Biology is perhaps the most diverse of all disciplines because it includes so many different fields such as genetics, ecology, cell biology, botany, evolutionary biology, molecular biology, zoology, marine biology, microbiology, herpetology, physiology, and many other ‘-ology’s.’ Fortunately, we have a diverse complement of faculty who deliver coursework and research experiences in each of these areas. These courses and research take place not only in our laboratories, but also along the Georgia and South Carolina coasts, and internationally through our study abroad program. By these experiences students at Augusta University are exposed to the true diversity of the field of Biological Sciences. And for those who wish to specialize, students may choose to major in Biology, or in Cell and Molecular Biology, or in Ecology with courses designed for each major. In addition, there are opportunities for these students to become directly involved in faculty-directed research projects ranging from cancer biology to ecology.

Many examples of these projects can be found in these pages, but perhaps most notable is the one that involves the most faculty and students, the Noye’s Cut project. This research, led by Dr. Jessica Reichmuth and funded by the Georgia Department of Natural Resources, is a team effort involving multiple faculty and students who are examining the effects of a man-made channel, the Noye’s cut, on the water quality and the diversity of organisms in this portion of Satilla River estuary. The number of independent research projects at this site is almost limitless, and many students are already getting outstanding research experience through this opportunity.

Diversity and opportunity are the two key elements that make Augusta University’s Department of Biological Sciences a great place for students to obtain their undergraduate degree.
Note from the Chair

Over the past several years we have seen great change in our university, and with this change has come great growth for our department. And this growth has been accompanied by growing pains in the form of an increase in the number of students our faculty teach, advise, and mentor. Yet, our faculty and student have continued to deliver excellence both in quantity and quality. This year our students and faculty made over 30 research presentations national, regional, and local conferences. Moreover, seven of those students received awards for the quality of their work. A book chapter and a research article written by faculty were accepted for publication. Fourteen students have been accepted into graduate and professional programs. Three faculty received awards: Dr. Jennifer Cannon was named the Outstanding Teacher in the College of Science Mathematics; Dr. Cathy Tugmon received the Outstanding Service Awards for the college, and Dr. Soma Mukhopadhyay received the Faculty Choice Awards from the Student Educational Enrichment Program in the Medical College of Georgia. Notably, all of these achievements were in addition to the increased teaching load carried by our faculty in response to our growth.

Make no mistake about it, growth in our program is a good problem to have! We are being recognized as an outstanding place to pursue an undergraduate science degree, especially by students interested in pursuing an advanced degree in one of the health sciences. And our needs have not gone unnoticed by our administration. As a result, we will be welcoming several new faculty members to our department in the next academic year. We look forward to mentoring these new faculty members to adopt the same student-centered focus that is the chief characteristic of our current faculty. It is this student-centered nature that is responsible for the many examples of excellent achievement within this newsletter.

Dr. Richard Griner
Department of Biological Sciences Chair
Augusta University
Student Research Presentations
INTERNATIONAL /NATIONAL MEETINGS

2016 Experimental Biology Meeting
San Diego, CA
Perfluorooctanoic Acid Reduces Viability and Decreases Expression of PPARα and ERα mRNA in MCF-7 Human Breast Cancer Cells **
A. Smith and J. Cannon

The Wildlife Society 22nd Annual Conference
Manitoba, Canada
Handling and Marking Techniques of Squirrel Tree Frogs (Hyla squirella) as Part of a Mark-Recapture Study **
L. Gordon, J. Heim, S. Gregory, and R. Cromer

2015 American Pancreatic Association Meeting
San Diego, CA
RCAD is a Key Post-Translational Modification for the Proper Sorting of Digestive Enzymes and the secretory Function of the Exocrine Pancreas ♦
C. Miller, T. Patton, Y. Cai, H. Li, and M. Sabbatini

Coastal and Estuarine Research Federation
Portland, OR
Mud and Microbes: Genetic determination of soil microbial populations in the Satilla River Estuary **
C. Bates, A. Kambouris, C. Tran, and J.M. Reichmuth

Fiddler crabs and climate change: Will they regenerate limbs as the ocean acidifies **
S.K. Gregory and J. M. Reichmuth

Fiddlin’ with Roundup: Fiddler crab behavioral response to the active ingredient in a common herbicide **
A. Outhwaite, K. Gill, and J.M. Reichmuth

The Noyes Cut “Shuttle:” Possible redistribution of fish assemblages within the Satilla River Estuary **
J. M. Reichmuth, E. Neff, J. Blake Joiner, and B. Saul

Symbol Key
♦ Oral Presentation
** Poster Presentation
★ Award Winner
❖ Presented at Phi Kappa Phi Conference
◎ Presented at CURS Brown Bag Seminar Series
✔ Georgia Collegiate Honors Council Meeting
REGIONAL MEETINGS

Southern Regional Honors Council Conference
Epidermal growth factor mediates di-n-octyl-phthalate-induced hepatocyte proliferation ♦ ★ ★
S. Buckner and M. Sabbatini

Southeastern Regional Yeast Meeting
Tuscaloosa, AL
Investigating the effects of DNA damaging agents on survival in HOB1 knockout strains of Schizosaccharomyces pombe ★ ★
N. Hashmi and A. Abdulovic-Cui

Joint Meeting of The Wildlife Society and The Southeastern Association of Fish and Wildlife Agencies
Asheville, NC
Evaluating the Effects of Commercial Scent Attractants on Mammal Behavior and Populations at Cowden Plantation, Jackson, SC ♦
Gill, K., B. Minter, V. West, E. Numfor, and B. Saul

A Preliminary Investigation into Fish Community Dynamics of Three Barrier Islands in the South Atlantic Bight. **
K. Jonske, C. Nestell, and B. Saul

Tri-Beta Regional and 77th Annual Association of Southeastern Biologists Combined Meeting
Concord, NC
p65fl/fl/LysMCre transgenic mouse model shows altered NF-κB signaling in macrophages ★
S. Howard, E. Oza, A. Talkad and J. Bradford

Southeastern Estuarine Research Society Spring Meeting
Beaufort, SC
Fiddler crabs and the changing ocean: Can ocean acidification inhibit limb regeneration ♦
S.K. Gregory and J. M. Reichmuth

Determination of soil microbial populations in the Satilla River Estuary using 16S rRNA next-gene sequencing ♦★
A. Kambouris, C. Tran, J. M. Reichmuth, and C. Bates

Fish Assemblages in Brunsen Creek on St. Catherines Island, GA. **
M. Sapp, C. Ong, J. McKittrick, J. Moak, and B. Saul

STATE MEETINGS

Georgia American Fisheries Society Conference
Columbus, GA
Mercury accumulation and endocrine disruption in largemouth bass in the Rae’s Creek watershed, Augusta, GA **
J. Sayre and D. Wear

Georgia Undergraduate Research Conference
Statesboro, GA
Understanding the Molecular Basis of Human Evolution and its use in Personalized Health Care **
A. Judy, N. Sanyal, N. Mongan, and S. Mukhopadhyay
Student Research Presentations

LOCAL MEETINGS

**CURS Brown Bag Seminar**
AC3/AC-associated protein 1 complex regulates actin filament dynamics in pancreatic cancer cells ❖❖
A. Newsom and M. Sabbatini

**CURS Summer Scholars Program Poster Session**
AC3 has an inhibitory effect on cell cycle and enhances staurosporine-induced apoptosis in pancreatic cancer R. Smads, C. Dains-McGah ee, E. Friedman, S. Graves, and M. Sabbatini

Conservation Genetics of the Dixie Mountain Breadroot (*Pediomelum piedmontanum*), a rare and endangered legume from the Piedmont
J. Padgett, L. Buckley, A. Colbert, C. Bates, and S. Bennetts

17th Annual Phi Kappa Phi Student Research and Fine Arts Conference

HPA Activation: A Comparison between Shelter and Companion Dogs**
K. Alexander, S. McLarnon, A. White, and R. Cromer

The Effects of Heavy Noise Levels on the Production of Corticosterone in *Hyla squirella* **
B. Harris and R. Cromer

The effects of perfluorooctanoic acid on expression of estrogen receptor alpha mRNA and protein in MCF-7 Cells ***
L. Gillen, R. Peloquin, A. Smith and J. Cannon

Effectors implicated in the AC1 inhibitory effect on cell proliferation in pancreatic cancer cells ❖
V. Medepalli and M. Sabbatini

Ufmylation maintains the proper ER homeostasis of pancreas form alcoholic rodents ❖
C. Miller and M. Sabbatini

Evaluating the Effects of Mint Oil Scents on Feral Hog Behavior and Populations at Cowden Plantation, Jackson, SC **
V. West, B. Minter, A. Hunter, K. Gill, and B. Saul

Investigating the role of Hob1 in Translesion Synthesis in *Schizosaccharomyces pombe* **
B. Walton and A. Abdulovic-Cui

Exploring the function of Hob1 in non-homologous end joiningrepair pathway in *Schizosaccharomyces pombe* **
S. Ozturk and A. Abdulovic-Cui

Integration of the Study of Molecular Evolution for Better Understanding the Human Body **
A. Judy, N. Sanyal, and S. Mukhopadhyay

Graduate and Professional School Acceptances

**M.D./Ph.D Programs**
Adrienne Kambouris – University of Maryland

**Medical School**
Precious Anyaoha – Morehouse School of Medicine
Kevan Khksarfar d – Augusta University
Tyler Graves - Via College of Osteopathic Medicine
Rachel Latremouille - Augusta University

**Dental School**
Joseph Nasworthy – Augusta University

**Physician Assistant Program**
Krista Benson – Augusta University

**Occupational Therapy Program**
Amanda Rogers - Augusta University
Samantha Anchor - Augusta University

**Pharmacy School**
Aaron Chase - University of Georgia
Minna Hassan - University of Georgia
Kendyl Wood - University of Georgia

**Graduate School**
Emily Friedman – MS Biology, Georgia College
Wendy Lumm - MS Public Health, Augusta University
Chanel Young – MS Environmental Health, Augusta University
Biological Sciences Honor Convocation Awardees

Academic Excellence Award in Biological Sciences
This award recognizes excellence and achievement in academic performance for the highest science GPA.

Sarai Hacker Graves
Sarai came to us from the Air Force and a career in linguistics. She graduated with a Biology degree in the Fall with a science GPA of a perfect 4.0. She has conducted separate undergraduate research projects with Drs. Sabbatini and Saul, on laboratory and field ecology topics. She has presented her work at local and regional meetings. Sarai is a recent newlywed, and is currently working as a Certified Nursing Assistant. She plans to enter a Physician Assistant program in 2016 or 2017 near her husband’s medical school.

Emil K. Urban Student Research Awards
These awards are named for Emil 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 two 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 and one is given to a student whose research is laboratory-based.

Laboratory Research – Shelby Buckner
Shelby is an Honors Program student majoring in Cell and Molecular Biology. She has conducted undergraduate research with Drs. Cathy Tugmon and Eugenia Sabbatini since 2013. She presented her work at the PKP Research Conference, the Augusta University CURS Brown Bag Seminar, and at several honors conferences. She plans to enter the AU PhD/MD program in 2016 or 2017.

Laboratory Research – Sarah Ozturk
Sarah is an Honors Program student majoring in Cell and Molecular Biology. She has conducted undergraduate research with Dr. Amy Abdulovic-Cui since 2014. She has presented her work at the PKP Research Conference, the Augusta University CURS Brown Bag Seminar, and at the Southeastern Regional Yeast Meeting. She plans to enter the Dental School at Augusta University in 2017.

Field Research – Erik Neff
Erik graduated in the Fall with a degree in Ecology. Working with Dr. Reichmuth, Erik’s research has wide-ranging applications within the field of marine ecology and has involved water quality, fiddler crabs, and fishes. He has presented his work all levels: 1) locally at the AU PKP Student Research and Fine Arts Conference; 2) regionally at the Georgia Academy of Sciences and the Southeastern Estuarine Research Society; and 3) nationally at the Coastal Estuarine Research Federation. He was recognized for his exemplary work with several research awards and these meetings. He is currently exploring different graduate programs in the southeast.

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.

Laurie Coleman
Laurie has served as a peer mentor for supplemental instruction for Biology 1107 & 1108 and as a laboratory assistant for several different biology courses. She helped manage our laboratories and the aquarium room. Laurie was professional, organized, independent, and always ready to help with additional tasks if asked (all while taking full loads each semester and raising two young boys while her husband was deployed).

Biological Sciences Outstanding Senior Award
Each year 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

Adrienne Kambouris
Adrienne came to us as a 10 year veteran of the U.S. Army and completed two tours in Iraq. She manages to juggle a very active life, including her family and church, as well as tutoring for the Departments of Biological Sciences and Chemistry. She volunteers for a student-run medical clinic, and participates in two undergraduate research projects. These experiences have taught her to think critically and analytically. She recently won the Best Undergraduate Oral Presentation Award at the Spring Southeastern Estuarine Research Society Meeting at USC-Bluffton. Adrienne's time-management skills border on the superhuman. Adrienne will begin medical school in the Fall.
TriBeta 2015-2016 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 GRU 14 Biology majors were inducted into the Kappa Kappa Chapter of Tri Beta during a ceremony on March 31st in the JSAC Ballroom. Congratulations!

Brittany Blocker           Ariel Newsom
Jason Brown                Ozee Onwumere
Lucy Chavez               Harnish Trivedi
Nicole Haibach           David Urizar
Selma Hashimi           Emily Vega
Kavin Vrid                  Valerie West
Alicia Hudson              Nicholas LaBon
Kavin Vrid                 Brittany White
Valerie West                Davia Williams

Professional Scholars Program

As the 2015---2016 academic year comes to an end, reflection on the past year shows it has been eventful for Professional Scholars students. Current students embraced and integrated into campus life through involvement in academics, philanthropic events, and research opportunities. We offer a "big shout out" to students who represented the program in 1828Ambassadors, Biology Club, MAPS, Pre-Dental Club, Dental College of Georgia Impressions Program, Igniting the Dream of Medicine Conference, CURS Brown Bag Seminars and National AIDS Week. Many thanks are in order to faculty members on the Summerville and Health Sciences campuses who have mentored students through participation in research ranging from in topics such as breast cancer to Wnt signaling in zebra fish. Students are not slowing down over the summer; many are partnering with faculty to conduct research, continuing current research, volunteering in the CSRA and home communities, shadowing physicians, and preparing for the MCAT. Finally, in the upcoming year, we look forward to welcoming and mentoring the forth cohort of Professional Scholars students as they start their journey toward a career in healthcare.

Award Winning Physiology Video

Emilee Friedman and Jennie Wiggins receive an award from the American Physiological Society. The students entered the Phantastic Physiology Voyage: "Function Follows Form" video contest as part of Dr. Cannon’s Endocrinology course in which they were enrolled last fall. These students won Best Video as well as Viewer’s Choice Award from undergraduate and graduate student applicants from around the country. Their video, entitled “Hyperthyroidism: Not As Grace As it Seems” can be found at https://www.youtube.com/watch?v=1MRQ4ckB13Q&feature=youtu.be
Alumni Accolades

Jag20 Alumni Award - Scarlett Timmons - BS, Augusta University 2010
Dr. Timmons graduated in 2010 as the Valedictorian of her class after only three years as a student here with a B.S. in Biology. She was accepted into the College of Veterinary Medicine at the University of Georgia, and in 2014 she graduated with her Doctor of Veterinary Medicine. She returned to Augusta in 2014 and opened All God’s Creatures Veterinary Hospital in 2015. She is a local leader in the veterinary field and a community advocate for animal rescue and their humane care.

Faculty Awards, Grants, and Presentations

Awards
Dr. Jennifer Cannon: Outstanding Teaching Award for the College of Science and Mathematics, AU
Dr. Cathy Tugmon: Outstanding Service Award for the College of Science and Mathematics, AU
Dr. Soma Mukhopadhyay: Student Educational Enrichment Program Faculty Choice Award for the Medical College, AU

Center for Undergraduate Research (CURS) Summer Scholars Program:
- Dr. Jennifer Bradford with student: Natasha Venugopal
  The role of tumor associated macrophage NF-kappaB signaling in GBM stem cells

- Dr. Eugenia Sabbatini with students: Allison Pruitt, Cecilia Thomas, & Anthony Micklon
  Effects of the di-n-octylphthalate on cell proliferation and differentiation of murine hepatocytes, and its implication for liver function.

Grants
Dr. Soma Mukhopadhyay – Travel & Tuition Funds
National Institute of Health Library of Medicine Georgia Biomedical Informatics Course

A Holistic Assessment of Noyes Cut on the Satilla River Estuary
Drs. J. Reichmuth, A.L. Abdulovic-Cui, C. Bates, S. Bennetts, B. Saul with A.L. Mathews and R. Cohen (GA Southern)
2016-2017 Georgia Department of Natural Resources Coastal Incentive Grant (Funded for 2nd year).

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

Presentations
Dr. Charlotte Christy – Better or worse? A longitudinal assessment of variation in student performance in freshman Biology courses.
Georgia Academy of Science. Barnesville, GA. April, 2016

Dr. Brandon Cromer – Tree identification and aging to Girl Scout Troup 5775. North Augusta, SC. October, 2015


Dr. Cathy Tugmon - --- Southern Africa: The animals, conservation, private game reserves and lodges off the electrical grid -- Sierra Club Savannah River Group, Augusta, GA March 2016.

Publications

Dr. Soma Mukhopadhyay - MedCrave Online Journal: Anatomy & Physiology - The Study of Molecular Evidences for Human Evolution, Gene Flow, Genetic Isolation, Interbreeding and Their Significance in the Human Physiology.
http://medcraveonline.com/MOJAP/MOJAP-02-00039.pdf
In fall of 2013 a friend of mine knew I was interested in getting involved with research and he introduced me to Dr. Abdulovic-Cui. During our first meeting Dr. Abdulovic-Cui welcomed me into her office and explained the scope of her research project. I was so impressed with how she willingly accepted me into her research group and I was thrilled to contribute to this project. This initial meeting translated into a two year experience of studying the protein hob1 in the DNA repair pathway process known as non-homologous end joining in fission yeast, *Schizosaccharomyces pombe*.

The first day in research I remember having trembling hands as I tried to pipette reagents cautiously into microcentrifuge tubes. It seemed to all look so easy when others did this! I will say, the first weeks were a test of patience as I had to repeat protocols before I made any progress. It wasn’t until the summer of 2014 where I felt that I was starting to get the hang of lab techniques and I stopped focusing on “what” I was doing and rather on “why” I was doing it – a pivotal point where I started to feel like a scientist!

Our research group had the unique opportunity to collaborate with a research group at the Augusta University Cancer Center. We discussed current research projects and explored scientific papers that challenged me to think inquisitively, as a scientist should. In fact, I was able to complete a research project with our collaborative group in the summer of 2015 that studied a mammalian homolog of the yeast protein in the same DNA repair pathway.

My research afforded me the opportunity to present at the Brown Bag Series (2015), the Southeastern Regional Yeast Meeting (2015), and twice at the PKP Research Conference (2015 & 2016.) I would have never imagined it in 2013, when I first committed to do undergraduate research, but this research and hard work allowed me to win the Emil K. Urban Student Research Award for Laboratory Research. Thinking back upon my journey, I am in awe. I thought I would learn a few research skills, complete my honors thesis, and present once or twice. To say that I solely learned research specific techniques such as pipetting or colony counting from this experience would be shy of the truth. Under Dr. Abdulovic-Cui’s mentorship, I also learned personal skills such as time management, how to professionally communicate, and even when to ask for help. As I finish my undergraduate chapter, I can truly say that my research experience polished me and translated into innumerable opportunities.

Sarah Ozturk
AU Class of 2016
Biology Club Corner

The Biology Club is an organization the aims to fortify the passion for biological sciences among its members. The club organizes volunteer opportunities, plant sales, speaker events, and even social gatherings. The cohort of students in this group support one another by mentioning job shadowing opportunities, upcoming campus events, and any other event that promotes volunteerism. On and off campus, members of this club often share advice and tips about classes and swap textbooks. The Biology Club holds bimonthly meetings as well as special events throughout both semesters.

In the fall semester, the Biology Club members participated in plant potting and held a plant sale fundraiser on campus. Items sold ranged from succulents and flowering plants to herbs and vegetables. Additionally, some students volunteered as science fair judges at schools in the Augusta area. Beginning in spring of 2015, the Biology Club began getting involved with the Harrisburg Project and has continued to keep involvement with this organization. While there, volunteers cleaned overgrown plants and helped establish garden beds to support sustainable gardening. Members plan to continue volunteering throughout the summertime with this local project. In the spring, the organization volunteered at Phinizy Swamp’s Earth Day celebration. At this event, the members educated children on the harmful effects of UV light and in correlation with this lesson, provided children with a crafty opportunity to make a bracelet strung with UV sensitive beads that change color upon exposure to light. This was a neat way to promote scientific education as well as UV ray awareness in time for summer.

MAPS (Minority Association of Pre-Med Students)

MAPS is a sister organization to the SNMA (Student National Medical Association) at AU’s Medical College of Georgia campus. While membership is open to all undergraduate students interested in the health professions, MAPS aims to increase diversity in the medical field. The organization facilitates academic enrichment and professional development opportunities for students as well as raises awareness of the health professions in the community, especially among underrepresented populations.

MAPS meetings provide students an opportunity to network with MCG representatives and receive information pertaining to the application process, student life, and undergraduate opportunities on the Health Sciences campus. In addition, they provide students with volunteer opportunities. The 2015-2016 academic year was a busy one for AU’s MAPS Chapter. Student members volunteered at MCG’s Igniting the Dream Medical Conference, Downtown Donut Dozen, MedWar, as well as free health clinics offered to the community. The organization collaborated with the Junior Medical League at MCG and volunteered once a month at the Boys and Girls Club by conducting science experiments with the students to help them develop a love for science. In addition, we provided students with the opportunity to volunteer as medical scribes at the Equality and Latina Clinic in downtown Augusta.

This year, MAPS saw the establishment of a MEDLIFE chapter under its umbrella. MEDLIFE works to deliver healthcare and education to low-income communities in Latin America, Africa, and Asia. Several members of MEDLIFE will be participating in volunteer trips this summer. During the spring semester, MAPS created a mentoring program for its current members with medical school students at MCG. The program was kicked off with a mixer at MCG, where students were able to meet and mingle with their mentors. MAPS is currently working with Kaplan to offer students discounts on MCAT prep classes and testing materials and is working to mainstream job shadowing opportunities.

Study Abroad Experience

Ecology students tend to be “big picture” kind of people, and I’ve always been a firm believer in the benefits of travel. Experiencing a different environment broadens perspective in so many valuable ways- culturally, intellectually, and of course, it’s just fun! So when I heard that Augusta University was offering an opportunity to “study away” for two weeks in beautiful Alaska, I jumped at the chance to mark it off of my bucket list. Many areas, if not most, of Alaska are virtually untouched by humans, in comparison to the “Lower 48”. Experiencing pristine Alaska first-hand provides an excellent opportunity for ecology students. Here they can observe the cause and effect relationships within nature so important to ecological studies, as well as take the time to consider our own place as humans within these systems.

At once both separate and yet still a part of the US: the state of Alaska consists of millions of acres of land (approximately 663,300 square miles), featuring rugged mountains, glaciers, tundra, and soaring skies as well as temperate rainforests. Our group visited five cities in the southeastern region of Alaska, which doesn’t seem like an expansive area at first glance. However, Alaska is just a bit bigger than one-fifth of the continental US, or twice the size of Texas.
Our first stop in Alaska was the beautiful city of Juneau. According to local residents, there are only three ways to get there: via plane, boat, or birth canal! This is because there are no roads through the high mountains that surround the city. We had perfect weather for hiking around the city, which enabled us to enjoy the lush ferns and greenery of early springtime. We visited the Macaulay Salmon Hatchery, where we learned about successful strategies to increase sustainable salmon fishing, unique to the state of Alaska. Moose, bear, seals, bald eagles and ravens, my personal favorite, are among the common wildlife seen in and near Juneau. Interestingly, the dandelions (T. serratifolium) in Juneau are twice as big as those found in the Lower 48, and make quite a show since all of them bloom simultaneously. We experienced a guided nature hike through the woods where we learned about the native flora of Alaska; this culminated at the peak of the hike with a great view of a glacier and a waterfall. Later, we went out on a small boat for whale watching, and were lucky to view several humpback whales, which migrate from tropical waters to polar waters each spring to feed.

Seward, Alaska is a small fishing and boating town located on a fjord, surrounded by high mountains. Here, we took an amazing day-long boat trip, where we saw a variety of wildlife, including puffins, sea otters, and even a colony of walruses, against a postcard-perfect back drop of mountains and glaciers. We spent some time at the Alaska Sealife Center, an aquarium which teaches visitors about human impact on local wildlife, funded by settlement monies from the Exxon Valdez oil spill.

Our next stop of Talkeetna was just as interesting as our previous two. Here we sampled fiddlehead pizza, featuring the spring sprouts of the Ostrich fern, as well as reindeer sausage. The Walter Harper Talkeetna Ranger Center is located in downtown Talkeetna. All climbers attempting to climb Denali must check in, go through orientation and get permits here, and we saw many climbers, with trucks stacked full of gear, coming through town.

In Anchorage, we visited the Native Heritage Center to learn about the traditions of the native Alaskans, and how they adapted to an extreme environment with a variety of hunting techniques. At the Anchorage Museum, we learned some history of Alaska, such as how Russian and European pioneers survived the challenging ecosystem, details of the oil based economy of Alaska, and modern politics. Here we met another component of the Alaskan ecosystem: Culiseta alaskinensis, commonly known as the snow mosquito. The larvae of these giant insects feed on algae in the spring, and then swarm as the snow melts. They are large enough to cast a shadow and make an audible “squish” sound when slapped.

A good example of sustainable tourism can be seen in the Denali National Park and Preserve, which consists of 6 million acres of untouched subarctic wilderness. Believe it or not, there is only one road that runs through the park. The practice of stopping visitor traffic at the fourteenth mile marker on this road assures a serious reduction in wear and tear on the park, since the 400,000 people who visit the park each year must stop there and walk, or ride a park-approved tour bus which follows strict guidelines to reduce any human impact on wildlife. Restrooms in the form of vault toilets have little impact to the ecosystem and have wildlife awareness posters posted visibly to keep any unwanted surprise visitors at bay. Recycling is separated and handled on the tour busses, so no trash makes its way into the park. Even the employees of Denali are only allowed to drive on the single road once per week to renew supplies or visit the outside world. Denali also uses sustainable practices in their visitor center, using only the solar energy harvested during the long days of summer to power it during heaviest visitor traffic. Here, we saw bears, moose, porcupine, caribou, Daal sheep, and even the big mountain itself, Denali.

Overall, each day of my trip held something jaw-droppingly beautiful. I left with the intention of returning one day with my family, so they can share in one of the most beautiful places on earth.

“When we contemplate the whole globe as one great dewdrop, striped and dotted with continents and islands, flying through space with other stars all singing and shining together as one, the whole universe appears as an infinite storm of beauty.” John Muir, Travels in Alaska.
An AU Student’s Story

After serving in the Army for ten years, I decided that it was time to pursue my dream of medicine. Obtaining an undergraduate degree was merely a prerequisite, and it would be incredibly simple. How hard could it be?

I remember sitting in 1107 in the summer of 2013, wondering what I had gotten myself into. I never had difficulty as a student, but I hadn't sat in a classroom since 2002... and when I began to receive the grades from our daily quizzes, I knew that I was not the student that I wanted to be. So I faced a choice: I could apply the same effort which garnered me success in the past, or I could grow, develop, and become a student that could earn her way into medical school. I chose the latter.

My time at Augusta University has been a period of exponential growth. Each semester was more challenging than the previous, some of it by my own doing. Between being a double major, extracurricular activities, and participating in research projects, I didn’t shy away from what the department had to offer.

But what made it worthwhile, what made it possible, were the professors that supported me along the way. Throughout my journey, each member of the faculty thankfully placed an emphasis on learning – not memorization. We were required to apply what we knew, understand complex concepts, and think past what we were taught. There is no way to make it through Genetics, Microbiology, or any Biology course, without this mindset. The faculty of the Department of Biological Sciences is driven toward providing a quality education for all students.

So to the professors: keep pushing us. Keep creating the environment which causes expression of the genes for success. Students won’t be happy; we probably won’t thank you for it. But we will be well prepared. And for the students: listen to what the professors are telling you. It’s hard – I did my fair share of complaining. But in the end, you’re better for it. I feel confident moving into the next phase of my education, having completed this difficult but rewarding prerequisite.

Adrienne Kambouris
AU Class of 2016