

# R & I REVIEW

Issue 2 • Spring 2020



Katie Serba, a Marine Science-Biology '20, was a recipient of the Undergraduate Research and Inquiry grant for the 2019-2020 school year. The title of her project was "The Visual Pigments of Filter-Feeding Elasmobranchs and their Role in Foraging Ecology." She was studying the vision of filter-feeding sharks (the Basking, Megamouth and Whale Shark) using their genes to help determine where they are living and foraging within the water column. Her involvement in the project stemmed from a common interest in the vision of sharks that her mentor, Dr. Jeffrey Fasick, and she shared in his molecular genetics course. They were very curious to see where this research could go and decided to expand it beyond the classroom.



Katie Serba '20

# Opportunities in OURI

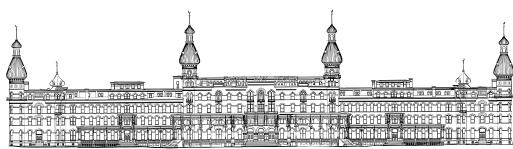


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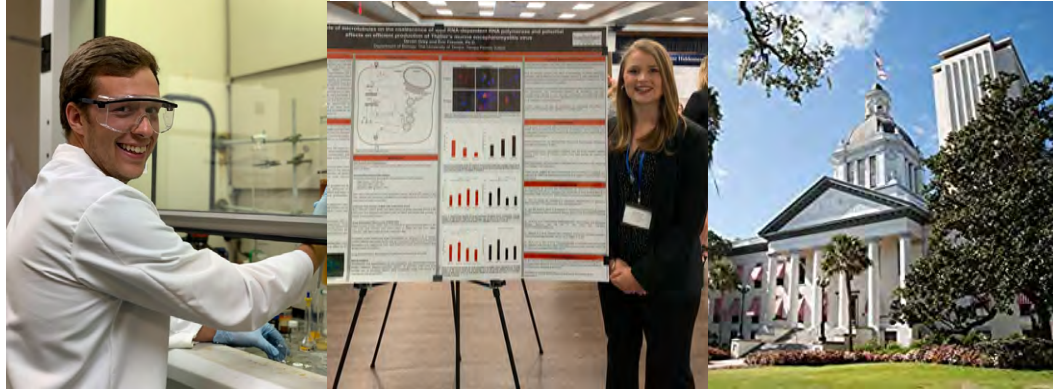
- **Turn Your Ideas Into Reality**  
Research opportunities at UT allow students to make important contributions to their fields while delving into subjects about which they are passionate.
- **Develop Key Skills**  
Students who are involved in research develop outstanding critical thinking skills, become better communicators and learn to work collaboratively. These are all important skills sought by employers and graduate schools.  
The Office of Undergraduate Research and Inquiry funds faculty-mentored student research and creative inquiry.
- **Undergraduate Research and Inquiry Grants**  
Undergraduate Research and Inquiry Grants support students and faculty engaged in a mentored research project. The goal of this grant is to provide students with research or creative inquiry opportunities. These grants provide \$2,000 in supplies or travel funds and \$1,000 stipends for the faculty mentor and student. A faculty mentor can have up to three research students on this grant.
- **Summer Undergraduate Research Fellowships**  
Summer Undergraduate Research Fellowships (SURF) program supports students and faculty engaged in a mentored research project over the summer. Working on research during the summer allows for the student and faculty to focus intensively on their topics. Students will be part of a community of researchers and will present their research to the University community in the fall semester. These grants provide \$2,000 in supplies or travel funds, a \$1,000 stipend for the faculty mentor and a \$3,500 stipend for the student. Students are also provided housing if they choose to live on campus.

For more information, see [www.ut.edu/inquiry/funding/](http://www.ut.edu/inquiry/funding/) or contact [OURI@ut.edu](mailto:OURI@ut.edu).





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## Student Research Thrives at UT Despite COVID-19

*By Eric Freundt, director of the Office of Undergraduate Research and Inquiry*

In the 2019-2020 academic year, 68 students participated in UT-funded projects. These included the Undergraduate Research and Inquiry grants, which support research during the academic year, the Summer Undergraduate Research Fellowship (SURF), and the Applied Learning Experience (ALEX) multidisciplinary internship program. Additionally, approximately 2,025 students participated in inquiry-based courses, which allow students to have an opportunity to conduct research or creative inquiry as part of their coursework and strengthen important Spartan Ready® competencies of critical thinking and written and oral communication.

The COVID-19 pandemic forced students and their faculty mentors to adjust their projects so that they could be done remotely. Despite the challenges posed by this limitation, the vast majority of students were able to continue working with their faculty mentors throughout the pandemic and are now preparing manuscripts and conference presentations to share their results with the wider community.

As a result of these programs, almost half of UT graduating seniors in May of 2020 had participated in at least one inquiry-based course or had independent research experience. These experiences engage students in generation of new knowledge and foster a great appreciation for both the challenges and thrill of discovery. Moreover, students also developed new passions and refined their career trajectories through these experiences.

In this issue, we highlight some of the experiences of UT students who participated in research and creative inquiry over the past year. I hope that you enjoy learning about what they have done and celebrate their accomplishments.





# Good Chemistry

*Published: Feb. 6, 2020*

A typical day in the lab for Wyatt Larrinaga '21 involves wearing a white lab coat and protective goggles, doing lots of mixing and stirring, and utilizing pipettes and round-bottom flasks.

"I definitely think this research experience has pushed me to be more of a progressive student," said Wyatt Larrinaga '21.

Some days he even watches liquid drip, which Larrinaga said is a running joke in the lab.

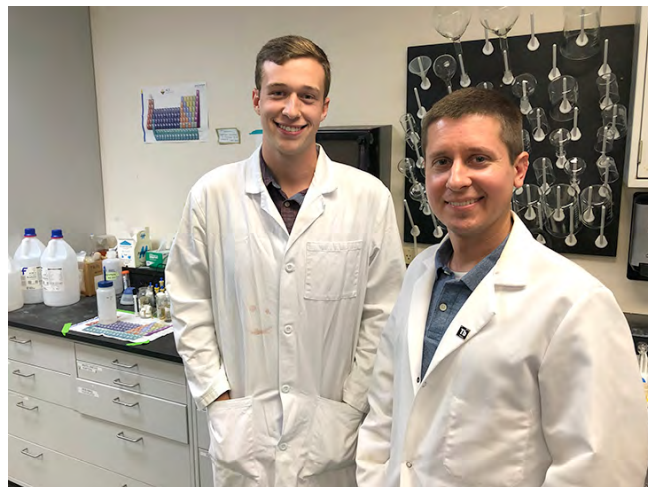
But it's true. He spends hours collecting liquid that drips into test tubes and uses different analytical techniques to determine the composition of the liquid, including running samples through a Nuclear Magnetic Resonance (NMR) instrument, which exposes the sample to a magnetic field, allowing him to identify the types of molecules that he is trying to synthesize.

Larrinaga has been working with Eric Werner, associate professor of chemistry and chair of the Department of Chemistry, Biochemistry and Physics, since Fall 2018. Werner is an inorganic chemist who works with lanthanides, which are a group of metallic chemical elements that are part of a larger group of metals known as the rare earth elements. Werner's research has focused on the different applications and properties of the lanthanides, such as luminescence.

"A number of lanthanides will display bright red or green. They'll glow under certain conditions, which makes them useful for cellphone screens and other optical devices and biomedical sensors," Werner said. "It turns out that lanthanides are important in many areas of modern technology – phones, car batteries and in alternative energy applications."

Mining lanthanides from raw sources is challenging, and they are difficult to recycle out of manufactured products. For the last five years, Werner has focused his research on developing better ways to accomplish both.

"There is still no great method for highly efficient, selective lanthanide extraction," Werner said. "People have been trying for many years, but it's still an unsolved problem. So I became interested. There are all these unique applications, but you need the metal first to do the application."



Larrinaga, left, has been working with Eric Werner, associate professor of chemistry and chair of the Department of Chemistry, Biochemistry and Physics, since Fall 2018.





Werner and his students design and synthesize the extractant molecules (called ligands) and test them for selective metal extraction using a variety of instrumentation within the department. There is also an important collaborative dimension to the project, with the research team working with an organic chemist, Shannon Biros of Grand Valley State University, and her students as the groups explore new ligand designs and syntheses. This productive partnership across institutions exposes students to the collaborative nature of research, even beyond UT, and has led to some exciting results.

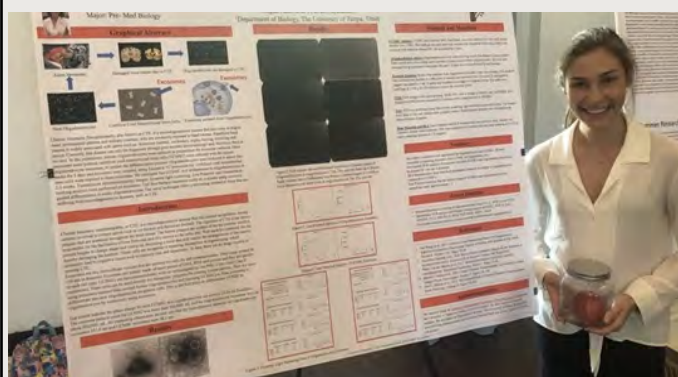
Larrinaga wanted to get involved with research from the beginning of his UT career, but the opportunity hadn't arisen organically. His student lab mentor, Nichole Laggan '18, had told him all about the research she was doing on a deadly frog fungus, which made him all the more jealous. Laggan, who was practically living in the Cass science building between being a lab mentor, doing research and attending class, knew Werner from seeing him around the building. She knew all of Werner's research students were graduating, "so he was empty nesting," Larrinaga recalled. So Laggan reached out.

"One student was writing a rec letter for another, pretty much," Werner said, still with a bit of surprise in his voice. "I'd never had that happen before. I'd never had a student recommending a student. I thought that was different." It was a good fit. In Larrinaga's sophomore year, he began working in Werner's lab. "I've always enjoyed school very much. Coming into college I had the idea of wanting to go to grad school and be a professor," said Larrinaga, a chemistry major with minor in biology. "But I was getting to the point where I wanted to learn more than the basic things in class."

Larrinaga has received independent study credit for each semester in Werner's lab, and this semester it will count toward his required capstone course for the American Chemical Society (ACS)-certified tract of his bachelor's in chemistry.

"Looking back at myself freshman year, just reflecting on who I was, I was just like typical student. I'd go to class but didn't really get much from it. Like I would go take a test, do the homework, you know, but ever since I started doing research I feel like I've become a better student," Larrinaga said. "I try and understand the material being presented in my classes on a more thorough level. I don't see myself as just taking information at face value. I want to know more of the why behind it," he said. "I just don't accept a theory. I want to understand the theory more so. I definitely think this research experience has pushed me to be more of a progressive student."

# O pportunities in U R I



Megan Ashworth received a 2019 SURF from the Office of Undergraduate Research and Inquiry. Her project title was "Exosome Guided Differentiation of Unbilical Cord Mesenchymal Stem Cells into Human Oligodendrocytes to Treat Chronic Traumatic Encephalopathy (CTE)." Megan chose this project because of her love for Sports Medicine.

She grew up playing softball and soccer, but grew to be an avid admirer of professional ice hockey, American football and baseball. As young as 7 years old she found her role models in these sports. All of these sports are vulnerable to head trauma, concussions, and CTE. Megan's project, as she worked with her faculty advisor, Dr. Pavan Rajanahalli, discusses that she believes "that stem cells are the best possible method to treat CTE." Megan is a Biology major and a leadership minor, who graduated in May 2020.



In the summer of 2019 Larrinaga received a Summer Undergraduate Research Fellowship (SURF) in addition to a Dreyfus Fellowship award, which provided additional funding for his research. As a member of the Student Members of the ACS, he attended the national ACS conference in Orlando in Spring 2019. This year he'll attend that conference in Philadelphia and will present on his research. In Fall 2019, he was the lead presenter on a poster at a regional ACS conference in Savannah, GA.

Werner sees several benefits to faculty-led research. "We are teaching them through our research. We are teaching them how to think scientifically and how to apply the things they've heard all about in their classes but now actually are doing," Werner said. "(Students) can take it only so far in a traditional lecture or lab course. To bring the experience full circle they must apply this foundation and design projects, fail at projects, and learn from those mistakes or surprises as they determine what to or what not to pursue. There's no substitute for that."

He said many of his students, like Larrinaga, want to go on to graduate school. Working in his lab is a good test drive for that plan, where independence is encouraged. "They'll know pretty quickly if this is something they are comfortable with. They get a preview of their lives to come," Werner said. "Even if they don't go to grad school, whatever they do they'll have to think and problem solve and come up with their own ideas and communicate those ideas, which they get a lot of opportunities to do through this as well."

Now Wyatt is a senior working on his 20-21 year long project funded by OURI titled "Enhanced Lanthanide Extraction with Tripodal CMPO Ligands." Eric Werner continues to be Wyatt's faculty advisor.

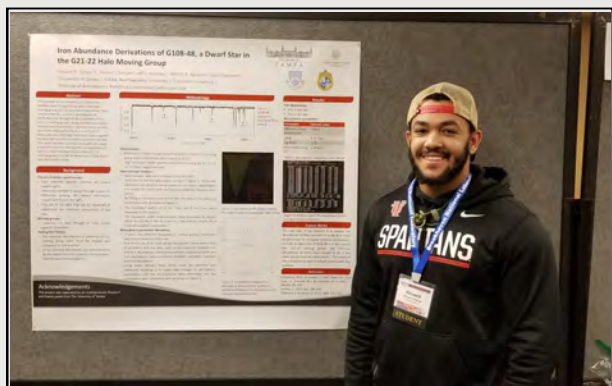


Wyatt Larrinaga has just received a 2020-2021 OURI Year Long Grant to continue his work with Dr. Werner. The title of his new project is "Enhanced Lanthanide Extraction with Tripodal CMPO Ligands."



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# O pportunities in OURI

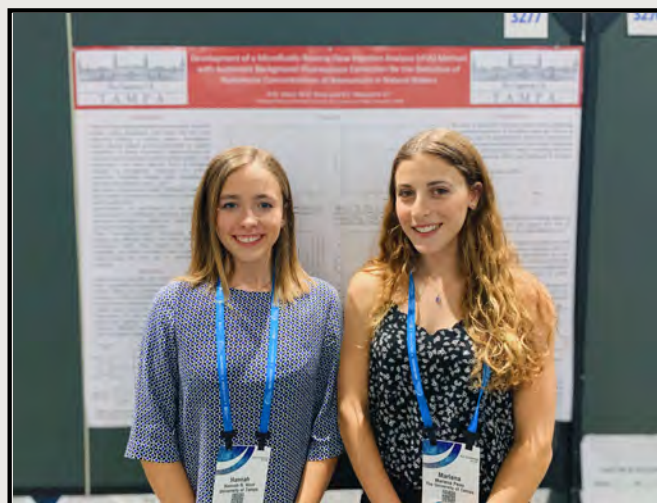


Vincent Clanzy '20, Physics, and Mohammed Mourabit '20, Physics and Biology have been working with Simon Schuler to investigate two categories of stars that are unlike the Sun and whether the compositions of those stars can be derived accurately using standard techniques. Both presented at the 2019 National Society of Black Physicists Meeting in Providence, Rhode Island. Clanzy was awarded Best Undergraduate Poster for Astronomy!

Both students were granted a 2019-2020 Undergraduate Research Grant to work on their project titled "Stellar Astrophysics with Open Clusters."



# O pportunities in OURI



Marlena Penn, who graduated in May 2020, received an Undergraduate Research and Inquiry Student Travel Grant to present at the AGU Ocean Sciences Meeting in San Diego in December 2019. She is seen here with Hannah Hunt '20, in front of their presentation board. Through conversation and observation, they realized that they were some of the very few undergrads at this convention. "We were challenged with some hard questions and those who were out to criticize our work. While it was intimidating, we still belonged and were able to have this experience at such an early start in our careers will give us a huge leg up in the future." Robert Masserini was the faculty advisor for both Marlena and Hannah.





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# Student Presents Linguistics Research in Havana

Rachel Kozikowski '20 received a Summer Undergraduate Research Fellowship (SURF) in 2019. She worked with Andrew DeMil on a project titled "How does online second language teaching compare to a traditional classroom?"

Over Thanksgiving weekend in 2019, Rachel presented in Havana, Cuba, at a conference called the Lingüística (which means linguistics in Spanish). The conference was extremely prestigious, in one of the oldest institutes in Havana; the Institute of Literature and Linguistics. The conference began in the 1700s. Rachel presented to a room of mostly university language professors, and some doctoral students, from all over the world, in Spanish.





# Undergraduate Research Posters at the Capital-Tallahassee, FL

February 9-10, 2020

The inaugural Undergraduate Research Posters at the Capitol was held at the Florida State Capitol Complex in downtown Tallahassee. At this event, up to four undergraduate researchers from each university and college across the state presented their research in a poster format. They also had the opportunity to interact with legislative members from their representative districts. The main mission in hosting this event was to encourage the visibility and viability of undergraduate research, while also providing high-achieving students a space to engage directly in the political process.

Students Rachel Wall '20, Grace Poulos '20, Stephanie Walker '20 and Alexis Garcia '20 represented UT.



Alexis Garcia '20 in her Biology class working on the 2019 SURF project entitled "Acquired Resistance: what is the most effective amphibian vaccine for chytrid?"



Grace Poulos '20 working on her 2019 SURF project titled "An Exploration of the Feminism of Nigerian novelist Chimamanda Adichie."



Above: Rachel Wall presenting her 2019 SURF project in Tallahassee.  
Below: Stephanie Walker (right pictured with Hayley Lasco) on the UT Biology boat- R/V BIOS II.





**9/10 successful  
applicants to  
Florida medical  
schools have  
significant  
research  
experience.\***

*\*Average of all Florida  
medical schools from 2016 and  
2017 MSAR data.*



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**What was your major and what year did you graduate from UT?**

Molecular Biology, 2020

**What have you been doing since graduation?**

Since graduation, I moved across the country and began my PhD program at the University of Alabama at Birmingham in Behavioral Neuroscience.

**Can you describe the research you did while at UT?**

My research at UT focused heavily on understanding viral transmission and visualizing what happens when Theiler's Virus (TMEV) is introduced to cells. My first research project looked at the relationship between TMEV and GBM cancer, attempting to see if TMEV could be used as a model for cancer treatment. The second project attempted to understand viral replication, and how TMEV uses cellular components to replicate within the body. Both projects were completed under the guidance of Eric Freundt.

*"Working with a professor one-on-one and getting to study what you are interested in, is the best feeling in the world. Especially when the experiment actually works!"*

**Do you think your research experience at UT benefited you after graduation? If so, can you tell us how?**

Absolutely. Although I had other opportunities during my undergrad to work in labs, either as a mentor or preparation assistant, my research experience was extremely important in my development as a scientist. Working in a research lab, especially when it's your research project, helps you fully comprehend the responsibilities of working in a professional laboratory setting. Some of the concepts I learned through research are: understanding research protocols, preparing and handling data, following experimental procedures, how to work with other scientists, and much more. Not only did my background in research help me better understand concepts during undergrad, but that experience was a big factor to help me get accepted into my PhD program. The skills you can learn through research will follow you for the rest of your life.

**What are your plans for the future?**

I chose to get a PhD right after undergrad, because I have always strived towards a research-focused career. After I finish at UAB, I see myself working in a research lab or potentially higher education, hoping to study the biological basis of human behavior.

**What advice would you give to students at UT who are considering getting started in research?**

Do it! No matter what field you plan on going into, or what kinds of jobs you're looking at, research will be an invaluable life skill to have. The best piece of advice I received was to start early. Talk to your professors, learn what kind of research is being conducted, and ask questions about how you can start your own project.



University of Tampa students with Prof. Andrew DeMil on the bus after a successful conference experience.

## Florida Undergraduate Research Conference

Thirty-six UT students, representing all four UT colleges, were sponsored by OURI and presented their research at the 10th annual Florida Undergraduate Research Conference at the Florida Gulf Coast University on Feb. 22-23. For many, this was their first academic conference, and it left a big impression.

"Having the experience of networking and presenting my research has helped me in many ways. Although it was amazing to gain new presentation skills and add this experience to my resume, the most important takeaway for me was the confidence that I gained. Being able to present my work and network with other students helped me feel like a real scientist, and gave me confidence I could do this in my future career."

"Participating in the poster session was a great opportunity to develop my presentation skills and expanded my network of future collaborators."

**OURI will again sponsor students to attend the virtual FURC in February, 2021.**



"Face Memory in Diverse Spaces" is the project by Nia Dyson '21 (left)



Griffin Baughn '20 with his project entitled "Exploring cryptic coloration in the symbiotic shrimp *Neopononides beaufortensis*: limitation or benefit?"





Ashley Newsome '20 was a Cybersecurity major working with Mia Plachkinova on the Security of Healthcare Infrastructure.

# O pportunities in OURI



Alexis Garcia '20' spent last summer working with Taegan McMahon on refining a vaccine to protect amphibians from the lethal pathogenic fungus Bd (the Chytrid fungus), which has caused the extinction and extirpation of over 350 species of amphibians all around the world.



Amanda Barrie '20 and Brianna Rubenstein '21 presenting at FURC.



The Florida Undergraduate Research Conference is one of the largest multidisciplinary undergraduate research events in the country and allows students to present their projects in a poster format.



Since the beginning of the Quality Enhancement Project (QEP), Dr. Miloslavia (Mia) Plachkinova has been an ardent proponent of Undergraduate Research. She has taught numerous Inquiry-based Internet Security courses. She mentored students for the Undergraduate Research & Inquiry Grants. She has taken many students to research conferences, even once driving the UT van to the Florida Undergraduate Research Conference! Mia is also a wonderful mentor for the Success Scholars program, where she typically hires three students a semester. The Office of Undergraduate Research and Inquiry (OURI) would like to thank Mia for being such a great supporter of OURI. We are very sad to see her go, but wish her much luck in her new position!

### What will you miss the most about the University of Tampa?

The thing I will miss the most about UT is the collaborative environment. UT is a relatively small school and it was easy for me to reach out to colleagues and students from a variety of disciplines. I am a big supporter of transdisciplinary research and it has been amazing to work together with colleagues from fields such as healthcare, criminology, economics, psychology, and entrepreneurship to name a few. OURI has been instrumental in helping me develop and support these relationships through various events, workshops, and conferences. Showing these interdisciplinary connections to students have helped me build diverse teams where for example cybersecurity students address mental health issues from a technology perspective. Such experiences are extremely valuable for all of us as they help us expand our horizons and see things from a different perspective.



### Where are you going and what position did you accept?

Earlier this year I accepted a position as an Assistant Professor of Information Security and Assurance at Kennesaw State University in Atlanta, GA. I really enjoy doing research and I wanted to focus a little bit more on that aspect of my career. I am really grateful for all the research support I received at UT, and especially from the OURI office. I have always supported these efforts and did my best to promote critical thinking and experiential learning in my classroom. However, I realized I am ready to take the next step and devote more time and efforts into my research agenda. Kennesaw State University, being a big state school, is providing me more academic resources and teaching flexibility so I can further develop my scholarship.



# O pportunities in OURI



Nicholas Greenberg '20 and Lilli Sutherland '20 hope to identify the types of bacteria living in sharks' mouths, determine what strains offer greatest risk of infection for shark bite victims and then identify the best treatment options for shark bite victims in Tampa Bay.

When a human is bitten by a shark, pathogens and bacteria can transfer due to the severity of laceration often associated with a shark bite, creating a number of health issues. Bacteria can also be resistant to many different antibiotics, making it difficult for health care professionals to treat shark bite victims.

Greenberg and Sutherland found mentors in biology professors Ann Williams and Dan Huber.

# O pportunities in OURI



Anthony LaRose's First Year Seminar is an inquiry-based course in which students explore what the media gets wrong (and right) about forensic science and the criminal justice system. As part of their course, students were truly "learning by doing" as they processed simulated crime scenes on UT's campus. Special thanks to Alicia Kaufman, Crime Scene Technician II with the Tampa Police Department and Danielle Dixon, Forensic Science Specialist with the Pinellas County Sheriff's Office for making this experience possible.

### Why did you choose UT?

Back when I was in high school, I knew that I wanted to get out of my comfort zone. Being that I am from New York, I also wanted to get away from the harsh winters. I had begun touring campuses across the southern states the summer before my senior year, and unfortunately didn't gain a sense of direction as to where I would land. The last school I toured was University of Tampa. I distinctly remember walking up to the area where prospective student's check-in at Plant Hall. I was met with a huge smile from one of the tour guides, as if he had seen me around campus before. That was the first moment I knew I belonged at UT. Touring the campus felt as if I was already going there, and that was how I knew UT was the right fit for me.

### What is your major and when will you graduate?

I am a double major in Sociology and Political Science with a minor in mathematics. Technically, I should be graduating in the Spring of 2021, as that is when my four years will be completed. Alternatively, I will be graduating in Spring of 2022 in order to best prepare for graduate school and continue research at UT.

### What made you interested in research?

I fell into research by mistake, and it ended up becoming my passion. When I was a freshman I was at a luncheon for the Honors Program and wanted to get more involved with UT. I had a conversation with the director of the Honors Program, Dr. Cragun, who happened to be a Sociology professor. As we shared the same area of study, he put me onto a few research projects he was working on. I loved the whole process, and from there began to combine my interests – civil rights, civil liberties, and human rights – with the skills I was acquiring. Now, three years later, I couldn't imagine doing anything else.



### What is/was your research project?

My research project regards the topic of Police Militarization (PM). PM is the process of implementing militarism - an ideology based around the use of force as the best means to solve problems - in local law enforcement. Dr. Ryan Welch and I aim to better understand why officers support their militarization, being that the effects have been net-negative for society. To answer this, we focus on gender and its role in policing. Police culture is a hyper-masculine environment that supports a hegemonically masculine identity. Individuals who identify with hegemonic masculinity express the privilege men have over women and other groups through authority, aggressiveness, and institutional power. We theorize that hegemonic masculinity promotes violence as a masculine right and may be an indicator of support for other means of violence, such as police militarization.

### Can you tell us a little about your findings and/or results?

In order to test our theory that increased masculinity leads to increased support for Police Militarization, we ran regression models using a series of survey questions that operationalize gender identities and PM. We found that i) males, and ii) those who identified more heavily with hegemonic masculinity were more likely to support Police Militarization, supporting our hypothesis.





**What did you gain from the undergraduate research experience?**

My research experience over the past summer was invaluable. I was able to construct and execute my very own project from start to finish. This included; theory building, literature review, methods construction, data analysis, and writing. Not only that, but I was able to contribute to a topic I care deeply about. The BLM movement has shed a light on the nature of policing in America, and to many, it is devastating. This experience my way of contributing to a solution.

**What are your plans after UT?**

After I finish my undergraduate degree, I plan on pursuing a PhD in either Political Science or Sociology. In my career, I hope to become a professor myself and also become involved in American politics.

**What advice would you give to students who are considering getting started in research?**

My best advice for students considering getting started in research would be to not sell yourself short, because you are capable of more than you can imagine. If you have a passion for your area of study, that and a little hard work are all you need to really go far.

## 2020 Summer Undergraduate Research Fellowship Recipients

### **Brolan Jennings**

Searching the Gaia Catalog for Moving Group Stars  
Faculty Advisor: Simon Schuler, Astronomy

### **Brianna Rubenstein**

The Impacts of Acculturation on Machismo and Marianismo at the Intersection of Hispanic Health  
Faculty Advisor: Alyssia Miller, Spanish

### **Hayley Kudzmas**

Quantifying the amount of Staphylococcus aureus and MRSA at Gandy Beach in Tampa Bay, Florida  
Faculty Advisor: Bridgette Froeschke, Biology

### **Cheyenne Lee**

Communication Styles in the U.S. Senate  
Faculty Advisor: Jonathan Lewallen, Political Science

### **Lauren Kulick**

Assessing the impact of experiential-based environmental outreach on participant's perspectives of conservation by developing an educational model for varying age groups from both local and international communities.  
Faculty Advisor: Emily Rose, Biology

### **Dylan Clark**

Denmark and the US: a comparison of two economic systems  
Faculty Advisor: Cagdas Agirdas, Economics

### **Margaret Baker**

The role of Vibrio in the microbial loop and has water contamination in Tampa Bay.  
Faculty Advisor: Rebecca Waggett, Biology

### **Gina Pantano**

Learning the inverse scattering transform through the lens of an undergraduate mathematician.  
Faculty Advisor: Morgan McAnally, Mathematics

### **Savannah Muron**

Gypsy X-linked Recessive Female Sterility Screen  
Faculty Advisor: Stephen Kucera, Biology

### **Breanna Arbanas**

Classification of Human Adenoviruses Using Machine Learning  
Faculty Advisor: Pad Mahadevan, Biology

### **Flavia Mandatori**

A Longitudinal Macro-Level Comparison between Adult Female and Male Violent Offending Within the Context of Strain Theory  
Faculty Advisor: Alexander Toth, Criminal Justice

### **Jessica LaFontaine**

Self-Efficacy and the Retention of First-Generation College Students  
Faculty Advisor: Megan Lopez, Center for Teaching and Learning

### **Lauren Sass**

Moderation of the Cross-Race Effect  
Faculty Advisor: Benjamin Marsh, Psychology

### **Christina Pasca**

Gender and Police Militarization  
Faculty Advisor: Ryan Welch, Political Science and International Studies



## 2020-2021 Undergraduate Research and Inquiry Grant Recipients

### **Megan Pinder, Benjamin Share, and William Love**

An examination of the behavior, distribution, and anthropogenic effects on *Octopus briareus* in an isolated Bahamian marine lake  
Faculty Advisor: Heather Masonjones, Biology

### **Elena Barr**

Quantification of pro- and antioxidant metabolisms from tissues of amphibian hosts during the time course of chytrid fungus infection  
Faculty Advisor: Jeffrey Grim, Biology

### **Wyatt Larrinaga**

Enhanced Lanthanide Extraction with Tripodal CMPO Ligands  
Faculty Advisor: Eric Werner, Chemistry

### **Allison Bednar, Hunter Marshall-House, and Lyndsey Campbell**

Where Have All the Flowers Gone? Determinants of Forest and Dryland Preservation in Africa  
Faculty Advisor: Kevin Fridy, Political Science

### **Matthew Olszewski and Danielle Vezensky**

Should I stay or should I get going? Investigating the eggs ability to enter the cell cycle during early development.  
Faculty Advisor: Michelle Osovitz, Biology

### **Alyssa Wence**

Developmental Investigation into Emotional Validation  
Faculty Advisor: Meredith Elzy, Psychology

### **Elizabeth Sylvia**

Dietary preferences in the lettuce sea slug  
Faculty Advisor: Michael Middlebrooks, Biology

### **Danusia Mryczko and Tina Brown**

Busyness & Cognition in Undergraduate Students: End-of-Semester versus Beginning-of-Semester Cognitive Performance  
Faculty Advisor: Sara Festini, Psychology

### **Corinne Fanta, Katherine Justus, and Brianna Arnold**

The Long-Term Physical and Psychological Consequences of Sex Trafficking on Women in Florida  
Faculty Advisors: Elizabeth Sassatelli, Nursing

### **Tiffany Maziarz**

You Throw Like a Girl: A Sociological Analysis of Media Representation and Viewership of Women's Sports  
Faculty Advisor: Katie Cooper, Sociology

### **Lily Connelly, Joel Lee and Chandler Culotta**

Hemingway in Cuba  
Faculty Advisor: Sarah Lauro, English and Writing

### **Brianna Rubenstein and Alexandra Ortiz**

Perceptions of Non-Spanish-Speaking Health Care Professionals and Hispanic Immigrants on Care Mediated Through Translation  
Faculty Advisor: Alyssia Miller, Languages and Linguistics

### **Allison Duffy**

Synthesis of Homocitrate  
Faculty Advisor: Richard Squitieri, Chemistry

### **Mareth Lopez Ocasio and Kevin Ribeiro**

Investigating the Use of Carbazoles as Photocatalysts in the Arylation of Heteroarenes and Olefins  
Faculty Advisor: Ashley Longstreet, Chemistry

### **Pamela Font and Hannah DeCosta**

Reducing Stress in College Students  
Faculty Advisor: Erica Yuen, Psychology

### **Nathan Eolin**

Development of a Protein Domain Parsing and Visualization Software Tool  
Faculty Advisor: Pad Mahadevan, Biology

### **Gillian Tiralla**

Preparation of Indoles by Sequential Reactins of a Particular Type of Compound [(Nitrophenyl)acetylenes]  
Faculty Advisor: C. Eric Ballard, Chemistry

### **Caroline DaSilva**

Umbilical cord stem cells as a source for regenerative medicine  
Faculty Advisor: Pavan Rajanahalli, Biology



**OFFICE OF UNDERGRADUATE  
RESEARCH AND INQUIRY**



The Office of Undergraduate Research and Inquiry has chosen Rachel Wall as the Undergraduate Researcher of the year. The title of Rachel's research is Ovarian and Uterine Cancer Patients and Quality-of-Life during Chemotherapy. Rachel was the recipient of a 2019 Summer Undergraduate Research Fellowship, where she worked closely with her mentor, Dr. Meredith Clements. Rachel presented her qualitative data findings and thematic analysis at the Florida Communications Association where she won "Top Poster Award: Best Research Design and Scholarship." Rachel also presented her findings at Florida Undergraduate Research Conference and Posters at the Capitol. She was also accepted to the National Conference of Undergraduate Research which was cancelled because of Covid-19. Rachel is an Allied Health major who has decided to go to graduate school and we wish her much luck!



Rachel Wall (right) with her mentor, Dr. Meredith Clements (left) in Orlando, FL.

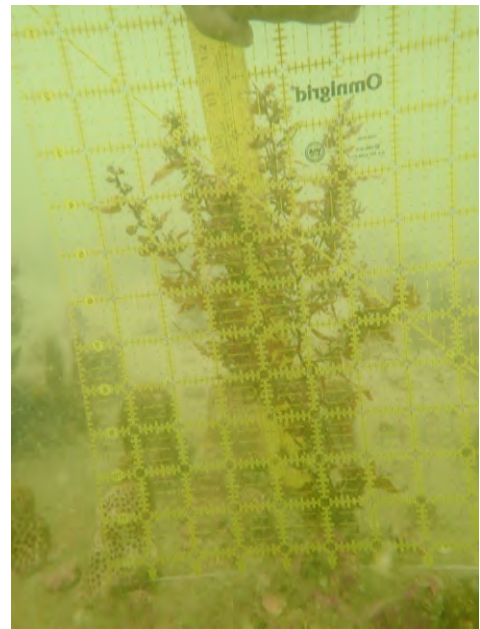


In March of 2017, Erin Hanson started a non-profit initiative with local non-profit Positive Coaching Alliance, an organization that focuses on youth sport activism. Erin's initiative allows high school student athletes the opportunity to connect with youth participants in Parks & Recreation centers and serve as mentors for the participants. The mentors will encourage the athletes to participate in sports to continue to receive the social, emotional, and physical benefits that come from sport participation. After expanding the program to three high schools, Erin knew she would need research and data to continue to grow her program. This was Erin's main motivator to participate in the 2019 SURF program. She would conduct research on how to continue to grow and develop her program. Research was something that Erin was interested in "but wasn't exactly sure what that looked like for business majors and if that was even a possibility for undergrad students. When I saw the application open for Summer Undergraduate Research Fellowship (SURF), I knew I had to apply!" Erin Hanson's faculty advisor was Deirdre Dixon.





Stephanie Walker '20, a Marine Science-Biology major, was a recipient of the Summer Undergraduate Research Fellowship for the summer of 2019. The title of her project was "Aspergillois prevalence in sea fans, and pathogen presence in the adjacent water column." She worked with her mentor, Dr. Michael Slattery, to collect data in Tampa Bay. Here Stephanie is seen performing her methods test-dive. The visibility was really low, about 3-5 feet, but they were able to learn a few crucial tips, before they went for their dive in the Florida keys where visibility is much better—about 20-30 feet. They used a yard stick (that has cm on it) and a quilting pattern template to do their underwater measurements.





In August 2019, Amanda Barrie '20 had the opportunity through her Summer Undergraduate Research Fellowship to travel to the Dominican Republic to conduct research. Over the past few months, she had been working with Dr. Alyssia Miller researching the cultural constructs of Machismo and Marianismo in Hispanic cultures, and the relationship those constructs have with health. In the Dominican Republic she was able to continue her project by working with both the Department of Language and Linguistics, and the Department of Nursing at The University of Tampa surveying participants in pop up medical clinics in San Juan, and analyzing her data in comparison to the populations in Tampa. Through the opportunity to travel to the DR, she was able to create an international project, and is able to compare health and culture in the US to the Dominican Republic.





A strong advocate of Undergraduate Research is leaving the University of Tampa; Dr. Taegan McMahon. She has taught numerous Biology Inquiry classes over the last few years. She mentored students for the Undergraduate Year Long Research Grant and the Summer Undergraduate Research Fellowship. Taegan also drove one of the UT Biology vans to the Florida Undergraduate Research Conference (FURC)!

Taegan has been a great supporter of The Office of Undergraduate Research and Inquiry (OURI). She will definitely be missed!

### What will you miss the most about the University of Tampa?

I can confidently say the thing I will miss most is doing research with my research students. I already miss doing research with them, since we had to shut down in March. I worked very hard to create a culture in my lab designed to help all of us, myself included, develop our confidence as researchers and scientific educators. We worked together on projects, everyone contributed ideas, pointed out concerns, came up with creative solutions and supported one another. It has been extremely fulfilling to be part of these students' journeys and the way we really created a lab family. I am still in contact with and working directly with many of the students who have moved on to graduate school. I will miss the supportive and community positive research space I created with these students at UT.

Leaving UT is extremely bittersweet, but the research team/family I built, the work we completed, and the collaborations we've developed will keep us all connected.



Dr. Taegan McMahon (right) with last year's OURI Student Researcher of the Year, Nicole Laggan '19.



### Where are you going and what position did you accept?

I am taking a position as an Ecology professor at Connecticut College in their Department of Biology. I grew up near Conn College; in fact many of my first experiences with field work were with now retired faculty from this department. It feels a bit like coming full circle, to be able to contribute to the research and teaching community at Conn College since it was such an important part of my personal journey to become an ecologist.

# Spartans Present

# Catherine Reveco '21, Tiffany Maziarz '21 and Joseph Cappuccilli '21

Catherine Reveco '21, Tiffany Maziarz '21 and Joseph Cappuccilli '21 worked alongside the American Red Cross as members of its International Humanitarian Law Youth Action Campaign. Throughout the fall semester, the team researched the use of autonomous weapons (like drones and robots) in warfare today as it relates to international humanitarian law.

The students were collaborating with the Red Cross through UT's Applied Learning Experience (ALEX) internship. Coordinated through a partnership between the UT Office of Undergraduate Research and Inquiry and University of Tampa Career Services, ALEX is designed to solve issues for a local organization while offering opportunities for students to apply their knowledge to real-world scenarios through multidisciplinary teamwork.



Organized by University of Tampa's ALEX Program

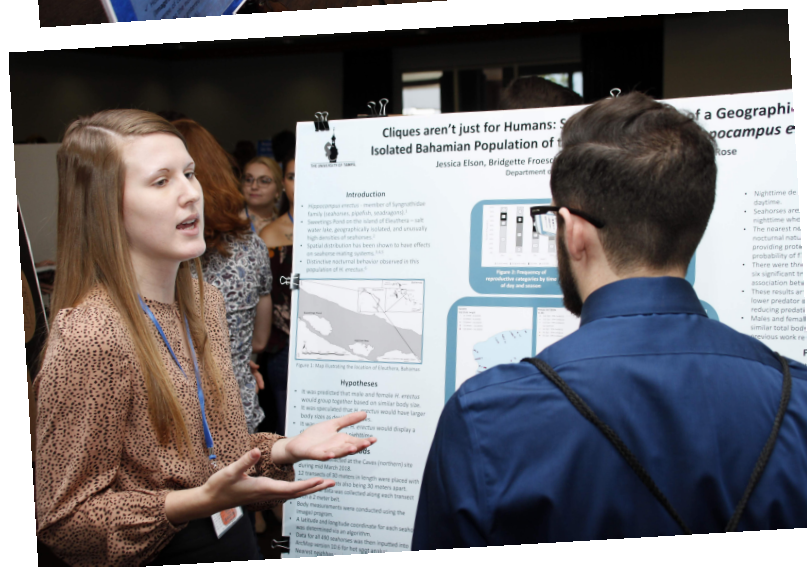
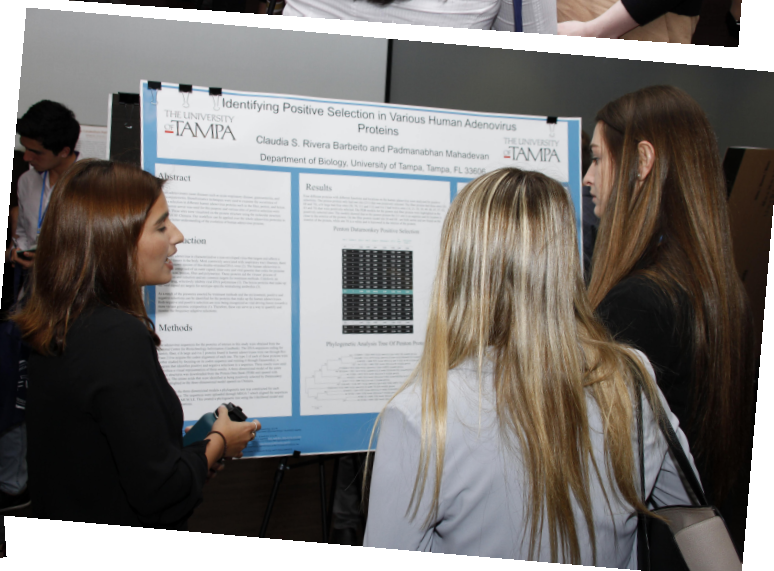
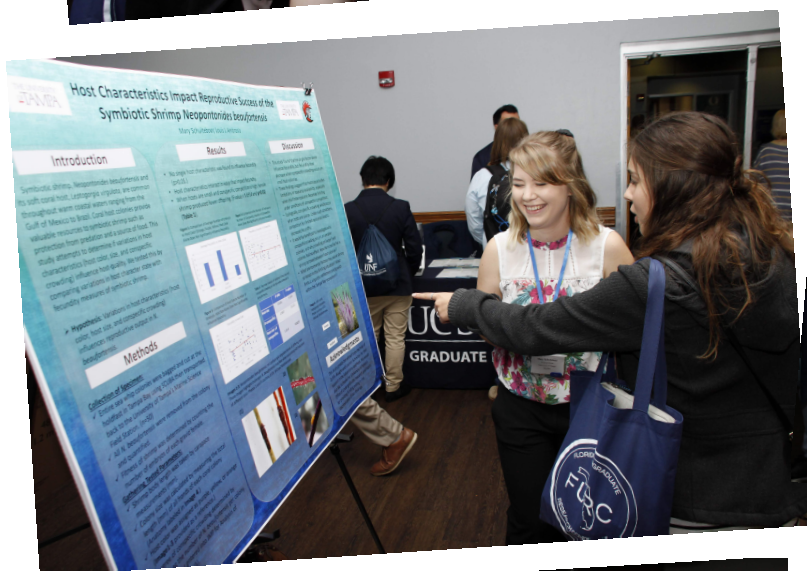
## Autonomous Weapons Symposium

A panel discussing the benefits, risks, and ethics of autonomous weapons and autonomous weapons systems.  
DECEMBER 4TH | 1:00PM - 3:00PM  
SYKES CHAPEL



**American Red Cross**





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