

# SPECTRUM

FLORIDA STATE UNIVERSITY COLLEGE OF ARTS & SCIENCES

Winter 2021







## From the Dean

public universities nationally and No. 1 in Florida. I can't overstate how proud I am of the entire academic community for its efforts and success.

For the coming spring, we have scheduled more face-to-face courses and expanded hybrid options while maintaining a model that permits adjustments should the pandemic force changes. Our goals include providing choices for students, continuing strict adherence to CDC safety guidelines, and striving to create as robust a college experience as possible. We will also keep finding ways to honor the university's most time-honored traditions including, if possible, a spring homecoming and in-person commencement.

Research and creative activity continue. Campus labs operate at reduced capacity due to social-distancing but remain productive. Researchers limited to online sources look forward to the lifting of travel restrictions and resumption of field work. Faculty and students are exploring further, deeper uses of modern technology as they forge ahead.

I have been honored to witness the determination and grace with which our students, faculty, and alumni have handled these seasons of change. I trust you will share a sentiment of inspiration when you read their stories.

Strength, skill and character will see us through this crisis and, however separate we remain for the time being, there will come a time when we reunite as a grateful FSU College of Arts and Sciences family.

A handwritten signature in black ink that reads "Sam Huckaba". The signature is fluid and cursive, with the first name "Sam" and last name "Huckaba" clearly distinguishable.

Sam Huckaba  
*Dean, College of Arts & Sciences*

Welcome to the Winter 2021 edition of Spectrum magazine, the alumni publication of the Florida State University College of Arts and Sciences. When I wrote to you last summer, it was at the end of a whirlwind semester where we faced unprecedented challenges in shifting activities to a remote environment. Our students and faculty pulled together remarkably well, and we anticipated the COVID-19 crisis would recede over the summer and our fall semester would approximate a normal year.

As of this writing, the pandemic has not subsided. We adapted and offered a mix of in-person and virtual courses this fall to continue providing the world-class education for which FSU is known. Faculty and graduate teaching assistants offered a meaningful roster of face-to-face courses, while those who opted to deliver courses virtually engaged students through technology and innovative techniques.

Our students, again, rose to meet numerous challenges. As evidence, FSU's 95-percent first-year student retention rate, its highest ever, places us in the top 15

# SPECTRUM

FLORIDA STATE UNIVERSITY COLLEGE OF ARTS & SCIENCES

## FEATURES

---

**10**

### Alumni Alight

Arts and Sciences grads take risks, follow their passions into outstanding careers.

**16**

### Student Success

College scholars combine art and science to break new ground in research.

**28**

### Faculty Forays

Professors apply decades of expertise to address novel and longstanding questions.

---

## Your gift, your way

Your financial and charitable goals are a reflection of your commitment to support the future of your loved ones, charitable organizations you value, such as Florida State, and the greater community. A donor-advised fund is a convenient way to organize your charitable intentions — consider it one-stop giving.

Once you open a donor-advised fund through a written agreement with FSU, you may contribute to your fund at any time and recommend how your funds are distributed. Your contributions will be invested by the FSU Foundation, and you'll be kept up to date with a regular accounting.

You will also receive a federal income tax charitable deduction for gifts made to your donor-advised fund.

As you consider ways to support your philanthropic goals, a donor-advised fund may be the perfect mechanism because it grants you the ability to give without making an immediate designation for the charitable cause you wish to support and it simplifies the recordkeeping for a number of separate contributions.

For more information, or to make a gift, contact Nancy Smilowitz, the college's assistant dean for development, at 850.294.1034 or [nsmilowitz@fsu.edu](mailto:nsmilowitz@fsu.edu).



### On the cover

Photo illustration by Tom Morgan. Original photo by FSU Photography Services.

# Nole Notes

The top news from  
around the college



## FSU retains Top 20 status, advances in key metrics

Florida State came in at No. 19 on the list of the nation's Top 20 national public universities in the latest U.S. News & World Report rankings, marking the second consecutive year the university placed in the Top 20. The rankings appear in U.S. News & World Report's "Best Colleges 2021" guidebook.

"Our continued recognition as one of the nation's Top 20 public universities is a reflection of Florida State's commitment to academic excellence and student success," said President John Thrasher. "This is the result of hard work by our students, faculty and staff, and support from the Florida Legislature and the Florida Board of Governors, who have been staunch champions of our goals and aspirations."

In addition, Florida State matched last year's 6-year graduation rate of 83 percent, outperforming its predicted 6-year graduation rate by 13 percentage points. The university ranked No. 12 among public universities when comparing actual graduation rate against

predicted rate, which U.S. News calculates using the university's resources and student profile.

FSU moved up to No. 15 among public universities for the graduation rate of students who receive a Pell Grant, a measure that drives the methodology's social mobility factor. The university improved by two points in the metric, posting an 81 percent graduation rate among Pell Grant recipients.

The university rose nine spots to No. 13 in the class size metric. More than 60 percent of FSU's classes have fewer than 20 students, an improvement of more than 4 percent over last year. FSU also improved 2.3 points in the percentage of faculty with a terminal degree in their field, placing it at No. 18 among public universities in this category with 94.9 percent.

The national universities category comprises 385 institutions (208 public, 175 private and 2 proprietary) offering a wide range of undergraduate majors and master's and doctoral degrees.



## Record first-year student retention rate places FSU in Top 15 nationally

Florida State is retaining first-year students at a record rate, according to the most recent data reported to the Florida Board of Governors. Ninety-five percent of first-time-in-college students who enrolled at FSU for Summer/Fall 2019 stayed for their sophomore year —

a record for the university. Notably, last year's freshman class of about 7,100 students was the largest and most diverse in university history.

"This is a testament to the resilience and tenacity of our students, especially during these uncertain times," said Sally McRorie, provost and executive vice president for academic affairs. "It's rewarding to see them stay on the path to a college degree, despite the tremendous obstacles we've all faced because of the pandemic."

The 95-percent mark ranks in the Top 15 among national public universities and is well above the most recent national average retention rate of 81 percent for 4-year public institutions, reported by the U.S. Department of Education's National Center for Education Statistics.

## FSU again recognized as a top college for diversity

Florida State has been recognized for the fifth consecutive year as a Diversity Champion by INSIGHT Into Diversity magazine, the oldest and largest diversity-focused publication in higher education. FSU is one of 15 institutions nationwide to earn Diversity Champion status.

FSU also received its seventh straight Higher Education Excellence in Diversity Award — a national honor recognizing U.S. colleges and universities demonstrating an outstanding commitment to diversity and inclusion.

"Florida State University is a visionary leader among institutions of higher education striving for inclusive excellence throughout their campus," said Lenore Pearlstein, publisher of INSIGHT Into Diversity magazine. "As a Diversity Champion school, FSU exceeds everyday expectations by developing successful strategies and programs that serve as models of excellence for other higher education institutions."



## Florida State joins global team investigating impact of climate change on Arctic ecosystems

FSU is one of 14 universities collectively awarded \$12.5 million from the National Science Foundation to launch a new Biology Integration Institute, called EMERGE, which will focus on better understanding ecosystem and climate interactions — like the thawing of the Arctic permafrost — and how these can alter everything from the landscape to greenhouse gases.

EMERGE, which stands for “EMergent Ecosystem Response to ChanGE,” is an ambitious five-year project to pioneer a new “genes-to-ecosystems-to-genes” framework for understanding connections between small-scale microbes and large-scale ecosystem changes, and vice versa. The goal is to discover how processes that sustain life and enable biological innovation operate and interact within and across different scales of organization, from molecules to cells, species and ecosystems, under dynamically changing conditions. The result will be a framework to enable predictive modeling of ecosystem response to change.

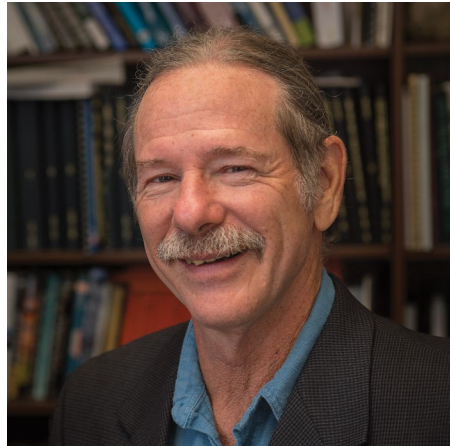
“Predicting how specific environments on the Earth will respond to climate change is a critical societal need,” said Jeff Chanton, a professor in the FSU Department of Earth, Ocean and Atmospheric Science and co-principal investigator for EMERGE. “We have assembled a large international, interdisciplinary team to tackle the critical questions that face humankind today. For example, we are investigating the interaction of carbon dioxide exchange with thawing permafrost and the release of the potent greenhouse gas methane, which could result in the acceleration of climate change.”

The work brings together 33 scientists and research will be done in Stordalen Mire, a long-studied peatland in northern Sweden



*A view of the Stordalen Mire in Sweden. Photo by Clarice Perryman/University of New Hampshire.*

where permafrost thaw drives changes in the landscape, plants, geochemistry and microbes.



*Jeff Chanton*

## FSU sets school record with nine Fulbright Scholars

Nine Florida State faculty members have been selected as U.S. Fulbright Scholar Program award recipients, the most Fulbright Scholars to be named from FSU in one year.

Two faculty members from the College of Arts and Sciences are among the group and plan to teach and conduct research as part of opportunities funded by the U.S. Fulbright Scholar Program during the 2020-21 school year.

English professor David Johnson received a U.S. Fulbright Scholar grant to study at the KU Leuven

in Belgium for six months beginning January 2021. He will advance work on a monograph that seeks to answer questions about 13th-century Flemish poet Jacob van Maerlant.

Kurtis Johnson, research faculty in the Department of Physics, received a U.S. Fulbright Scholar grant to conduct research with colleagues at the University of Bari, Italy.

## Geologists publish new findings on carbonate melts in Earth's mantle

FSU Department of Earth, Ocean and Atmospheric Science researchers have discovered how carbon-rich molten rock in the Earth's upper mantle might affect the movement of seismic waves.

The new research was coauthored by EOAS associate professor of geology Mainak Mookherjee and postdoctoral researcher Suraj Bajgain. Findings from the study were published in the journal *Proceedings of the National Academy of Sciences*.

“This research is quite important since carbon is a crucial constituent for the habitability of the planet, and we are making strides to understand how solid earth may have played a role in storing and influencing the availability of carbon in the Earth's surface,” Mookherjee said. “Our research gives us a better understanding of the

## Nole Notes

elasticity, density and compressibility of these rocks and their role in Earth's carbon cycle."

The work was partly supported by the National Science Foundation and the National Natural Science Foundation of China.



Photo by Tobias Fischer, University of New Mexico, 2005/Courtesy of the National Science Foundation.

### Anthropologist studies prehistoric violence, inequality during social transitions

Tom Leppard, an assistant professor in the FSU Department of Anthropology, has been awarded a distinguished fellowship from the Aarhus Institute of Advanced Studies at Aarhus



Tom Leppard

University, Denmark, to study the relationship between interpersonal violence and the rise of wealth inequality during societal transitions in Europe, Asia and Africa.

The \$80,000 fellowship will allow Leppard to develop a new element of research focusing on interpersonal violence and early state formation. The analysis of the relationship

between interpersonal violence as an economic behavior and emerging complex societies ties into his ongoing research on the global transition from small-scale, non-urban communities to large-scale, hierarchical societies in Europe, Asia and Africa. While the role of violence in these transitions hasn't been explored fully, new research in the social sciences suggests violence has the capacity to erode emerging wealth disparities and maintain or increase overall social equality.

"Considering the broader context in which we currently find ourselves, especially when it comes to social inequality, how it's built and maintained, and how interpersonal and also state-led violence intersects with this, this is a timely route for my research," Leppard said.

### Historian earns dual fellowships to research revolutionary Cuba

Anasa Hicks, an assistant professor in FSU's Department of History, has been awarded prestigious fellowships from the Florida Education Fund and the



Anasa Hicks

Schomburg Center for Research in Black Culture to conduct research for the upcoming book, "Carlota's Heirs: Masculinity and Military Service in Revolutionary Cuba."

Hicks is a recipient of the FEF's McKnight Junior Faculty Fellowship and the Schomburg Fellowship from the Schomburg Center Scholars-in-Residence Program at the New York Public Library.

"I'm extremely lucky to have received two fellowships that complement each other so well," Hicks said. "I plan to develop new courses for the history department and incorporate the research I'll complete into classes I already teach. Students are often shocked to learn that the past can be updated, and I love explaining

how historians constantly make new discoveries to add to what we know about the past."

The McKnight fellowship promotes excellence in teaching and research by underrepresented minorities and women. Hicks will use this fellowship to conduct research in Miami and Havana.

The Schomburg Center is a renowned repository of sources on the African diasporic experience located in New York City. Hicks is slated to conduct research there from January until June 2021.

### FSU-led team offers new rules for algae species classification

Assistant professor of biological science Sophie McCoy and her team of evolutionary biologists and ecologists are proposing formal definitions for algae species and



Sophie McCoy

subcategories for the research community to consider: They are recommending algae be classified first by DNA and then by other traits.

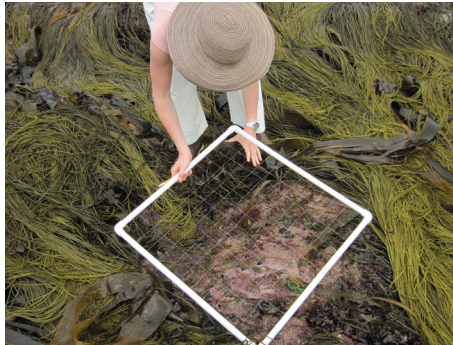
"Algal species should evolve separately from other lineages, so that's DNA-based, but we should also take into account differences in their ecology, such as what they look like or their role in the environment," McCoy said.

The article was published in the *Journal of Phycology* as a perspective, and the team hopes the larger scientific community will comment and start an important conversation. Algae matter more than most people realize because the organisms make about half of the oxygen in the world, McCoy said. Humanity depends on algae, as does the entire food web of the ocean.

How a species is defined changes the perception of biodiversity and conservation, but



beyond conservation, catastrophes — from algal blooms in waterways to the destruction of coral reefs — could be mitigated by discussing and clarifying algal species classification. McCoy said some of the mysteries surrounding this type of growth are likely related to a lack of uniform identification.



*Sophie McCoy surveys the algal community underneath a canopy of sea spaghetti (Himantalia elongata) at Cape Cornwall, England. Photo by Sophie McCoy.*

## Greenhouse effect of clouds instrumental in origin of tropical storms

Allison Wing, an assistant professor in the FSU Department of Earth, Ocean and Atmospheric Science, was part of an international team studying the origin of tropical cyclones that found an infrared radiative feedback from clouds



*Allison Wing*

accelerates storm development. Deep clouds that are heavily laden with water droplets and ice crystals trap outgoing infrared radiation, creating a localized greenhouse effect that traps heat and warms the atmosphere in the area of the developing storm.

"This local warming causes rising motion in the storm, which helps fully saturate the atmosphere and increase inward flowing winds near the surface," Wing said. "This aids in the formation of a circulation near the surface that

then strengthens and eventually forms a central eye, taking on the classic appearance of an intense tropical cyclone."

The team's work was published in the Proceedings of the National Academy of Sciences of the United States of America.

Learning more about the transition from a tropical depression to an intensifying hurricane will improve scientists' understanding of processes driving storm formation. While storm track forecasting has improved greatly over the last several decades, based on scientists' ability to measure and predict the large-scale winds that control a storm's path, there is still much to learn about storm formation.

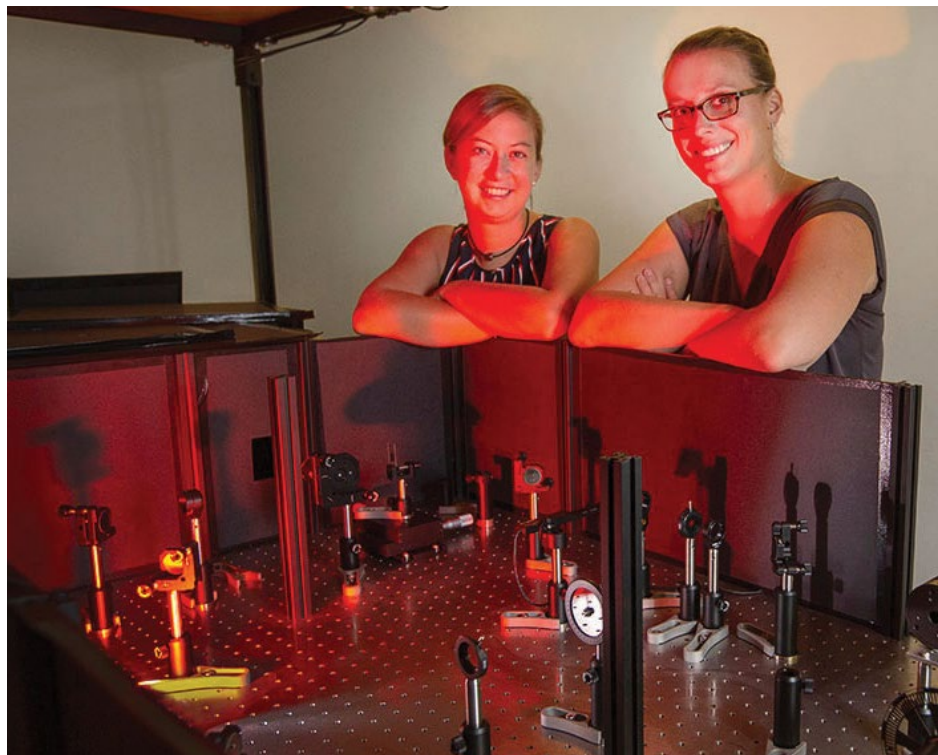
The project was supported by the National Oceanic and Atmospheric Administration, National Science Foundation, NASA, the National Key R&D Program of China, and National Natural Science Foundation of China.

## FSU researchers investigate material properties for longer-lasting, more efficient solar cells

Designers of solar cells know their creations must contend with a wide range of temperatures and all sorts of weather conditions — conditions that impact efficiency and useful lifetime.

FSU assistant professor of chemistry and biochemistry Lea Nienhaus and former FSU postdoctoral researcher Sarah Wiegold are helping to understand the fundamental processes in a material known as perovskites, work that could lead to more efficient solar cells that also do a better job of resisting degradation. They found small tweaks to the chemical makeup of the materials, as well as the magnitude of the electrical field it is exposed to, can greatly affect the overall material stability.

Their latest work is published in a pair of studies in Journal of Materials Chemistry C and Journal of Applied Physics.



*Lea Nienhaus (right) and former postdoc Sarah Wiegold (left). Photo by FSU Photography Services.*

## Nole Notes

The first perovskite solar cells, developed in 2006, had a solar energy power conversion efficiency of about 3 percent, but cells developed in 2020 have a power conversion efficiency of more than 25 percent. That rapid increase in efficiency makes them a promising material for further research, but they have drawbacks for commercial viability, such as a tendency to degrade quickly.

"How can we make perovskites more stable under real-world conditions in which they'll be used?" Nienhaus said. "What is causing the degradation? That's what we're trying to understand. Perovskites that don't degrade quickly could be a valuable tool for obtaining more energy from solar cells."

This research was supported by start-up funds from FSU and funding from the U.S. Department of Energy.

### iSensor Lab releases "CV19 SelfDefense" mobile app

The COVID-19 pandemic continues to impact the lives of people across the country. To encourage healthy and safe practices to help stop transmission of the coronavirus, FSU's iSensor Lab, led by School of Information associate professor Shuyuan Mary Ho, developed an app for Android devices called "CV19 SelfDefense."



Shuyuan Mary Ho (left), Gordon Erlebacher (center), and Xiuwen Liu (right).

In partnership with professor Xiuwen Liu from the Department of Computer Science and professor Gordon Erlebacher from the Department of Scientific Computing, the team developed "CV19 SelfDefense" as part of a grant from FSU Collaborative Collision titled, "Achieving economic normality and public health via deep learning modeling and contact tracing."

App users can create an account profile and utilize a variety of tools. Recent postings from the World Health Organization, Centers for Disease Control and Prevention, and Department of Health and Human Services are shared in the "News Updates" area of the app's Dashboard, along with a testing center locator. A symptom checker also assists users in assessing symptoms based on CDC guidelines.

The app's "Social Distance 'Nudge'" uses Bluetooth technology to help users practice social distancing. Via an automated or manual scan, users get "nudges" as a phone vibration or notification of other devices nearby. The app also features a quarantine monitor that helps users keep track of personal whereabouts during a self-quarantine period.

### Physicist named American Physical Society Fellow

Ingo Wiedenhöver, a professor at FSU's Department of Physics, was selected as a 2020 Fellow of the American Physical Society in recognition of his contributions to the field of physics. Each year, the APS selects less

Being named a Fellow of the American Physical Society by my colleagues is a satisfying and encouraging recognition of my work in nuclear science and points to the role FSU is playing in this field."  
- Ingo Wiedenhöver



than half of one percent of the society's total membership from peer-submitted nominations to be elected to the status of fellow.

In addition to his professorship, he also serves as director of the John D. Fox Superconducting Linear Accelerator Laboratory at FSU, which affords physicists the opportunity to study radioactive ion beams and a variety of other physics phenomena.

Wiedenhöver earned his doctorate in experimental nuclear physics from the University of Cologne, Germany, in 1995. He was a postdoctoral fellow at the U.S. Department of Energy's Argonne National Laboratory in Lemont, Illinois, and an assistant professor at the National Superconducting Cyclotron Laboratory in East Lansing, Michigan, before joining the Florida State faculty in 2001.

Over the past decade, Wiedenhöver's research has been focused on nuclear astrophysics, the study of how certain nuclear reactions influence the behavior of stars and star explosions.

Founded in 1899, the American Physical Society is a nonprofit membership organization working to advance and circulate the knowledge of physics through research journals, scientific



meetings, education, outreach, advocacy and international collaboration. The APS is composed of more than 55,000 members, including physicists in academia, national laboratories and industry in the U.S. and throughout the world.



*Igor Alabugin*

## **Chemist wins prestigious American Chemical Society award**

FSU professor of chemistry and biochemistry Igor Alabugin was selected for the 2021 edition of the American Chemical Society's Arthur C. Cope Scholar Award, one of the most prestigious recognitions in organic chemistry.

Alabugin has been with FSU since 2000 and specializes in organic synthesis and catalysis, computational chemistry, nanoscience and photochemistry. He is the first FSU faculty member in the university's history to receive this award.

"What makes this award special is that it is the first one in the history of FSU, somewhere I have been for the duration of my independent career," Alabugin said. "This is also recognition of a very strong organic chemistry tradition at FSU."

Alabugin's list of accolades is extensive: He has won a Fulbright Scholar Award, been named a Fellow of the American Association for the Advancement of Science and was the first FSU faculty member to be awarded all three FSU Undergraduate Awards — Teaching, Advising and Research Mentor. He has published a book and more than 170 papers, has presented

at approximately 300 invited lectures at universities, industries and conferences, and currently holds 16 patents.

The Arthur C. Cope Scholar Awards were established in 1984 by the ACS Board of Directors under the terms of the will of Cope, an accomplished organic chemist and member of the National Academy of Sciences. Worldwide, only 10 scholars are selected by the ACS each year to receive the award, which consists of a \$5,000 prize and a \$40,000 unrestricted research grant.



*Jose Martinez*

## **Psychology student wins NSF fellowship**

Jose Martinez, who recently earned a Bachelor of Science degree from the Department of Psychology with summa cum laude and honors in the major distinctions, has received a highly competitive Graduate Research Fellowship from the National Science Foundation. Martinez will use his award to pursue his research into social psychology.

"This fellowship allows me to begin conducting research as soon as I start graduate school, which is something I greatly valued while applying. Moreover, the fellowship offers significant funding opportunities and connects me to an elite group of scientists all over the world," Martinez said.

Martinez served as a research assistant to psychology professor Jon Maner in the Evolutionary Psychology Laboratory for the last two years, and began work as a first-year doctoral student this fall.

The Graduate Research Fellowship program recognizes and assists outstanding graduate students in NSF-supported science, technology, engineering, and mathematics disciplines who are pursuing research-based master's and doctoral degrees.

Fellows receive an annual stipend of \$34,000 over three years, which allows them to conduct their own research at any accredited U.S. institution of graduate education. The stipend includes a \$12,000 cost of education allowance for tuition and fees, and opportunities for international research and development.



*Benjamin Johnson*

## **ROTC cadet set to join U.S. Space Force**

FSU Air Force ROTC cadet Benjamin Johnson is set to make history this spring: Upon graduation, Johnson will be FSU's first cadet to commission directly into the U.S. Space Force, a department of the U.S. Air Force. The information technology major descends from generations of military service members and hopes to share in the family legacy of Air Force service in his role as a Space Operations Officer.

"The lessons I've learned in my time at FSU are what helped me to decide to apply for the Space Force. I've developed a mindset of courage and that is something I will carry with me throughout my time in the Space Force," Johnson said. "I have such an amazing opportunity ahead of me, and I cannot wait to see how my future plays out." <



# The Life Aquatic

FSU alumnus brings decades of experience to new role at alma mater

By Amy Robinson

*Joel Trexler vividly remembers a family trip to the pet store that would ultimately set his future career into motion. At age 12, he was already an enthusiast of dinosaurs and snakes, but was awestruck when he came across an aquarium filled with a colorful collection of tropical fish.*





I just kind of never looked back. I became completely drawn into fish and made a whole career out of it apparently,” Trexler said.

That career has spanned more than 30 years, with the majority spent at Florida International University in Miami. There, he served as a professor in the Department of Biological Science and director of the Marine Science Program, conducting research on the wetland ecosystem of the Florida Everglades that helped shape the Comprehensive Everglades Restoration Plan.

Now, the FSU alumnus has returned to Florida State to serve as director of the FSU Coastal and Marine Laboratory in St. Teresa, Fla.

### College years

Before coming to FSU for graduate school in 1979, Trexler was studying marine science at the University of South Carolina. He envisioned becoming an ichthyologist but an ecology class inspired him to dream even bigger.

“I realized that although I was excited about fish, the ecology and the interactions of species and environment was where my excitement surrounding animals came about,” Trexler said.

In that class, he stumbled upon intriguing research by then-Florida State professor Dan Simberloff. Trexler wrote to him about FSU’s graduate school and learned Simberloff was part of a team evaluating the biology department at the University of South Carolina.

“I met professor Simberloff during his visit and seized the remarkable opportunity to study with him at Florida State. It changed my whole future direction,” Trexler said.

After completing his master’s degree in biology under Simberloff, Trexler began his doctoral work as a research assistant with newly hired FSU assistant professor, Joseph Travis.

“Joel was my first doctoral student at FSU,” said Travis, now a Robert O. Lawton Distinguished Professor of Biological Science and former dean of the College of Arts and Sciences.

“I met him when I arrived and could see he was smart, energetic and passionate about ecology. I hired him as a research assistant and he soon began studying for the doctoral degree with me.”

### Making a splash

When he wasn’t working on field research or exploring Tallahassee nature, Trexler loved swimming at FSU’s outdoor pool. It was there that he met his future wife, Melanie, a biology undergraduate.



Joel Trexler

“We both swam laps and one day we wound up sharing a lane. I had forgotten my goggles and this cute guy, Joel, immediately volunteered his,” Melanie said.

When Melanie later met Trexler at Travis’ lab to return the goggles, he asked her to dinner. She happily accepted.

“I found out that after I left, everyone in the lab broke into applause because none of them had gotten a date in a very long time,” Melanie said.

Their first date sharing oysters at the original Posey’s in St. Marks was a success and the two later married. Melanie, who has spent the last 20 years as a research attorney for the Third District Court of Appeal in Miami, said the pair are delighted to return to north Florida.

“Joel’s enthusiasm for his new role as director of the FSU Coastal and Marine Lab is contagious, and I look forward to sharing this new adventure with him,” Melanie said.

### Leading the lab

Trexler took the helm at the laboratory in September, succeeding long-time director Felicia Coleman. The lab serves as a base camp for field studies and is also home to the Apalachicola Bay System Initiative, which aims to restore the health of the bay’s ecosystem and oyster reef.

“The Marine Lab is a tremendous resource,” Trexler said. “Florida State has had the lab for a long time, so there’s quite a history of research and contributions and support for the local and regional community.”

Adviser-turned-colleague Travis said Trexler’s experience directing FIU’s marine science program and a leadership role in FIU’s National Science Foundation-funded Long Term Ecological Research Program, are just part of what makes him a superb choice.

“Joel is a great scientist in his own right, with expertise in coastal freshwater and marine wetlands biology and a very strong international reputation,” Travis said. “He is a positive, encouraging person. We have an excellent program that he can take to a new level.”

Trexler feels fortunate to have a job that not only continues to fulfill his childhood fascination for all things aquatic, but also fosters that passion in others.

“I hope folks are inspired to come talk to us about ways they can take advantage of the Marine Lab to further their education.” <



Photo illustration by FSU Creative Services. Courtesy photos.

# Ion the Prize

*Florida State University alumnus Kerry Gilmore finds his calling with chemistry*

————— *By Amy Robinson* —————

*As an undergraduate at Roger Williams University in Bristol, Rhode Island, Kerry Gilmore saw himself becoming a marine biologist. The Massachusetts native had a passion for science and longed for a career that would make a difference in the world. As graduation neared, he enrolled in a class that would unlock a new fascination.*





Kerry Gilmore

I didn't find my passion for chemistry until I took organic," Gilmore said. "It is a conceptual, nuanced science that creates these beautifully layered problems."

So captivated was Gilmore that he decided to pursue a doctorate in organic chemistry. However, he remained unsure of which graduate school to attend. In his last year at Roger Williams, a lecture by a visiting chemist — Florida State chemistry professor Igor Alabugin — convinced Gilmore the best place was at FSU.

### New 'Nole

It didn't take long for Gilmore to make an impression at Florida State. Craig Filar, director of the Office of National Fellowships, was thrilled to learn Gilmore was applying for a Fulbright Scholarship, which he ultimately won.

"Students from the scientific disciplines may not recognize their opportunity and viability in an application for the Fulbright," Filar said. "I hope his success inspires other students in the sciences to explore international opportunities."

The scholarship sent Gilmore to Bologna, Italy, for 10 months, where he conducted research at the Consiglio Nazionale delle Ricerche on a novel reaction he helped discover at FSU. The experience opened his mind to possibilities for other international endeavors. Back in Tallahassee, Gilmore worked closely with chemistry legends whose names now grace buildings and lecture halls on campus.

"I was able to work with Nobel Laureate Sir Harry Kroto for a summer and record a video about my research, which he often presented in his talks. Professor Michael Kasha pulled me aside to explain the excitation of gases resulting in the northern lights," Gilmore said. "Florida State presented me with several truly unique experiences."

### Global impact

After earning his Ph.D. from FSU in 2012, Gilmore jumped at an opportunity to work overseas as a postdoctoral fellow at the Max-Planck Institute of Colloids and Interfaces in Potsdam, Germany.

"The decision to move to Germany was significant and one I didn't fully appreciate at the time. Not only was it the best decision for my career, but I also met my wife and started my family there," said Gilmore, now a father of two.

In 2015, Gilmore co-founded FluxPharm (Potsdam), with the goal of developing low-cost manufacturing methods for pharmaceuticals in countries lacking robust chemical industry. Three years later, he became a shareholder in Artemiflow, a company that researches and produces anti-malarial medication. Today, the company explores other possible medicinal applications for the molecule artemisinin, a natural product of the plant *Artemisia annua*.

"We have expanded our research efforts into studying the effects of *Artemisia annua* against COVID-19 and human cancers. These studies are both in cells as well as human clinical trials," Gilmore said.

Much of Gilmore's work revolves around green chemistry, developing products and processes that reduce or eliminate use or generation of

hazardous substances. At the Max-Planck Institute, Gilmore and colleagues discovered a new, environmentally-friendly process for producing artemisinin from plant waste.

"Seeing Kerry become a leader in the field of green chemistry makes me proud and optimistic for the future of the chemical profession," Alabugin said.

### Shared success

In 2020, both Gilmore and Alabugin celebrated awards from the American Chemical Society. Gilmore and two former colleagues from the Max Planck Institute, Peter Seeberger and Andreas Seidel-Morgenstern, were selected to receive the ACS Award for Affordable Green Chemistry, while Alabugin became the first FSU professor to receive the Arthur C. Cope Scholar Award.

"To have been honored alongside Igor, it simply shows the impact he has had and continues to have on science," Gilmore said. "He advances chemistry both through his own work as well as through those he has trained."

Alabugin was equally full of praise for his former graduate student.

"I am very lucky to have mentored students making a difference in the world," Alabugin said. "Kerry's doctoral work led to a fundamental discovery about the rules for making cyclic organic molecules that literally rewrote the textbooks. Judging from over 700 citations for Kerry's work, many chemists find the new cyclization rules useful."

### The next generation

In the fall of 2020, Gilmore began a new chapter as an assistant professor at the University of Connecticut. Not only was it a long-awaited New England homecoming, but an opportunity to continue his research and build an innovative new program focusing on flow chemistry, in which chemical reactions are conducted in continuously flowing tubes rather than a flask.

Gilmore hopes to inspire his students in the way Alabugin inspired him, encouraging them to pursue their passion and have courage to take risks. <



James P. "Jim" Jones. Photo by FSU Photography Services.

# Teacher. Scholar. **Friend.**

Jim Jones taught three generations of FSU students to love American history and became a legend in the process

*By Tom Morgan*

One day, when James P. "Jim" Jones, was still teaching at Florida State University, he wasn't feeling particularly well: He passed out in class and bumped his head on a wall. Everything turned out fine but Jones insisted on memorializing the event, using a marker to draw a black circle where he hit his head and joking, "This will be the mark I leave on the university."

After 57 years of teaching, 21,000 students, nine teaching awards, and seven books, it's safe to say Jones had a much larger and enduring impact on Florida State than a bit of dented drywall.

Jones, who died in June at age 89, is remembered by friends and family as an unwavering supporter of Civil Rights and social justice, the author of countless bawdy limericks about historical figures, and an avid baseball fan who kept statistics on just about everything. He's also remembered by generations of FSU students as their favorite teacher.



## Home-run hitter

Katherine Mooney, James P. Jones Associate Professor of History at Florida State, said Jones' personality was the driving force behind why his classes on World War II and the Civil War became famous on campus. His primary objective, regardless of the material he was teaching, was to form a connection to students.

"He truly liked students. He thought they were interesting and worthy of respect as thinkers and he was eager to hear what they thought," Mooney said. "Jim's teaching philosophy came from his high school baseball coach: 'Just get up there and make contact.'"

Andrew Zwilling, assistant professor of strategy and war at the U.S. Naval War College, earned his bachelor's, master's, and Ph.D. in history at Florida State and still marvels over Jones' recall despite teaching literal generations of students.

"What always surprised me was his ability to remember students from decades before. It was not a rare occurrence to have someone tell him their parents, grandparents, or both took the same class with him," Zwilling said. "Jim would even remember their names and how well they did in the class. On more than one occasion, he would recount what a student wrote in an essay more than 30 years before and what grade he gave it."

## Legendary educator

Zwilling also witnessed firsthand how Jones' masterful story-telling brought his astonishing knowledge of American history to life.

"There was a reason his classes were constantly over capacity and students would beg to be added. The narratives he wove with a simple list of key terms, and maybe a map, were incredible," Zwilling said.

Jones was a subject-matter expert who never stopped learning — he consumed newly published books and updated lecture notes frequently.

"When you went into his house, there would be multiple towers of books next to the couch,

always changing. He never stopped trying to improve his teaching," Zwilling said.

Jones devoted his classes and scholarly work to busting myths about the Civil War and slavery, including ideas that were still commonplace in the South when he graduated with his doctorate in 1960.

*He held our attention so well you could hear a pin drop during his lectures, and our students couldn't get enough. Jim was still offering his insight, his wisdom, his thoughts to hundreds of students, so many that we had to find extra-large lecture halls in the community to accommodate the crowds."*

**— Debra Herman**

"He knew the war was an engine of destructive myth-making," said Ed Gray, chair of the FSU Department of History. "The idea that the Civil War was some sort of 'lost cause,' a justified and principled stand for constitutional ideals, or that the Confederacy was a noble and worthy answer to northern aggression — James found in these canards fuel for his fierce devotion to the truth, which is the Civil War was a war undertaken in defense of an abhorrent institution, chattel slavery."

## Reverberating impact

Jones retired from teaching full-time in May 2014 after 57 years but continued to work at the FSU-affiliated Osher Lifelong Learning Institute, which offers classes targeted at seniors in the Tallahassee community, from 2015 to 2020.

OLLI director Debra Herman said several of Jones' former FSU students returned to take

his OLLI classes, despite already knowing the material. Former FSU President Talbot "Sandy" D'Alemberte could often be found in the front row.

"He held our attention so well you could hear a pin drop during his lectures and our students couldn't get enough," Herman said. "Jim was still offering his insight, his wisdom, his thoughts to hundreds of students, so many that we had to find extra-large lecture halls in the community to accommodate the crowds."

Jones' teaching legacy extends beyond FSU and Tallahassee. He's had a large impact on the U.S. Army, particularly on the Department of History at the United States Military Academy at West Point, according to Col. Matthew Morton, assistant professor at the U.S. Army War College, who earned his master's and Ph.D. in history at FSU.

Jones served on the dissertation committees of no less than 16 army officers destined for teaching assignments at West Point. During their instructor tours at the academy, those Florida State alumni taught at least 350 cadets, Morton said.

"What Professor Jones taught us about these wars wasn't nearly as important as the man he became every time he stepped behind the lectern," Morton said. "Each of us, in Professor Jones, had a role model for what it means to teach with passion — passion that can infect the most ahistorical West Point cadet, Army major or young colonel here at the War College with an interest in history they did not have when they arrived in the classroom."

Jones was also deeply passionate about Florida State, Mooney said, calling it one of the loves of his life. His vocal support of the institution, its people and accomplishments shaped the feelings of countless others, including her own when she arrived in 2014, ostensibly as Jones' replacement.

"About five minutes after I arrived, it became clear that replacing Jim just wasn't possible," she said. "The best thing we all can do is to model ourselves on his example." <



# Hindsight: **2020**

*Florida State University students, faculty and staff  
persevere during a challenging year*

*By Amy Robinson*





2020, the year that saw COVID-19 become a global pandemic has officially drawn to a close. Although we're not sure what 2021 will hold, a new chapter is certainly a welcome one. Despite difficult circumstances, the Florida State University community rose to 2020's biggest challenges.

### ***Back to school***

The Fall 2020 semester brought the return of face-to-face classes on campus after the pandemic forced coursework to go remote in spring. Students, faculty, and staff were given the option to resume courses in-person thanks to newly implemented safety measures. Work crews spent the summer sanitizing campus facilities and installing plexiglass partitions inside libraries and lecture halls, while face masks became an essential part of daily attire.

"Although some aspects of university life will be different this fall, our commitment to providing a world-class education to our 42,000 students remains the same," said FSU President John Thrasher in June.

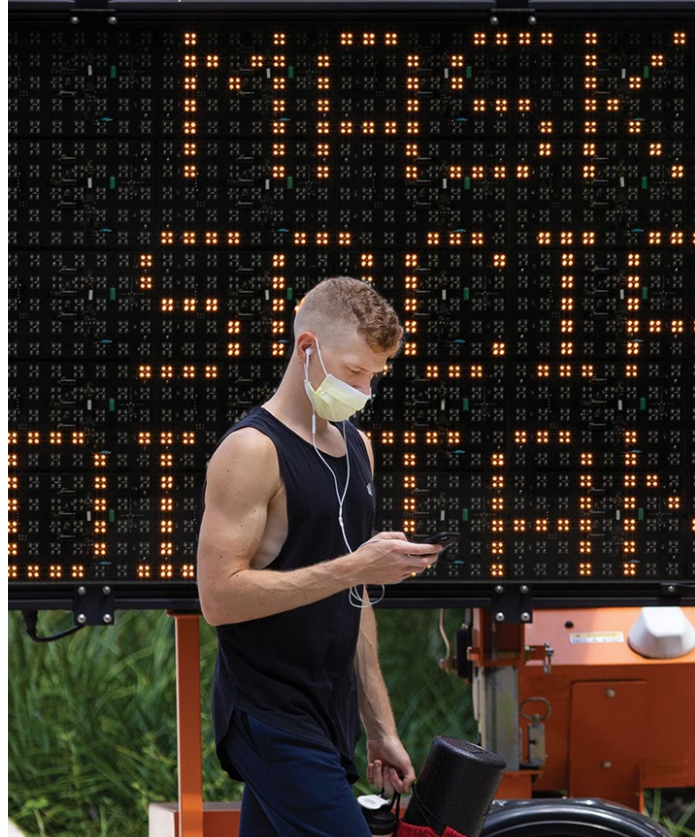
Jake Carstens, a Ph.D. candidate and teaching assistant with the Department of Earth, Ocean and Atmospheric Science, was among the first students to arrive back on campus. Time spent working in the laboratory is vital to Carstens' research, which relies heavily on computing.

"Our students split time in the lab as evenly as possible so only one person occupies the room at all times," Carstens said. "One of the other students created a weekly spreadsheet of times we can update should someone not head to campus for work in their normal timeslot. We are able to maximize our productivity while ensuring each other's safety."

*Testing, contact tracing, and face masks became part of daily life at FSU during Fall 2020. Photos by FSU Photography Services.*







Scenes from FSU's Fall 2020 semester during the COVID-19 pandemic. Photos by FSU Photography Services.

### On-site testing

Coinciding with the return to campus in August, FSU opened a COVID-19 testing site at the Donald L. Tucker Civic Center. Free tests were administered to university faculty, staff and students, with specimens analyzed on campus at the FSU-Tallahassee Memorial Hospital Rapid Response Laboratory.

Jonathan Dennis, an associate professor in the Department of Biological Science who oversees the lab's operations, developed an innovative new testing procedure to overcome supply shortages that hamper other common testing methods.

"We thought if we applied our research laboratory mentality to this clinical test, we could create a test that did not suffer from the ebbs and flows of reagent availability," Dennis said.

By mid-November, more than 34,000 tests had been conducted at FSU since the testing site first opened, a figure expected to go up by roughly 2,000 per week for the foreseeable future.

Without the need to send tests to an off-site lab for analysis, scientists in FSU's lab can generate results within 24 hours. In addition to a quick turnaround time, the lab is also equipped to handle a large influx of tests if necessary.

"We stabilized our process to where doing 1,000 tests a day is not a problem," Dennis said. "We're doing big things in this lab. The throughput and quality of the results are world-class."

### Team effort

Beyond the testing lab, researchers from across campus found ways to join the fight against the virus. FSU's Office of Research allocated over \$400,000 to fund 26 interdisciplinary projects addressing questions related to COVID-19.

"This is an exciting opportunity and responsibility for FSU," said former vice president for research Gary K. Ostrander. "As researchers, we have an obligation to use our specialized skills to help understand this disease and its impacts." The university also deployed the Secure

Assessment for FSU Exposure Response (SAFER) team to conduct contact tracing and provide support to individuals in the FSU community who tested positive. FSU concurrently launched its COVID-19 online dashboard, which tracks weekly data on the number of tests and positive cases, and offers an array of health and wellness resources to the university community.

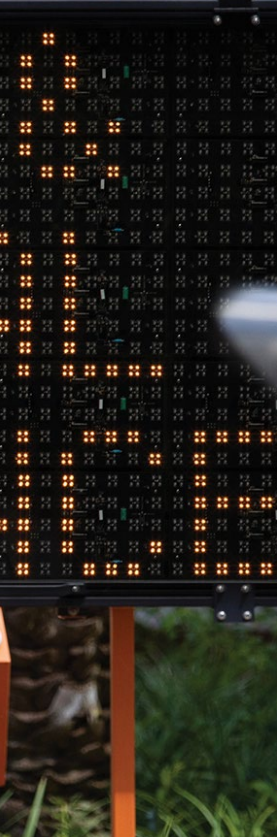
### A new year

Although the pandemic is still very much a part of daily life, as the calendar flips to 2021, a sense of hope for the new year is tangible, and FSU students remain flexible and optimistic.

"We are all in this together, even if it feels like that sentiment has been lost," said FSU history major Alice Fabela. "We can all still decide our futures, and history has shown us that humans adapt to whatever comes our way." ◀

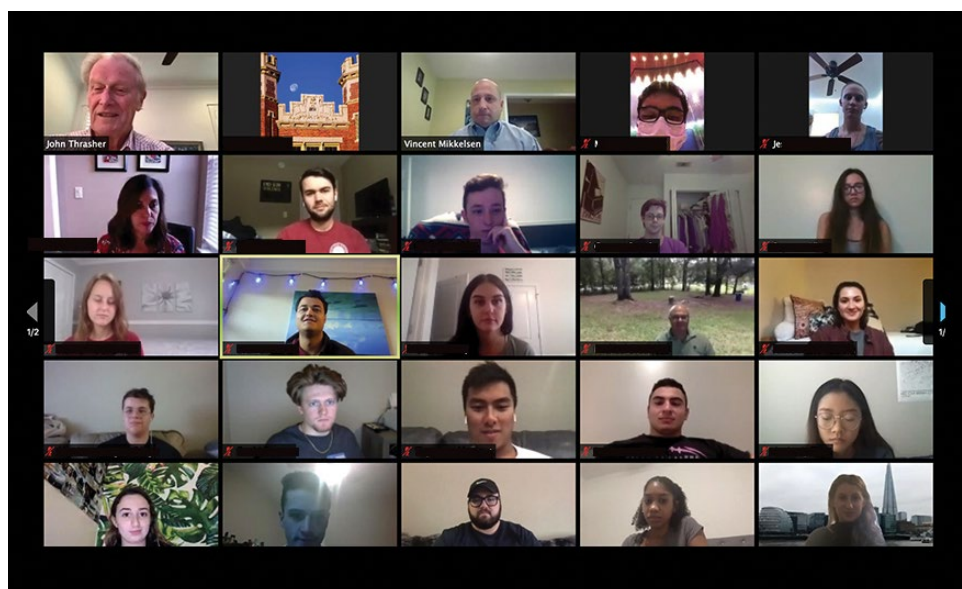
Visit [news.fsu.edu/coronavirus](https://news.fsu.edu/coronavirus) for FSU COVID-19 updates. Bill Wellock contributed to this story.





*We're doing big things in [the FSU-TMH Rapid Response] lab...throughput and the quality of results are world-class."*

**– Jonathan Dennis, Associate Professor of Biological Science**



## Get Well Soon

On Oct. 6, FSU President John Thrasher announced that he and First Lady Jean Thrasher had tested positive for COVID-19 and were self-isolating. Thrasher continued to work from home, even joining a Zoom session the following week with FSU history professor Vincent Mikkelsen's "America in Vietnam" class to discuss his experience serving as an Army captain during the conflict. The Thrashers took to social media several days later to share news of their recovery and thank the FSU community for the outpouring of well wishes.





*Alexis Kidd. Courtesy photos.*

# Codeswitched

*FSU senior combines passions for biology, Spanish to study the science of language*

*By Rebecca McCandless*

Triplet Alexis Kidd was learning Spanish in high school when she noticed a big difference in how easy learning a new language was for her and how challenging the experience of learning that same language was for her brother.

Kidd had always been fascinated by the brain's complexities, the unknowns left to be discovered, and differences between people, even those biologically related, but this idea was something new. She began studying how people process language

and how multilingualism changes brain structure, even penning her International Baccalaureate program essay on the topic.

For a while, language receded to the background. Kidd enrolled at Florida State and turned her studies to biological science to create the foundation for a career in veterinary medicine — she plans to specialize in the growing field of veterinary neurology. But the linguistic notion remained.



"I initially pursued Spanish just because I wanted to speak another language, but I fell in love with the subject," said Kidd, now a senior double-majoring in biological science and Spanish.

During her first year at FSU, Kidd took an upper-level Spanish class taught by modern languages and linguistics graduate assistant Amy Bustin. It was there she had the first inkling she might be able to combine her interest in neurology and her passion for language.

Bustin studies second-language acquisition, bilingualism and psycholinguistics, or the ways in which language is represented and processed in the brain. The field of psycholinguistics includes codeswitching, the cognitive phenomenon that happens when a speaker switches among two or more languages in a single utterance.

"Because of my biology background, I was very interested in learning more about the neurolinguistics of the phenomenon," Kidd said.

Many people are familiar with the idea of "Spanglish," which is often perceived negatively; however, linguists recognize it as a natural and emergent process practiced by highly proficient bilinguals. Bustin's research examines morpho-syntactic boundaries, or where in a sentence or phrase is it considered permissible or impermissible to codeswitch, along with the production and perception of codeswitching.

"Codeswitching is different from borrowing, meaning when a bilingual person switches out or incorporates words from another language into their dominant language, because of grammatical constraints that occur while codeswitching," Kidd said. "A common belief is that bilinguals must be highly proficient in both languages to codeswitch because one must understand grammatical constraints in both.

Intrigued, Kidd applied to be a research assistant through the Undergraduate Research Opportunity Program in order to help with Bustin's work on codeswitching.

"Alexis was instrumental in designing the stimuli used in the study and in recruiting participants," Bustin said. "She went to different student groups across campus to help create a database of individuals that qualified for the study."

As she researched further, Kidd discovered more about how multilingualism affects brain structures, and decided to pursue an honors thesis on codeswitching and how it can affect the bilingual brain.



Kidd (right) with siblings Maddie and J.R.

"While codeswitching is mainly studied from a sociolinguistic perspective, I am proposing to study this phenomenon from a neurolinguistic perspective and identify possible brain structures activated by codeswitching," Kidd said.

With her research, Kidd hopes to gain more knowledge about how codeswitching specifically affects certain brain structures and cognitive processes, and possibly lead to a better understanding of how people process languages.

"The idea is that bilingual individuals who codeswitch may have an even greater cognitive benefit than those who do not," Kidd said. "This is a new perspective on codeswitching that may lead to a deeper understanding of its cognitive benefits."

*It was a joy to work with [Alexis] on her thesis and see her make connections between her two different fields of study."*

**– Gretchen Sunderman,**  
**Professor of Spanish and Linguistics**

Professor of Spanish and linguistics and associate chair for undergraduate studies Gretchen Sunderman, Kidd's thesis director, said Kidd's background in both Spanish and biological science gave her a unique perspective on language. The two met through Bustin, one of professor Sunderman's doctoral students.

"Alexis is a bright, motivated and curious student. It was a joy to work with her on her thesis and see her make connections between her two different fields of study," Sunderman said.

While researching, Kidd found interesting information that may link bilingualism to the prevention of onset memory disorders, such as Alzheimer's disease. She presented her thesis proposal on codeswitching to the board of professors in November and plans to spend the winter observing positron emission tomography, or PET, scans and functional MRIs to study how the cognitive functioning of codeswitching impacts brain structure.

"If we can obtain more knowledge about this correlation, there is a possibility we may develop newer methods to battle and help prolong onset of memory diseases in high-risk individuals," Kidd said. <

*Rebecca McCandless is pursuing a bachelor's in English with a concentration in Creative Writing, and plans to graduate in May 2021.*

# Scholarship and Service

Air Force ROTC  
cadet preps for an  
international career

*By McKenzie Harris*

**N**early 15 years ago, Florida State University senior Tetiana Panina and her family emigrated from Ukraine to the U.S. to pursue a better life.

"As a first-generation immigrant, the U.S. has given me educational and financial opportunities I couldn't access in my native country," said Panina, who is pursuing a major in Russian language and minor in computer science. "I'm beyond grateful for this, and I want to do something meaningful to allow future generations to enjoy these freedoms and opportunities."

The Ukrainian-led revolution in 2014 and the Russian invasion that followed were stark reminders of the stability and opportunity some take for granted in the West. Panina sought the chance to serve her new homeland by joining FSU's Air Force Reserve Officer Training Corps, or AFROTC, as a cadet during her first year at the university, said Robert Romanchuk, associate professor of Slavic and associate chair for undergraduate studies in the FSU Department of Modern Languages and Linguistics.







Left and top: Tetiana Panina. Center and above: Panina and fellow FSU Air Force ROTC cadets. Photos courtesy FSU AFROTC and Elsa Lovejoy.

The great changes ushered in by the revolution also inspired Panina to devote herself to the study of Russian and Ukrainian languages, cultures, politics and history, Romanchuk explained.

Panina hadn't previously considered joining the military but soon found herself thriving in the structured training culture. And while she originally joined to give back to the country that had provided her so much, Panina quickly saw AFROTC could unlock considerable career choices.

Former professor of aerospace studies Air Force Capt. David Miller suggested studying Russian could open the door for meaningful opportunities. After changing majors, Panina realized her Russian and Ukrainian languages and cultural knowledge are the foundation for her immediate and long-term goals.

Project Global Officer Summer Study Abroad Scholarship, and the prestigious Boren Scholarship.

"Tetiana is an exceptional student, cadet and leader, and she fully embraces and personifies Air Force core values," said assistant professor of aerospace studies and operations officer Air Force Capt. Drew Dutcher. "She has proven extremely adept in both her leadership and followership abilities, and her drive, dedication, and commitment to academics and AFROTC is unparalleled."

After graduation and commissioning as an active duty second lieutenant in the Air Force this spring, Panina hopes to join the U.S. intelligence community and work in Eastern Europe. Her long-term career goals include becoming an attaché for American embassies in Ukraine or Russia. While on active duty, she

*"As a first-generation immigrant, the U.S. has given me educational and financial opportunities I couldn't access in my native country."*

**— Tetiana Panina**

"Upon arriving at college, I had no intention of pursuing language studies," Panina said. "After Capt. Miller's suggestion, I realized dual-language literacy, especially in a critical language like Russian, is indispensable in cultural, academic and professional contexts. Learning an additional language gives you access to an entirely new world of literature, music, people, history and more."

In 2017, Panina was a finalist for FSU's Presidential Scholars program and earned the Air Force Critical Language Scholarship. In 2020, she was selected for the Outstanding Undergraduate Student Award from the Department of Modern Languages and Linguistics, the

aims to pursue bachelor's degrees in computer science and psychology and a master's degree in Russian.

"Tetiana is very responsible about what she says and does. She measures her words carefully before she speaks and the consequences before she acts," Romanchuk said. "This sense of responsibility to language and action makes her a good scholar; she doesn't engage in leaps of logic or faith, and her conclusions are limited to what can be proven on the basis of evidence." <

*McKenzie Harris is pursuing a master's in Media/Communication Studies. She earned a bachelor's in English with a concentration in Editing, Writing and Media in May 2020.*



# Five-star recruits

Arts and Sciences students  
excel as Presidential  
Scholars and beyond

*By Audrey Post*

When Florida State's Presidential Scholars program admitted its first class in Fall 2014, just 25 students were selected from the 800 promising scholars who applied. Known thereafter as the Scholars Class of 2018, this elite group was the vanguard of a recruitment strategy to attract pre-eminent scholars to FSU — a strategy in which the College of Arts and Sciences continues to be a formidable presence.

"We're looking for more than strong academic performance," said Craig Filar, associate dean of undergraduate studies and director the Presidential Scholars program. "We're also looking for holistic leadership — transformative leadership and scholarship."

Presidential Scholars is the premier undergraduate merit scholarship at FSU and provides four years of support for undergraduate students with extraordinary potential to be the transformational leaders of their generation.



Chandler Pruett. Courtesy photo.



According to the Office of Undergraduate Studies, almost half of the 110 students currently in the program declare a primary major in Arts and Sciences. This does not include Presidential Scholars whose primary majors are other colleges but carry a second major in Arts and Sciences. Looking at both reveals a deep connection between the college and this pipeline.

Program specifics have been refined since that first call for applications in 2013: All Presidential Scholars are now also in the FSU Honors Program and applications for both programs were folded into the university's undergraduate application to increase awareness among elite applicants. The number of students selected as Presidential Scholars each year has also increased from 25 to 30.

### **Unrivaled experience**

Administrators say the community of Presidential Scholars comprises critical and innovative thinkers who use their talents to make meaningful contributions to society. It also provides access to the best resources FSU has to offer, including honors curricula and high-impact educational experiences like Study Abroad and Global Scholars, research and creative endeavors, service-learning projects, public service internships and entrepreneurship development.

"Presidential Scholars are able to go on and do more than they thought possible," Filar said. "If they have not outgrown their original goals from when they started by the time they graduate, I'm not doing my best work."

Annually, about 100 applicants are invited to campus to interview. A significant percentage of students who are not selected as Presidential Scholars choose to attend FSU anyway, Filar said, and the ones who decline FSU's Presidential Scholars offer choose another top-tier school.

"The goal is to be the best version of yourself, whether you're in Presidential Scholars or not," he said.

### **Impressive alumni**

Sophie Rottenberg, a member of the inaugural Scholars Class of 2018, said it is important to tell your story when you apply for the program.

"I tried to show who I was and be true to myself as a student — adding a bit of humor certainly helped," she said.

Rottenberg's comment in her application that "as a vegetarian, bacon is a gateway drug," set her apart and amused late dean of undergraduate studies Karen Laughlin, a key player in the program's establishment who passed away unexpectedly in May.

Being a Presidential Scholar helped Rottenberg fine-tune her career goals; understand teamwork, collaboration, and coordination of complex and multi-faceted projects; and appreciate the value of service projects.

"Nothing feels better than giving back in a substantive way that's not limited to an hour here and there," she said.

Rottenberg, who double-majored in biological science and international affairs at FSU, went on to earn a Master of Science in Public Health at Johns Hopkins University. She landed at Mitre Corp., a not-for-profit organization that manages federally funded research and development centers covering a variety of areas, including health care. Rottenberg helped develop best practices for nursing homes dealing with the coronavirus pandemic.

Will Boose, another member of the inaugural Scholars Class of 2018, majored in history and Spanish before going on to earn a master's degree at the University of Florida. He is currently working on his doctorate in anthropology at Emory University, studying the labor experiences of motorcycle taxi drivers in Iquitos and Lima, Perú.

Joe Guidubaldi, from the Scholars Class of 2020, majored in biological science and is on a Fulbright in England, working on a master's in neuroscience at University College of London.

Michael Hong, also from the class of 2020, double-majored in psychology and health management, policy and information. He's now continuing his education as a medical student at FSU's College of Medicine.

### **The new class**

Chandler Pruett has always been interested in meteorology. "When I was a little kid, I'd go out on the porch and try to spot a tornado," he said.

The National Merit Scholar is one of three meteorology majors in the Presidential Scholars Class of 2024, along with Ian Mutschler and Robert Sztot. Each is working with a faculty member on research.

"When I applied ... I poured my heart out into the essays," said Pruett, a double major in statistics who is working with associate professor of meteorology Jon Ahlquist in researching observational analysis.

### **Ready to research**

The first Presidential Scholar to major in meteorology was Margaret Hollis, another of Ahlquist's students. She graduated in 2019 and is in graduate school at the University of Oklahoma. Jonathan Marcus, a meteorology junior, is also in the program.

Ahlquist said the Presidential Scholars come with strong backgrounds that make them ready to participate in research immediately.

"The average freshman doesn't have that skill set," he said.

In addition to research experiences, Pruett enjoys the sense of community the program builds among the participants, with Filar as the "the dad" of the group challenging them all to dream big.

Since entering the Presidential Scholars, Pruett's interest has shifted to hurricanes. His dream job would be to be a hurricane hunter, he said. Why?

"You can't fly into a tornado." <



# *Hidden histories*

*Anthropology grad student applies STEM techniques to uncover forgotten societies*

***By Rodney Campbell***



Tara Skipton was already engaged in studying past civilizations when she arrived at Florida State University in 2019.

The second-year anthropology graduate student had earned a bachelor's in anthropology and geography from the University of Florida before arriving in Tallahassee, but her area of focus crystalized once she began working with her adviser, assistant professor of anthropology Jayur Madhusudan Mehta.

Among Mehta's specialties is researching French and Spanish colonization of the American South, and he quickly made a case for Skipton studying one of his favorite regions — the Mississippi River Delta.

"I wasn't sold at the beginning," Skipton said. "One of the ways Dr. Mehta described it to me was that New Orleans isn't like any other Southern city. It's more like a New York City in the South with its Caribbean, French, Spanish and English cultural influences."

Today, her work concentrates on the period between 1780 and 1810, when the Spanish occupied the delta and slavery fueled an economic boom on coastal Louisiana plantations. Where there is slavery, there is resistance, and Skipton's research involves Maroon settlements, communities of people fleeing enslavement who succeeded in establishing societies in remote areas where they could not easily be found.

Skipton uses her skills in spatial analysis, Geographic Information System mapping, and archaeology to study migration, movement, and clandestine escape in and around the marshy, swampy plantation landscapes near New Orleans, and propel new discoveries.

"The story Tara will tell about Maroon settlements and sites is that within slavery, human beings made choices and had agency," Mehta said. "When people escaped, they made the choice to leave and fight for their lives amid the alligators and snakes in the swamps of Louisiana."

Just joining one of these communities required courage and complex planning, she said. Decisions were hard, and carrying out plans was even tougher. Without efficient means of communicating, enslaved people and those in Maroon settlements had to develop ways to share information. What they came up with required extraordinary cooperation and coordination.

"There was an extensive communication and trade network among Maroons throughout coastal Louisiana," Skipton said. "There was an intricate information network connecting those enslaved on plantations, Maroons, and free people in the city, especially east of New Orleans. They warned each other about potential raids and passed along where to find guns and ammunition."

Locating the Maroons' means of escape is a challenge for a 21st-century researcher. Skipton uses least-cost networks, which she describes as "Google Maps for areas with no roads." Such networks allow researchers to plot routes ancient civilizations used for movement and discover where they settled.

"How are you going to find archaeological sites that are supposed to be hidden?" Skipton said. "I'm plotting arbitrary points around my study area ... how would I get from Point A to Point B? What I want to do for my Ph.D. is understand the relationship between space, power, and

methods of self-liberation among these Maroon sites."

Much of Skipton's research has been centered on people enslaved at one plantation in coastal Louisiana, but she is now enlarging her area of study to tell a broader story.

"She's taking it in a new direction," Mehta said. "She's really building on this work in a unique way. Ultimately, it won't be about a plantation specifically. It will be about the landscapes of coastal Louisiana."

Among the revelations from this summer's social justice movement in the U.S. is that students don't learn much about African-American history, and what does appear in textbooks was penned by white scholars who don't fully understand the struggle of slavery.

Skipton, who went to high school in Pensacola, recognizes those gaps in the system and sees the value in studying marginalized communities. She plans to become a college professor once she earns her master's degree and doctorate.

"In my history classes, there were a couple of pages about slavery and that was it," she said. "It's a question of public education and how much we want to go into the hard truths about slavery. We need to look critically at our past to improve our future." <

*Left and right:  
Tara Skipton.  
Courtesy  
photos.*



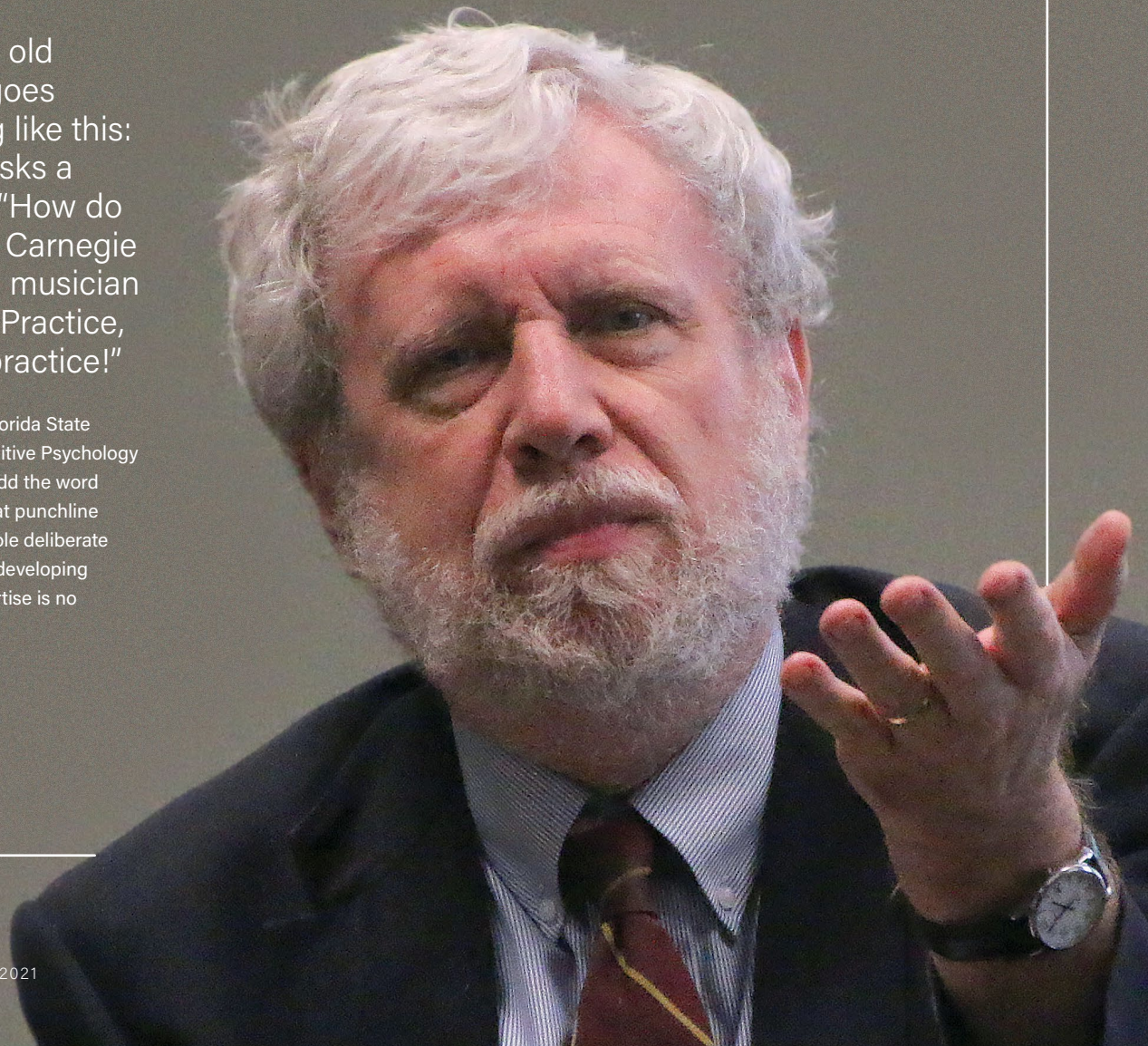


# *Practice* makes perfect

By Kati Schardl

There's an old joke that goes something like this: A tourist asks a musician, "How do you get to Carnegie Hall?" The musician answers, "Practice, practice, practice!"

Researchers in Florida State University's Cognitive Psychology Program would add the word "deliberate" to that punchline and tell you the role deliberate practice plays in developing world-class expertise is no laughing matter.





The study of how people acquire expertise is one of the cornerstones of FSU's program, which got a kickstart in 1992, when researcher, author, and "expert on experts" Anders Ericsson arrived in Tallahassee. Ericsson's research had found that experts are made, not born, and that expertise is acquired through "deliberate practice," or good, old-fashioned hard work, consistently applied.

Ericsson's hiring as the Conradi Eminent Scholar Chair, the College of Arts and Sciences' first endowed chair, was followed by the subsequent hires of Neil Charness, Rolf Zwaan and Mark Carrier, each of whom shared his interest in studying the acquisition of expertise.

"Cognitive psychology was seen as an area that was growing in importance. We were hired to establish a specialty in expertise research," said Charness, now the William G. Chase Professor of Psychology and director of FSU's Institute for Successful Longevity.

In the mid-1990s, FSU's psychology department consisted of three main groups — clinical, physiological (neuroscience), and cognitive and behavioral science, or CBS. The Cognitive Psychology Program formed from within the CBS group and charged ahead on expertise research.

"Cognitive psychology is the scientific study of mental processes — how we learn, think, reason and remember," said Walter Boot, the program's director. "It's concerned with uncovering the rules of the brain when it comes to thinking — the fundamental mechanisms of how the brain processes information — but also how an understanding of how we think can be applied to solve practical problems."

From its beginnings, CPP has been geared toward providing independent research opportunities for doctoral students. The program currently includes 10 faculty members and 16 Ph.D. students.

"We provide great hands-on experience to our students," said Boot, who joined the faculty in 2008 and whose research focuses on how



*Far left: Anders Ericsson. Clockwise from left: Walter Boot; FSU's driving simulator aids in cognitive psychology research; Kyle Harwell. Courtesy photos.*

to design technology to enhance the well-being and independence of older adults. "Our graduate program is apprenticeship-oriented. Students are conducting their own experiments and collecting data."

That focus on mentorship and the chance to work with Ericsson himself brought Kyle Harwell to FSU in 2015.

Ericsson — author of nearly 300 publications, co-author of "Peak: Secrets from the New Science of Expertise," and adviser to coaches, corporate executives, and organizations from Cirque du Soleil to Google to the CIA — encouraged his students to propose their own research projects, like learning to juggle, to experience firsthand how expertise is acquired.

Harwell completed several such projects, including learning computer programming to do statistical analyses. He is currently attempting to learn to speak Mandarin.

"I started taking a serious look at the role practice plays in acquiring expertise earlier this year, and found it is taking 30 minutes to an hour a day to really learn a new skill," Harwell said. "It's more about doing regular small amounts of high-intensity practice."

The Cognitive Psychology Program has evolved to include cutting-edge research into aging and cognition, conducted through the Institute for Successful Longevity and the Pepper Institute on Aging and Public Policy, and an emerging emphasis on cognitive neuroscience using the university's MRI facilities and electroencephalogram, or EEG, technology to measure thinking, learning, memory and other brain functions.

"We're a very collaborative and interdisciplinary program," Boot said. "Our faculty members and graduate students collaborate not just with people from other areas within psychology, but with researchers at the medical school, Department of Sociology, Department of Computer Science, College of Education and College of Engineering. Some of the problems we want to solve are too big for one discipline."

Ericsson, who died unexpectedly in June at age 72, left a legacy that endures in the projects begun under his mentorship, the program's ongoing research into expertise, and the spirit of collaborative inquiry he fostered.

"Anders was always interested in expert performance in different areas," Charness said. "He was incredibly devoted to understanding at a very deep level what made people highly expert performers." <

# Voices for change

Florida State University reacts to tensions of race, diversity in America

— By McKenzie Harris —

As citizens across the U.S. took to the streets this summer, marching for social justice, equality, and police reform, students, faculty and staff from Florida State University joined the movement and grappled with how to address systemic racism not just in the nation, but also within the institutions of academia.

Following several high-profile use-of-force incidents in Tallahassee and an outpouring of concern by members of the FSU community, President John Thrasher announced creation of the President's Task Force on Anti-Racism, Equity and Inclusion. The group's immediate responsibilities include exploring the university's historical connections to race and ethnicity,

identifying racial and ethnic disparities on campus, and implementing initiatives in support of the diversity and inclusion goal in the university's strategic plan.

"Over the last several months, it has become clear FSU does not exist in a vacuum; instead, our campus culture mirrors situations confronting Tallahassee and the nation as a whole," said Maxine Montgomery, professor of English and the task force's chairperson. "Use-of-force incidents involving law enforcement in Florida's capital city along with local Black Lives Matter activism tell us that, despite its veneer of Southern charm and tranquility, Tallahassee is not insulated from the racial unrest gripping the rest of society."





While the task force was assembled in response to the nationwide call for police reform in the wake of violence directed towards Black citizens, specifically the tragedies surrounding the deaths of George Floyd, Ahmaud Aubrey, Breonna Taylor and others, it also responds to an open letter from FSU's Black faculty outlining a series of initiatives geared toward addressing issues of concern for faculty, staff and students of color.

### **Achieving inclusion**

The task force's membership includes 26 individuals representing FSU's student, faculty, staff, alumni, and academic constituencies and is led by a four-person executive committee.

As chairperson, Montgomery brings with her experiences gained through a career steeped in advocacy including years of service as an adjunct professor assisting FSU's Center for Academic Retention and Enhancement in its mission of recruiting, retaining, and graduating first-generation college students; scholarship in areas of critical race, gender, and post-colonial literary and cultural studies; and work on university committees, including the 2018 President's Panel on Buildings, Statues, and Naming.

Also serving on the executive committee is professor of history, director of the women's studies program, and three-time FSU alumna Maxine Jones. Like Montgomery, she served on the 2018 President's Panel on Buildings, Statues, and Naming. Jones, the task force's subcommittee chair on historical legacy, said FSU is her home and she wants it to be the best version of itself that it can be.

"When discussing history, we tend to sweep uncomfortable topics under the rug. Another responsibility we've been delegated is documenting the history of FSU in relation to race and ethnicity with an emphasis on the experience of Black people and Native Americans," Jones said. "We need to acknowledge our history, we need to own it, and we need to confront it, if necessary."

The task force is composed of a subcommittee on recruitment, retention and diversity training; a subcommittee on campus climate; and Jones' subcommittee on historical legacy. Each week, one subcommittee or the full task force assembles to provide a panel open for discussion.

Rawan Abhari, an undergraduate double majoring in Middle Eastern studies and economics, is among several students appointed to the task force and the only student serving on the campus climate subcommittee. Abhari provides perspective on how to intentionally engage students and meet their mandates for a better university environment.

"Understanding America's foundations in the continual fight for equity is paramount. One of

force's work and as well as the administration's dedication to lasting solutions.

"President Thrasher is deeply committed... He understands this isn't a short-term project that will be completed by one president and then upended by subsequent administrations; we're determining how the committee's achievements can be institutionalized long-term," Herrera said.

However, members of the task force understand they alone cannot drive the lasting change necessary to break the bonds of systemic racism and inequity.

"We have a chance to make a difference at FSU, but that change requires full participation from everyone. I invite broader participation through



Maxine Montgomery



Maxine Jones



Rawan Abhari

my committee's main objectives is working with the history department to cultivate a first-year curriculum around race, social issues, and local history," Abhari said. "More specifically, we're creating a new, consistent, and publicly-stored campus climate survey to give insight on the specific factors we must improve upon from the perspective of students, staff, faculty and alumni."

### **Results-driven activity**

Associate professor of history and faculty co-chair of the Latinx Faculty and Staff Network Robinson Herrera is a member of the subcommittee on recruitment, retention and diversity. He recognizes the sense of urgency in the task

public comment and written correspondence," Montgomery said. "I am making a special appeal for your input, as I am committed to seizing this moment in our national, local, and institutional history as a means of not only foregrounding issues of race that have been ignored on our campus, but also creating a more inclusive institutional culture." <

For the latest on the President's Task Force on Anti-Racism, Equity and Inclusion, and to join upcoming panels, visit [president.fsu.edu/taskforce](https://president.fsu.edu/taskforce).

McKenzie Harris is pursuing a master's in Media/Communication Studies. She earned a bachelor's in English with a concentration in Editing, Writing and Media in May 2020.



# Hot Water

*FSU-led team earns NSF  
grant to study effects of heat  
waves on sea urchins*

*By Tom Morgan*



Sea urchins are like a canary in a coal mine. They give scientists an early warning for the future impact of rapid and extreme warming events, and their reactions to events like El Niño and to climate change are immediate and dramatic.

A team of researchers from Florida State University, California Department of Fish and Wildlife, University of California, Davis, and University of California, Santa Barbara, is using a \$1.1 million National Science Foundation grant to better understand how heat waves impact urchin reproduction.

Daniel Okamoto, an assistant professor in FSU's Department of Biological Science, is the principal investigator for the grant.

"Climate change and extreme heat waves strongly affect sea urchin populations," Okamoto said. "When their numbers explode, sea urchins can devastate ecosystems by eating everything in their path. In northern California, heat waves mean massive amounts of baby sea urchins. In southern California, it's the opposite, heat waves collapse the number of new young urchins."

The study will focus on two primary factors believed to cause divergent outcomes: how temperature effects reproduction and how warming events effect ocean circulation.

### **Direct effect**

Warmer water requires urchins expend energy just to stay alive, which could mean less energy for females to produce eggs or the possibility populations may not reproduce at all. Persistently warm water from a different geographic landscape farther south may also be a culprit.

"Warm days aren't going to kill a peach tree, but peach trees need a certain number of cold days to reproduce," Okamoto said. "We think something similar could be happening with sea urchins."

Heat also changes ocean water movement, which could impede survival and delivery of free-floating urchin larvae to near-shore ecosystems. The team will rely on oceanographic modeling led by UC Santa Barbara to characterize how circulation patterns have changed over the last 30 years.

Urchins are an ideal species for the study, in part, because of their quick response to temperature and ocean circulation changes. And

they play an important role in near-shore ecosystems as a major herbivore and an important recycler of nutrients. But urchins can also turn out to be pests with the power to devour kelp forests and can continue to live even after the food is all gone.

### **Zombie urchins**

Nate Spindel, an FSU doctoral student in biology, is leading work on a separate but related project about "zombie urchins."



Left: Nate Spindel on a dive. Above: Daniel Okamoto. Courtesy photos.

*Dr. Okamoto's approach to science involving the creative combination of laboratory and field studies and cutting-edge computer modeling struck me as a productive and fascinating path forward.*  
— **Nate Spindel, Doctoral Student**





"Such urchins can create and then persist in barrens reminiscent of underwater versions of dystopian wastelands you might see on 'The Walking Dead,'" Spindel said.

Zombie urchins can slow their metabolism, contributing to their unique capacity to weather famine. Spindel's work could provide insight into how temperature affects metabolism and, in turn, impacts energy for reproduction, Okamoto said.

The project's interdisciplinary approach is ambitious and exciting and a perfect example why Spindel chose FSU for his doctoral work.

"Dr. Okamoto's approach to science involving the creative combination of laboratory and field studies and cutting-edge computer modeling struck me as a productive and fascinating path forward."

### **Generational research**

The NSF project takes advantage of data and urchin samples collected by researchers and students since 1990 from the California coast. Okamoto joined that collection effort as a UCSB graduate student in 2009, but the work was initially begun in the 1980s and '90s by his collaborator Stephen Schroeter at UCSB, Tom Ebert at Oregon State University and others.

A component of the grant calls for working with K-12 students, in order to empower the next generation of scientists to think about the local consequences of climate change. FSU is distinctly prepared to carry out such a mission through its Office of STEM Teaching Activities outreach programs.

Barbara Shoplock, an FSU biologist and director of OSTA's Saturday-at-the-Sea programs, will help translate this Tier 1 research into formats most accessible for budding scientists. Middle and high school students will day trip to the FSU Coastal and Marine Laboratory and collect urchins in the Gulf of Mexico and be part of monitoring how local populations are reacting to a changing climate.



*Sea urchins in Gwaii Haanas, Haida Gwaii, British Columbia. Photos by Lynn Lee (top) and Ryan Miller (above).*

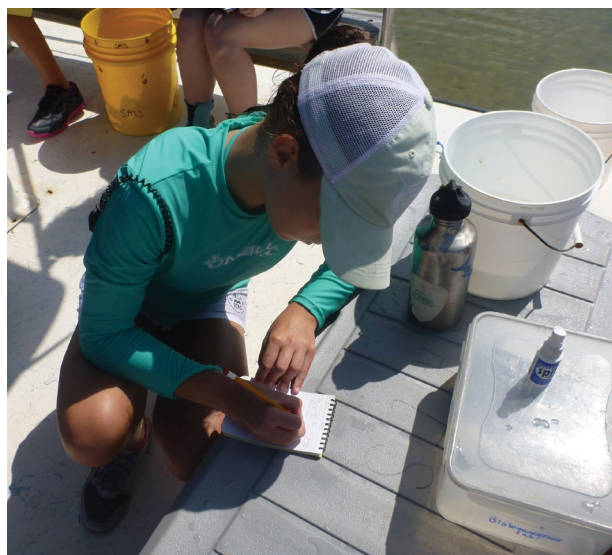




*Right: Daniel Okamoto (center), Ondine Pontier (left) from the Hakai Institute in Canada, and Nate Spindel (right) conduct field work in British Columbia. Photo by Markus Thompson. Below: Student researchers analyze sea urchins at the FSU Coastal and Marine Laboratory. Courtesy photos.*

“Dr. Okamoto’s grant will enable us to bring more actionable science to these middle and high school students and allow them to become ambassadors for awareness in their local communities,” Shoplock said. “That matters because now, more than any other time in human existence, we are aware of the fragile, interconnected nature of the world that we live in.”

The availability of resources like seafood is not guaranteed, Okamoto said. It’s critical to first understand how near shore ecosystems respond to a change in climate in order to find ways to mitigate those effects. <





FLORIDA STATE UNIVERSITY  
COLLEGE OF ARTS & SCIENCES

## Nuclear physics lab produces generations of elite scholars, research

For 60 years, the John D. Fox Superconducting Linear Accelerator Laboratory at Florida State University has been an incubator for cutting-edge experimentation in fundamental and applied physics and launched the careers of innovative faculty researchers and bright new students. The Fox lab opened in 1960, following installation and assembly of the 12 Mev Tandem Van de Graaff accelerator seen here. Visit [artsandsciences.fsu.edu/news](https://artsandsciences.fsu.edu/news) to read more about the Fox lab's history and current research and to see historical photos.

*Photo courtesy FSU Digital Library, Heritage & University Archives, "The Nuclear Science Program at the Florida State University," R.J. Keirs, October 1962.*



## SPECTRUM

FLORIDA STATE UNIVERSITY COLLEGE OF ARTS & SCIENCES

The official magazine of the Florida State University College of Arts and Sciences

Sam Huckaba  
Dean

Heather Athey  
Editor-in-chief

Marc Thomas, FSU Creative Services  
Design

### Contributors

Rodney Campbell  
Amy Farnum-Patronis  
McKenzie Harris  
Rebecca McCandless  
Tom Morgan  
Audrey Post  
Amy Robinson  
Kati Schardl  
Stephanie Vivirito  
Bill Wellock

### Photographers

Bill Lax  
Elsa Lovejoy  
Bruce Palmer  
Amy Robinson

Letters to the editor  
[as-dean@fsu.edu](mailto:as-dean@fsu.edu)

Visit the college online  
[artsandsciences.fsu.edu](https://artsandsciences.fsu.edu)

