruce Saul: *Altered by a man-made cut: how obsolete navigation channels affect estuarine dynamics*

2019-2021. Georgia Department of Natural Resources Coastal Incentive Grant.

**Dr. Bruce Saul:** *Ichthyofauna of St. Catherines Island.*


**Dr. Donna Wear:** Establishing Guidelines for Healthy Food Production in an Urban Brownfield: Is Aquatic Vegetation in the Augusta Canal, Augusta, GA, USA, Safe for Use as Compost?

2018-2019. American Communities Trust Grant.

**Presentations**

**Dr. Amy Abdulovic-Cui** – Invited speaker at University of South Carolina Aiken and Truett McConnell University: “Investigating the fidelity of DNA replication in yeast”

**Dr. Jennifer Bradford** - 2018 Celebration of Research and Creative Activities Symposia, Augusta, GA. January 2018. (Oral)

AND 2018 Tri-Beta Regional and 79th Annual Association of Southeastern Biologists Combined Meeting, Myrtle Beach, SC. April 2018 (Oral)

*The Role of Myeloid NF-κB in Glioblastoma*

**Dr. Soma Mukhopadhyay** – 31st Annual Conference of the Human Anatomy & Physiology Society. 1) (Poster) *Instilling the Concept of Molecular Evolution to Foster the Understanding of Human Body and Health; A Pilot Study*

2) Panel Discussion on Effective Recruitment, Retention and Training for Teaching Assistants in Anatomy and Physiology

**Dr. Jessica Reichmuth** - Southeastern Estuarine Research Society Spring Meeting. April, 2018. St. Augustine, FL (Oral)

*Patterns of phytoplankton biomass related to hydrology and changes in salinity in a manipulated estuary*


**Dr. Donna Wear** - 19th International Conference on Heavy Metals in the Environment. Athens, GA. July 2018. (Oral)

*Establishing Guidelines for Healthy Food Production in an Urban Brownfield: Is Aquatic Vegetation in the Augusta Canal, Augusta, GA. Safe for Use as Compost?* - Sierra Club Savannah River Group, Augusta, GA. June 2018. (Oral) *Sibley SoilWorks: Is Aquatic Vegetation from the Augusta Canal Safe for Use as Compost?*

**Publications**


** A figure from this manuscript was chosen for this issue’s cover**


Undergraduate Research at AU

I knew I always wanted to take my education further to graduate school. However, graduate programs are competitive and I knew I needed something that will help me stand out more. I didn’t consider research until a fellow classmate of mine shared their research with me. So I decided to find a professor that I liked that was willing to help guide me into this new part of me undergraduate career. I chose Dr. Reichmuth as my research professor. She was excited to hear about my interest and more than willing to add me to the group. She told me that I would be working with Dr. Abdulovic-Cui on the genetics portion of the project. I met with her in her office and she explained to me the background and purpose of the project her team was working on. The research would team up with the locals in the Dover Bluff community at the Satilla River. Once a month, our team would make trips to the Satilla River and collect water samples, soil samples, and data on the fish and vegetation that is present at each site. This information will tell you about the ecological health of the area.

Each trip we would select 15 male blue crabs by random to take back to the lab. In the lab, me and my lab partner dissected tissue from the legs and used a g-DNA Mini Prep Kit to isolate DNA samples from each crab. Once we reached about 200 samples, we submitted the samples off to a Profession Research Lab in Atlanta where the 16srRNA gene can be sequences to identify the level of genetic variation among the blue crab at each sampling site.

This experience was very rewarding to me. I perfected the techniques I learned about in my lecture and lab classes. I even had the opportunity to present my research at the Coastal and Estuarine Research Federation at the Fall 2017 conference. I was able to get a portion of what it is like as a scientist to work toward solving issues through field work, conducting experiments, and analyzing data. I just want to thank Dr. Abdulovic-Cui and Dr. Reichmuth for this opportunity and I will take all that I have learned and continue to build on it as I become a better scientist.

Keturah Mingledolph
AU Class of 2018
Study Abroad Experience

Adventures in Iceland

I walked out of the plane without knowing what to expect. From the time we left Augusta to when we landed in Iceland, we crossed over everything from warm oceans to a land of rocks and water so cold it was covered in ice. It was as if we were being sent to the place where Peter Pan kept his lost boys.

This trip covered two course subjects: Ecology and Genetics. Personally, I decided to take the Genetics course, but it was pretty much split half and half between the classes. In the beginning, I knew maybe two people who went with us, and everyone else was just a stranger that decided to travel along with me. I didn't know them then and as a result, I had no idea just how close we would all turn out to be. Not to mention the time we would unofficially watch a soccer game from a nearby hill so we wouldn't have to pay the entry fee. Everyone became really great friends and we all hung out downtown when we had free time. One morning, three others and I even went on a morning run to a nearby waterfall.

To start off the trip, we decided to go to the Blue Lagoon which was pretty much a pool of warm and bright blue water that made me feel amazing for 36 hours after being in it. Later on, we learned the history of Iceland by our visits to the Viking settlements and we discovered Snorri (one of the first settlers). The traditions and history of Iceland were insanely well preserved which made them prime subjects to study genetics. We also went to the water of Iceland and I remember thinking that the water reminded me of a second sky which was somehow placed on the ground for us to enjoy because it was so clear. However, while I have been singing all the praises of Iceland, there were two things I didn't like. The hot springs smelled like rotten eggs and the fermented shark more or less tasted like rotted meat. Eggs now have a rather intense distaste on my part.

I think my favorite parts were when we were outdoors and got to see the whales and the landscapes. It was like the whales knew we were there to watch them and they didn't want to disappoint. Watching these beautiful animals move through water, like they weighed 1000 pounds less than they actually did, was something that I will probably never see again. At some point, I just stopped taking photos and let what I saw take hold and be committed to memory. It was the same way with the waterfalls. Watching the water move was the same as the whale with the idea that a structure so powerful could move so smoothly.

Iceland was one of the most beautiful and intoxicating places that I could have ever been to. We rode ATVs through land covered by lava, then walked on a beach with pieces of a glacier coming loose and floating to shore. We chased a seal through a pool, went to a geothermal plant, explored a greenhouse that had tomatoes growing from a ceiling, and met Icelandic horses that were just as sassy with us as we were to each other. Every single moment was breathtaking. Before I left for Iceland, I didn't know anything more than just a trip scheduled out on a piece of paper. Now? Now I know at least 20 more people with similar interests and have a wealth of experiences that I could not have gotten anywhere else.

Sarah Vick
Class of 2019
An AU Student’s Story

The qualities that make a successful student are the same that make a successful runner. The achievement of excellence involves three key pieces: preparing early, trusting your mentors, and focusing on the end goal.

Preparing early ensures that the day that you toe the line for a race, or pick up a pencil for a test, you will be able to perform to the best of your ability. As an athlete, I begin my training three months before the season starts. Every day, I get up early and run and know that if I miss even a day, I am already behind. Being a science major is no different; preparation begins before each class session by reading ahead in the chapter and outlining notes. Reviewing for a test requires daily, dedicated reviews of notes and intense studying weeks ahead. All of the work early is made worth it when you arrive in the classroom confident and ready.

Trusting in your mentor is having faith that they want to help you succeed just as badly as you want to be successful. My coach spends hours planning workouts and developing in-depth race plans. The professors in the biology department work incredibly hard to ensure that each student learns the subject material. Lecture notes, practice problems, and office hours give students the tools to achieve optimal grades in class. When you receive the 4.0 you worked for all semester, your teachers are right there alongside you to celebrate your hard work.

Focusing on the end goal gives meaning and purpose to what seems like a long journey ahead. At the beginning of each season, I set a goal for what I want to accomplish during the season, and when the training gets tough, I am reminded of my goal and continue to push through to achieve it. At the beginning of college, setting goals is important to maintain focus. Whether that goal is to be on the Dean’s List, be accepted to graduate school, or be involved with research, it serves as a driving force to be successful. When the end goal is achieved, it makes all the hard work worth it.

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