FLORIDA TECH

MAGAZINE

FALL 2022

Back to the Moon

Part of the Exploration Ground Systems crew, 25-plus Florida Tech alumni are playing integral roles in virtually every aspect of NASA's Artemis campaign for the moon.

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Montgomery Mural: Breaking Barriers

The new Julius Montgomery mural permanently honors the legacy and influence of Florida Tech's first African American student. Montgomery played a pivotal role in the university's success during a difficult time of racial injustice. He was also the first African American technical professional to work at Cape Canaveral. Commissioned by the Florida Tech Alumni Association, its board of directors and the Office of Alumni Affairs and painted by local artist Ian Soden, the mural is on the south wall of Evans Library's third floor.

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On the cover: On Launch Pad 39B June 14, the Artemis I Space Launch System and Orion spacecraft, atop the mobile launcher, were being prepared for a wet dress rehearsal to practice timelines and procedures for launch. Also visible is Artemis' ultimate destination: the moon. Photo: NASA

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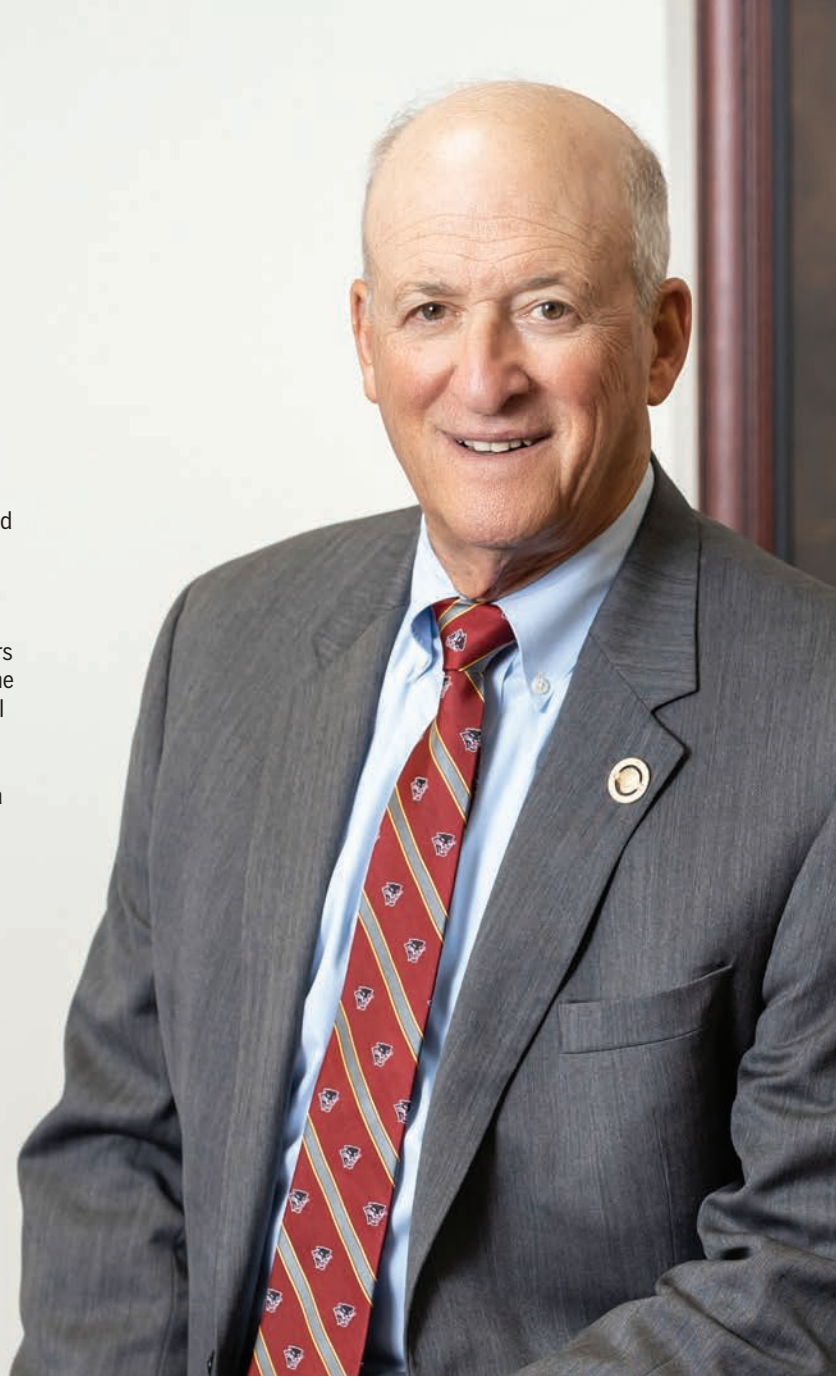
A MESSAGE FROM THE **INTERIM PRESIDENT**



It's my pleasure to serve as Florida Tech's interim president. I'm taking great joy in getting to know the campus, its students, faculty, staff and alumni. What a remarkable educational environment where great potential is realized every day.

Clearly, this university is a special place with no shortage of people who care deeply about the institution. I've been greatly impressed with the dedication and commitment I've encountered in my first few weeks here.

Florida Tech's unique mission as a STEM university means that we're a critical piece of the United States higher education landscape. Educating the engineers, scientists and entrepreneurs of tomorrow is integral to our mission. To do that well requires the expertise embodied by our faculty, giving our students impactful educational experiences so they may go on to a vast array of meaningful careers. This fact is demonstrated by the many incredible graduates who continue to improve our world. Florida Tech alumni make a lasting impact wherever they serve.

I'm grateful to have had a number of wonderful professional opportunities across my career and have been a part of some amazing teams. It is a humbling opportunity to be part of Florida Tech's team, and I'm excited to collaborate with the hardworking people of this university. Florida Tech has an important future that we're all shaping—together—right now. Let's keep building together.

Sincerely,

Robert L. King, J.D.
Interim President

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New Mertens Marine Center Provides Lagoon Access and Lab Space for Students and Faculty

As their boat returns to Florida Tech's anchorage at the mouth of Melbourne Harbor, students grab the samples they just collected and head for the parked cars. Up next is the 10-minute drive to campus, where they will hustle to a lab to process their samples.

With the opening of the university's newest educational facility, that cumbersome, post-fieldwork process will be replaced by a new, previously unavailable approach: walking from the boat to a lab in the new Mertens Marine Center, just feet from the docks.

That proximity matters.

"This facility enables us to be more effective in accessing the natural environment and processing freshly collected samples within minutes of returning to the shore," said Kevin Johnson, a professor of oceanography and program chair for a host of related majors, including environmental science, environmental resource management and sustainability. "There are many types of samples for which quick processing is desirable for accuracy and quality of outcome. There will also be the opportunity for engineering projects to be developed and tested in water just steps from the development venue."

The 3,000-square-foot, $1.25 million building overlooking Crane Creek features two research/lab spaces, a conference room and two faculty offices. It will serve up to 140 undergraduate and 50 graduate students in ocean engineering, oceanography, environmental science, marine biology and sustainability.

And like Florida Tech's space heritage, imbued in the university from founding president and rocket scientist Jerome P. Keuper, this building has an important and illustrious pedigree.

Lawrence and Margarete Mertens were friends with Keuper, and the Mertenses both were avid scuba divers. Lawrence Mertens would go on to serve as the university's first marine biology instructor—at Keuper's request—and later, the couple became major Florida Tech benefactors, including a $1 million gift to build the marine center.

> "Florida Tech is all about 'hands-on,' and the Mertens Marine Center location provides the perfect setting for hands-on work—right next to the water where we have docks and keep our boats."
>
> —Kevin Johnson

Lawrence Mertens passed away in 2017, Margarete Mertens in 2018.

In the building that bears their name, their legacy and Florida Tech's unparalleled hands-on education will flourish.

"Florida Tech is all about 'hands-on,' and the Mertens Marine Center location provides the perfect setting for hands-on work—right next to the water where we have docks and keep our boats," Johnson said. "This will take the already excellent education and training Florida Tech students receive to the next level."

The building will serve as a base of operations for research and student training in the marine sciences and ocean engineering. Research on environmental restoration and solutions will be conducted there by both graduate and undergraduate students. Graduate student thesis and dissertation projects and undergraduate senior design projects will also be carried out in the center.

These projects will cover a very broad variety of science and engineering, including studies of invasive species, living shorelines, plastics pollution, eutrophication, submersible vehicles, energy generation, population biology, harmful algal blooms, oyster restoration, sediment geochemistry, nutrient flux, bathymetry, dredging techniques and restoration efforts.

"The center's location is ideal for the estuarine and environmental coastal zone work for which Florida Tech is well known," Johnson said. "What had been missing until now was a well-outfitted base of operations for science and engineering adjacent to the water."

Sorting Cells to Help Fight Cancer

New equipment in the Nelson Health Sciences building is advancing the university's biomedical research in big ways. The Bio-Rad S3e Cell Sorter is a flow cytometry tool that can monitor, sort and isolate single cells, while being simple enough for students to operate.

One project underway in the Kim Guisbert Lab involves isolating individual cells that have been genetically engineered using CRISPR technology to investigate a pathway important in cancer. Understanding how this pathway becomes altered in aggressive cancers has the potential to lead to the development of new anti-cancer therapeutics. This is the first use of the CRISPR system at Florida Tech.

FAMILIAR FACES:

Dona Gaynor

A SERIES CATCHING UP WITH THE CAMPUS FIGURES WHO MADE YOUR TIME AT FLORIDA TECH MEMORABLE

> “It’s a great feeling to know that I have made a difference in so many lives and to see them as successful professionals.”
>
> —Dona Gaynor

Director of career services **DONA GAYNOR** ’92 M.S. has been with the university for 35 years, making an impact on the campus community along the way. We spoke with Dona about her time at Florida Tech, her evolving role and more.

You’ve worked at Florida Tech for 35 years—what’s the secret to that kind of longevity?

I think the secret is that I love what I do, which is helping students find great careers and become successful professionals and business owners. I love helping students find their dream jobs or careers and making the connections with employers that make it happen. I enjoy the fact that I not only work with students and faculty on campus but also with companies and agencies in the community.

Working in career services, how have you seen the types of skills employers seek in their new hires—or even the types of jobs themselves—evolve throughout the years?

Obviously, technology has drastically changed the types of skills that are sought by employers and has also changed the types of jobs. Things like cloud computing, computer-aided modeling, automation and 3D printing were not as prevalent or even in existence in the beginning of my career but are considered required in many of our STEM degrees today. One thing that hasn’t changed is that employers still want new hires to have strong soft skills, such as communication, teamwork and problem-solving, but the tools used to demonstrate these skills have become more automated and computer-based. Even just the last two years, during the pandemic, drastically changed how individuals work, with so many more people working virtually from home.

How would you describe your relationship with the students?

We become close to the students who spend a lot of time in our office with appointments or attending events, especially students who enroll in the co-op program. I have had many students who I’ve worked with in the past stay connected as alumni, and they are now recruiting students for their companies. Some tell me how much my advice and assistance helped them start their careers. It’s a great feeling to know that I have made a difference in so many lives and to see them as successful professionals.

How have you seen the university and/or your department grow and change over the years?

There have been many major physical changes at the university, with several new buildings, especially over the last 10 or 15 years, and there have been changes in the types of majors that are offered to keep up with the changing economy and technology. Our department has not grown that much in terms of staffing but has become more efficient, as we use technology and software tools to provide more services to students and employers.

What do you see in the future for Florida Tech?

I see a very bright future for Florida Tech because we are offering the types of majors that are in demand, and we are attracting some of the best and brightest students in the world.

Toby Daly-Engel Featured on Nat Geo SharkFest Program

Renowned shark biologist and director of the Shark Conservation Lab Toby Daly-Engel appeared on “Shark Attack Files,” an eight-part “SharkFest” series from National Geographic that uses cutting-edge tools to investigate many aspects of shark attacks around the world. She is in the "City Bites" episode, which focuses on shark encounters in city waterways.

Farm-to-Table Produce on Campus

There is a farm in the lobby of Panther Dining Hall, but you won't see hay bales and bovines. Instead, the vending machine-sized boxes in the lobby—where the fish tank used to be—are two active, high-tech, soil-free growing operations from the Virginia-based company Babylon Micro-Farms. Described as a "cloud-based vertical farm," each system can provide cultivation advice and cues on when to harvest via an app.

That is just one of several unique aspects to this effort, which was spearheaded by executive chef Jon Skoviera and Michelle Novak, manager of Panther Grocery. The system automates the process of growing produce through a series of sensors, lights, air channels, nutrients, cameras and irrigation.

More importantly, roughly every six weeks, the microfarms will produce leafy greens, herbs, sprouts and more. The system produces as much produce in 15 square feet of space as 2,000 square feet of traditional farmland, the company said.

Already, a preliminary "mini-harvest" has yielded a batch of pea shoots and beet microgreens.

"We will be using the harvests to supplement our salad bar and to sell in Panther Grocery," Skoviera said. "Can't get any fresher than our lobby farm to table."

Honoring a Legacy

BILL JURGENS '79 M.S., Florida Tech's retired athletics director of 44 years, addressed a crowd of 300 athletics alumni who visited campus July 23 to celebrate his legacy at the university and the accomplishments of the athletics program.

The Florida Tech Alumni Association hosted the event, which featured Florida Tech president emeritus Anthony J. Catanese as the master of ceremonies. All ticket sales and sponsorships supported the Bill Jurgens Rowing Center Endowment Fund, contributing $47,000 to the fund's total $447,000 of gifts and commitments.

Faculty Kudos

Felipa Chavez, assistant professor of clinical psychology and director of Building Blocks: PCIT at Florida Tech, was awarded a $25,000 grant to train Philadelphia-based Black and Latino behavioral health clinicians in culturally sensitive Parent Child Interaction Therapy (PCIT).

The goal of training these clinicians is to increase the dissemination of PCIT treatment to both Black and Latino families with children diagnosed with autism spectrum disorder (ASD) and co-occurring disruptive behaviors.

Michael Splitt, assistant professor of meteorology in the College of Aeronautics, won two awards at the spring WxChallenge, the North American collegiate weather forecasting competition.

In the challenge, top faculty and student meteorologists forecast the maximum and minimum temperatures and precipitation and maximum wind speeds for select U.S. cities. Over a 10-week period, they compete for honors as the top weather forecaster in North America.

Splitt won a Tournament Final Four award for his Wichita Falls, Texas, forecasting, and a Runner Up award in the Faculty/Staff category for his forecasting of Baltimore's conditions.

Geoffrey Swain, professor of oceanography and ocean engineering and director of the Center for Corrosion and Biofouling Control, has been named to the jury of a first-ever competition to develop innovative solutions and technologies that may improve the prevention, management and monitoring of marine biofouling.

The Biofouling Innovation Challenge is a collaboration of the World Ocean Council and The Ocean Opportunity Lab. A global event with submissions expected from multiple countries, organizers have chosen a nine-person jury of U.S. and international experts described as "professionals that have significantly contributed to the research and overall development in the maritime industry."

Making a Splash

Panther Swimming Great Savannah Brennan on Athletic, Academic and Future Successes

By Jerry Durney

Nearly six months after completing the most decorated career in Florida Tech women's swimming history, everything **SAVANNAH BRENNAN** '21, '22 M.S., has accomplished still hasn't sunken in for her.

"Although I will always be grateful for the honors and awards I have received, I am not sure if I have completely grasped the extent of my swimming career," Brennan says.

Brennan's Panther swimming résumé stands among some of the greatest scholar-athletes Florida Tech has produced in the 21st century. She is the school record holder for fastest time in the 500 freestyle, 1000 freestyle, 1650 freestyle, 200 breaststroke and 200 and 400 individual medley. Brennan is also a part of four school-record-holding relay teams.

Brennan participated in the NCAA championships four consecutive years, and in 2022, she became the first All-American in program history, earning the honor in the 500 freestyle, 1000 freestyle and 400 individual medley.

While she is truly honored by the mark she's left on the program, Brennan can't wait to see who takes the program to the next level in the years to come.

"My name on the record board is not only a representation of my accomplishments in the pool, but the efforts made by my team and coaches in pushing me to achieve my goals," she says. "While I am proud to see my name on the record board as a symbol of the countless hours I poured into the sport,

I know records are meant to be broken, and I can't wait for the next athlete to prove themselves."

Brennan was even more accomplished in the classroom.

In June, she was named Sunshine State Conference (SSC) Female Scholar-Athlete of the Year for a third consecutive year, becoming the first person to do so. She completed her undergraduate degree in genomics and molecular genetics and biomedical science with a minor in nanoscience and nanotechnology with a 3.97 GPA while pursuing a master's degree in biotechnology. In July, the SSC named Brennan the 2021–22 Woman of the Year—Florida Tech's first—and she has been nominated for the NCAA Woman of the Year award.

Achieving so lengthy a list of accomplishments is not an easy feat, and Brennan can attest to how much physical and mental dedication it takes to reach—and maintain—those standards.

"On my worst days, as I was beaten down by practices, slammed by homework, sleep-deprived and running on what seemed like no fuel, I would ask myself, 'Why continue? Is it all worth it in the end?' Coming out on the other side of a 16-year swimming career, I can tell you, it is," she says. "Throughout collegiate swimming, I learned to set goals for myself, short-term and long-term. These goals did not only pertain to swimming, as I had goals for my academics, future career, mental health and personal growth. I always found myself falling back onto these goals as my reasons to continue. And with this, I challenged myself to always find ways to improve."

How did she manage to set and break her own school records and make it to multiple national championship events? By always believing the best is yet to come, she says.

"Even when I would swim a crazy personal-best time in a race, I never once told myself 'That's as fast as you'll ever go,'" Brennan says. "I saw my times on the record board as challenges, urging me to work harder and swim faster."

She credits her head coaches, Justin Andrade and David Dent, for helping shape her into the successful swimmer and leader she has become.

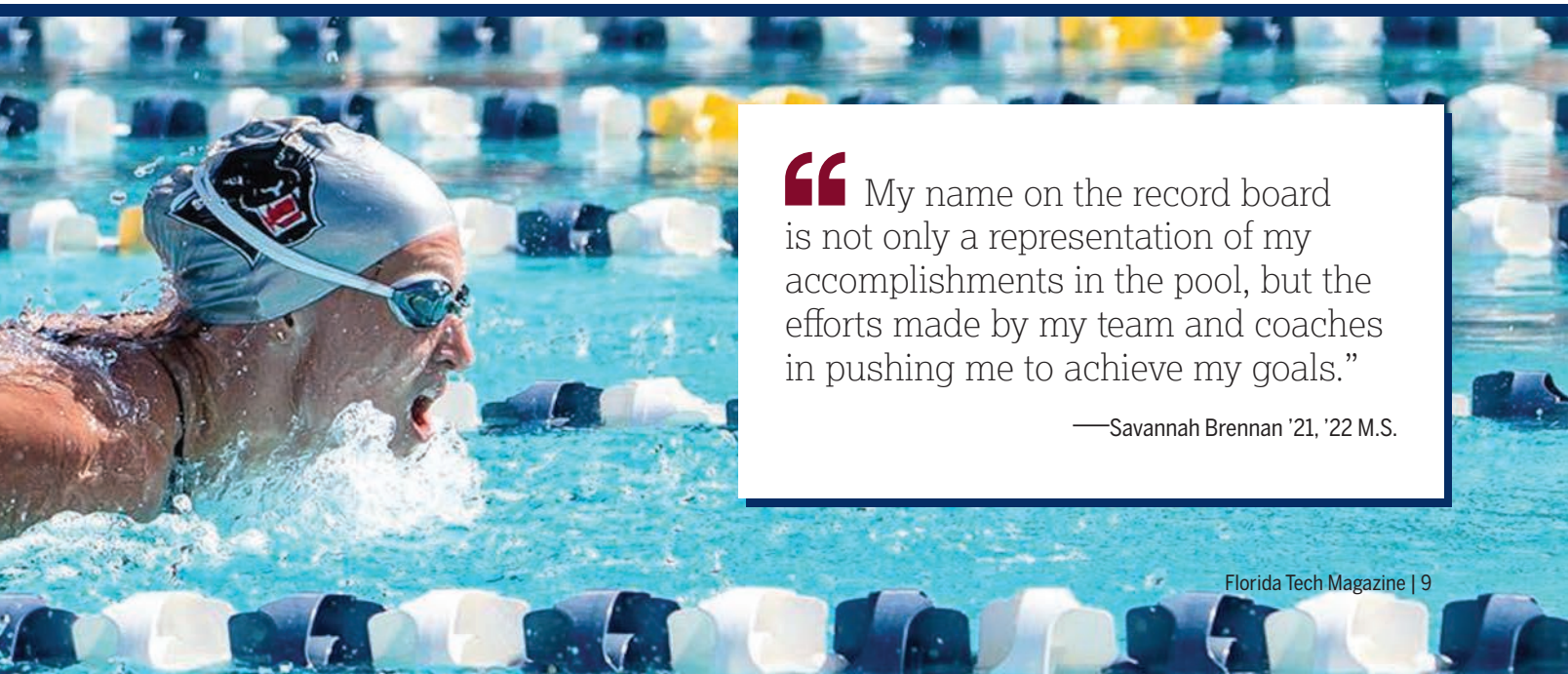
"Justin encouraged me to branch out beyond my comfort zone and become a captain. I had always been a determined, hardworking athlete, leading by example. But like anyone, I had room to improve," Brennan says. "As Justin demonstrated his belief in me, my confidence grew until I felt I could make a difference in the people around me."

Dent took over for Andrade, who now serves as the associate head men's swimming coach at the University of Pittsburgh, in the 2018–19 season. While Brennan admits it took them both time to adjust to their new roles, she credits Dent for helping her ascend to the heights she has reached.

"As a coach, David also pushed me to make goals for myself, in and out of the pool. As much as he wanted me to succeed in swimming, he wanted me to succeed in life. Having a compassionate and caring coach allowed me to grow into the person I am today and be confident in myself outside of the swimming world," she says. "David's unwavering faith in me, his ability to push me past my limits and his dedication toward strengthening the team all contributed to me excelling to the level that I did."

Today, Brennan works as a medical assistant at an ear, nose and throat clinic in Jacksonville, Florida, while she prepares to continue her education in a physician assistant program.

"As I plan my career path in the medical field, I find myself reflecting on how Florida Tech's academic opportunities got me to where I am today," she says. "Participating in laboratory research taught me how to adapt to adverse situations, ask questions and set forth plans to find the answers, communicate with people of various academic levels and lead projects from start to finish," she says.



> "My name on the record board is not only a representation of my accomplishments in the pool, but the efforts made by my team and coaches in pushing me to achieve my goals."
>
> —Savannah Brennan '21, '22 M.S.

TED PETERSEN

On the Emotional Effects of Covering Traumatic News Events

My most recent research focuses on a group of people who exemplify the idea of being "relentless." Journalists are known for their relentless pursuit of truth so citizens know what their governments, businesses, schools and leaders are doing. My focus has been on journalists who have covered mass shootings.

We hear about these tragedies too often—their locations become shorthand for the tragedy. Parkland. Pulse. Sandy Hook. Columbine. And now, Uvalde and Buffalo. These stories generate immeasurable pain, leaving parentless children or childless parents. Mass shootings have become too common.

Among the stories of sadness, we often hear stories about heroes: first responders, good Samaritans, brave law enforcement officers and protective teachers. The stories of the victims and heroes need to be told. So do the hard stories that explain how it happened, what could have prevented it and even who should be held accountable.

Those stories are told by journalists—another group of people who run toward, not away from, danger. That comes at a cost, my research has found.

I've interviewed 60 journalists who cover traumatic or dangerous situations. Some were at the Pulse nightclub minutes after the shooting started. Some drove immediately down to the Las Vegas Strip toward the Route 91 Harvest music festival. Some wrote stories, took photographs and videos, conducted interviews about murdered Marjory Stoneman Douglas students for months.

I have heard some powerful stories. An Orlando journalist stopped to pray with two men who were crying near the hospital before he left them to cover the shooting. One reporter in Las Vegas got to the scene so quickly that he saw himself on a police officer's body camera footage months later when the footage was released.

"The stories of the victims and heroes need to be told. So do the hard stories that explain how it happened, what could have prevented it and even who should be held accountable. Those stories are told by journalists—another group of people who run toward, not away from, danger. That comes at a cost, my research has found."

Several of the journalists described how they were able to hold their emotions back while working but were later overcome with grief. Maybe it was driving home from the scene. Maybe it was at home watching the television coverage. For one, it was triggered by a song from the musical "Hamilton."

Each journalist experienced the situations differently, often depending on their roles. The breaking news reporters saw firsthand the violence or the grief. The photographers were "protected" by viewing the scene through a lens but also focused on finding the heartbreaking visuals. The feature writers spent weeks learning and telling the stories of the victims and their families.

And in a truly relentless pursuit, investigative reporters fought government officials for access to records, documents and videos. As a result of a legal victory in Las Vegas, reporters were treated to a weekly documents dump, ensuring that at the very least, once a week, they had their heads deep into the tragedy. Their goal was to find out what happened and how it could have been prevented.

Unfortunately, nearly every journalist I interviewed said the newsroom leaders meant well but didn't really do enough to address the trauma the journalists experienced.

Now, I'm trying to tell their stories. I hope that newsroom leaders will better recognize the challenges and troubles that come from covering these kinds of tragedies. I hope my students—majoring in multiplatform journalism or strategic communication—and journalism students across the globe are prepared for the jobs they seek.

And I hope reporters stay healthy as they relentlessly cover these all-too-common stories and maybe help make them a little less common.

Ted Petersen is an associate professor of communication, program chair of the multiplatform journalism and strategic communication programs, and director of student media at Florida Tech. He earned a Ph.D. in mass communication from the University of Florida and has been at Florida Tech since 2010.

Researchers Study Algae-Bacteria Relationship to Understand Algal Blooms

A new Florida Tech study investigates symbiotic relationships between bacteria and algae that can trigger the occurrence, or worsening, of harmful algal blooms (HABs).

The research paper, "The in-situ release of algal bloom populations and the role of prokaryotic communities in their establishment and growth," was from ocean engineering and marine sciences professor Kevin Johnson, **XIAO MA** '14 M.S., '19 Ph.D, of the South China Sea Institute of Oceanology and the Southern Marine Science and Engineering Guangdong Laboratory, as well as researchers from the University of the Chinese Academy of Sciences. The paper was published in the July edition of the journal *Water Research*.

The research offered further insight into how blooms get started. Understanding this allows researchers to then explore how they evolve into HABs, which affect marine life and water quality in lakes and estuaries worldwide. The team studied what facilitated bloom initiation, looking at blooms in their earliest stages before they can cause harm.

HABs in the Indian River Lagoon have killed an estimated 60,000 to 70,000 acres of seagrass by blocking life-sustaining sunlight, Johnson said. Seagrasses are critical habitat for fish and small animals and a food source for many ocean grazers, such as manatees. Seagrass loss foreshadows the collapse of an economically and ecologically important coastal ecosystem.

"Most local harmful blooms are the algae blooming out of control, blocking light and depleting oxygen," Johnson said. "They're so out of control, they take over the water column. The other things that usually live there are suppressed and choked, and the water becomes opaque, either greenish or brownish."

On top of the physical and environmental factors controlling the algal bloom, the team now has evidence that bacteria living in the water column help algae by producing vitamins and nutrients they need. In turn, the algae convert those nutrients into forms useful to bacteria. It's a tight circle of symbiosis.

Nitrogen availability plays a strong factor in the health of the lagoon. Without human-sourced nitrogen, such as fertilizer or other pollutants, algae are not able to bloom, the water column stays clear and seagrasses have sufficient sunlight to grow. Johnson said there's plenty of nitrogen around in the absence of pollution, but the common form is not useful to most life in the lagoon.

"Nitrogen is everywhere, but it's in the wrong form," he said. "Without the bacteria converting that nitrogen, the algae are very limited in how much they can bloom. In an unpolluted estuary, bacterial nitrogen fixation makes occasional algal blooms possible. However, in a eutrophic estuary, where human-sourced excess nutrients are abundant, algae blooms are more frequent and severe, reaching harmful levels. Those excess nutrients are going to include a lot of nitrogen that's already organic nitrogen, meaning it's already been fixed or converted to a form that the algae can use. Estuaries around the world are having similar problems."

The team hopes the work done in this paper will provide a better understanding of the complex relationships between bacteria and algae and the nutrients they share with one another. This could provide insight into recent algal blooms and resulting fish kills plaguing the Indian River Lagoon.

COE CST Celebrates Conclusion of 12 Years of Research

Florida Tech participated in more than a dozen projects on topics including spaceports, lightning and spacecraft design.

The Federal Aviation Administration's (FAA) Center of Excellence for Commercial Space Transportation (COE CST) has concluded a successful 12-year run that saw important and impactful research, training and outreach in human spaceflight, industry innovations and a host of related topics.

Florida Tech participated in more than a dozen projects, including research into air and space traffic control considerations for commercial space, human factors in spacecraft design and measuring the electrical parameters of thunderstorms to help reduce weather-related delays and scrubs of launches.

Given the center's focus and Florida Tech's space roots, university faculty were, not surprisingly, involved with several space-related projects.

One project, "Spaceport Regulation in a Post-Modern World," included research from **DON PLATT** '01 M.S., '13 Ph.D., associate professor of extended studies and director of the Spaceport Education Center. With more launches from commercial providers and the burgeoning space tourism industry, a growing number of places are looking at hosting or developing spaceports.

There are currently 20 U.S. spaceports in nine states, according to the FAA, with the largest concentration—six—in Florida. Yet, with more companies working to make access to space easier, faster and eventually cheaper, having a growing constellation of launch sites will be critical.

The Florida Tech lightning research group from the department of aerospace, physics and space sciences—Hamid Rassoul, Distinguished Professor of Physics and former dean of the College of Science, together with his collaborators, visiting research professors Amitabh Nag and Ken Cummins—has done extensive lightning research throughout the COE CST program.

Cummins, a member of the NASA Lightning Advisory Panel, provided a summary of the group's work during the final COE CST meeting in April. The team's focus was primarily on better identifying onset and cessation of charge separation within clouds, or in other words, when ordinary clouds start becoming electrified to form thunderclouds.

"Our team was well aware of the significant impact of thunderstorm-related weather delays on launches, particularly at Kennedy Space Center," Rassoul said. "Indeed, beyond vehicle and payload issues, weather has been the single largest source of launch delays and scrubs on the Eastern Range."

Research has shown that for large launch vehicles, clouds' electric fields of about 10,000 volts per meter (10 kV/m) can result in triggering lightning. Unfortunately, such modest-sized electric fields may produce quite small electric fields at the ground.

So, the greatest weather-related uncertainty is due to inability of directly measuring the vertical electric fields aloft (within developing or decaying clouds) to assess the risk of triggering lightning during launches.

The original nine COE CST "core" universities were Florida Tech, Florida State University, New Mexico Institute of Mining and Technology, New Mexico State University, Stanford University, the University of Central Florida, the University of Colorado Boulder, the University of Florida and the University of Texas Medical Branch at Galveston. Baylor College of Medicine was added as a tenth "core" university in 2017.

Study Recommends Rewilding Galápagos Island

A new study led by Florida Tech recommends rewilding an island in the Galápagos with tortoises and rare plants to recreate an ecosystem irreparably damaged by whalers.

The study, "Human-induced ecological cascades: extinction, restoration, and rewilding in the Galápagos highlands," was published in *Proceedings of the National Academy of Sciences*.

Using microscopic fossils of pollen and spores found in the sediments of El Junco, a crater lake that lies at almost 2,000-feet elevation in the highlands of San Cristóbal Island, researchers from Florida Tech, the University of Arizona and the University of Illinois Urbana-Champaign tracked the disappearance of giant tortoises from the landscape.

The island is known to have had two species of giant tortoise, one a lowland specialist and one whose shell shape suggests that it may have ventured into the highlands. It went extinct before it could be documented by science.

Prior studies showed that a fungus, Sporormiella, lived in the gut of tortoises and cattle. When dung was defecated near the lake, the spores of Sporormiella would wash into the lake and preserve in the sediments accumulating at the bottom of the lake. The changing abundance of Sporormiella before settlers introduced livestock to the islands documents the population size of giant tortoises.

After raising cores of sediment from the center of the lake, the team found abundant Sporormiella in ancient sediments, evidence that tortoises had regularly visited the lake prior to A.D. 1800.

"We were surprised to find that by 1800, within a decade of whalers first landing on the islands, tortoises stopped visiting our rather remote hilltop lake," said team leader Mark Bush, Florida Tech ocean engineering and marine sciences professor.

The Galápagos Islands were only visited by pirates and wayward sailors prior to the 1780s. But rising demand for whale oil and overexploitation of Atlantic whale stocks forced whalers to explore the Pacific Ocean, as well. Whalers began operating around the Galápagos in the 1790s, and by the early 1800s, they were regularly visiting the islands.

Ships' logs show that the whalers collected an estimated 200,000 tortoises from the islands to take aboard their ships over a 70-year period. The tortoises could live for six months onboard without food or water and were a prized source of fresh meat.

"We think that as tortoises were captured near the coast, it reduced competition and the need to migrate far inland," said study co-author Diane Thompson of the University of Arizona.

With the loss of tortoises, the balance of plant species growing near the lake started to change. The species of tortoise that had been migrating up to the lake is thought to have gone extinct between 1830 and 1860.

The researchers also tracked the arrival of cattle and horses in the late 1800s and their impact on the system. Two genera of shrubs, Alternanthera and Acalypha, which had thrived around the lake when the tortoises were present, went into a major population decline and, ultimately, went locally extinct in the 1970s.

"We recommend reintroducing the close relatives of the extinct plants and tortoise, all of which can be found on other islands in the Galápagos," said Jessica Conroy of the University of Illinois Urbana-Champaign, another study author.

Restoration of the El Junco area should emphasize exclusion of livestock, reintroduction of tortoises and expansion of the ongoing plantings of Miconia to also include Acalypha and Alternanthera, the authors suggest.

They advocate for this rewilding to promote habitat restoration and considering the socioeconomic value of these highland ecosystems in providing tourist experiences.

The research was funded by a grant from the National Science Foundation.

Prime is a quantity.
Unique, a product unachievable by any two other numbers. *1, 3, 5 ...*

Prime is a quality.
Excellent, of the highest caliber. *Outstanding, Choice, Top-Notch...*

In both quantity and quality, this column features Prime Examples of what makes us Florida Tech.

PRIME EXAMPLES *of* CREATIVITY

To define "creativity" would demean it. Often artistic, never mundane, creativity lacks rules and exceeds boundaries. Originality, imagination, ingenuity—creativity is required by both the artist and the researcher. The engineer and the entrepreneur. The teacher and the student. The thinker and the doer. Particularly at Florida Tech, a hub of innovation and forward-thinking, creativity permeates everything.

Here are a few prime examples.

1 ARTS JOURNAL

Kaleidoscope is the university's student-run arts journal, a term staff has aimed to keep loosely defined since the publication's inception in 2008. Born from the ashes of *The Belletrist*, a literary magazine published from 1995 to around 2004, *Kaleidoscope* includes literary materials such as poems, essays, short stories and plays, as well as photography, paintings, graphic art, etc.

"*Kaleidoscope* has been a relentless advocate and outlet for freedom of expression. The artistic community at Florida Tech is small, but it is alive and well."

Ted Petersen, School of Arts and Communication assistant professor, director of student media and organizer of *The Florida Tech Crimson*'s Free Speech Week

3

EXPRESSIVE ALUMNAE

SALEM HADEED '86, business administration –finance

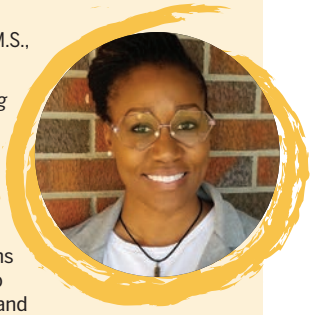
Actor, director, producer

She has recently appeared in TV shows, including "Manifest," "Only Murders in the Building" and "Law & Order: SVU," and in movies such as Marvel Studios' "The Falcon and the Winter Solider," "Abe," which premiered at Sundance Film Festival, and "Grape Leaves," which she also produced, co-wrote and co-directed.

PRIYANKA PRAKASH VALLETTA '12, civil engineering, Florida Tech String Orchestra and Concert Choir alumna

Electric violinist and singer, Positive Chaos

An active Melbourne-based five-piece rock and grunge band, Positive Chaos includes two Panther alumni: Priyanka and her husband, **DAVID VALLETTA** '12. Between gigs, both work as engineers with BRPH and NASA, respectively. The mantra: Life is chaos—so keep it positive, and have fun! Check out the group's latest album on Spotify and YouTube!



SHANITA ALLEN '05 M.S., applied behavior analysis

Author, *Let's Go Dreaming*

A Board Certified Behavior Analyst with a passion for writing turned her idea for one children's book into a nine-book series that aims to inspire young minds to "reach beyond the stars and pursue their dreams."

5

CLEVER DESIGN PROJECTS*

***as presented at the 2022 Northrop Grumman Engineering and Science Student Design Showcase**

Pyblocks

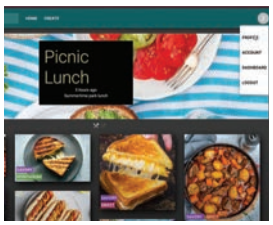
A website and application featuring an interactive "grid world," where users use code to move characters around, pick up treasure and cast magic spells, all the while transitioning from block- to text-based programming.

Olisemeka Adugwo, Michael Bardin, Bailey Smith, Xinjie Zhuang

Crossing Buddy

Powered by artificial intelligence and computer vision, Crossing Buddy is a wearable vest that helps visually impaired people cross the street through crosswalk sign identification, car detection and "stop" and "go" audio cues.

Elias Anastasopoulos, Alexander Esenwein, Joshua Quinto, Ryan Schwieterman



Trufflr

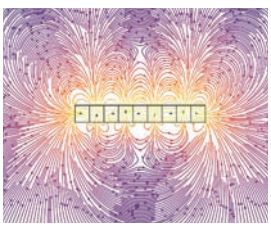
Think Facebook for foodies. Trufflr is an interactive web application through which users share recipes, searching, "liking" and saving their favorites while the system generates recommendations.

Tyler Le Cluse, Zev Lerner, Hunter Plaks, Austin Sisinni

S.H.A.R.K.

Disguised as a nurse shark, the Sub-sea Hydrodynamic Autonomous Recon Kit, or S.H.A.R.K., is an autonomous underwater vehicle designed to move into foreign harbors and collect valuable information undetected.

Evan Bridges, Matt Gutmann, Josh Tutela

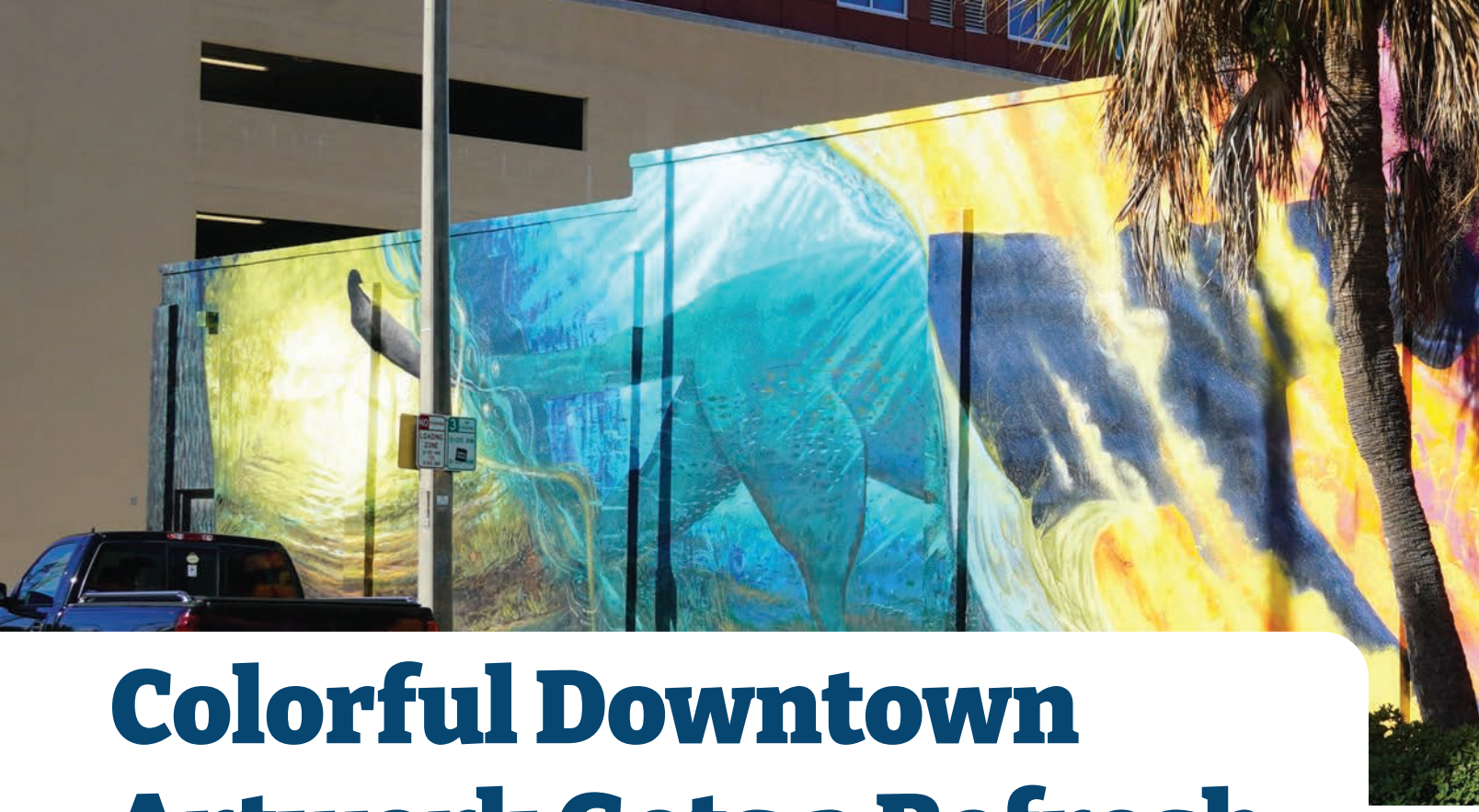


Halbach Array Charger

A theoretical design for a wireless electric vehicle charger, exploring the characteristics of a Halbach Antenna Array.

Abdallah Al Kindi, Omar Al Sinani, Sean Catron, William Gay, Lucas Harbour, Bin Huang, David Perry, Ariel Santiago, David Sebesta, Abigail Tunnell

WON BEST IN SHOW in the Electrical and Computer Engineering category at the 2022 Northrop Grumman Engineering and Science Student Design Showcase



Colorful Downtown Artwork Gets a Refresh

MELBOURNE MURAL, AT 7 YEARS OLD, NEEDED REPAIR AND RENEWAL

By Adam Lowenstein

Renewed and refreshed, the colorful Florida Tech mural in downtown Melbourne is once again ready to dazzle.

The 90-foot-long mural by Christopher Maslow on the western wall of the building at 800 E. New Haven Ave. at Waverly Place sustained a patch of damage where it appeared the wall had fallen away. Colors elsewhere had faded since it was unveiled in 2016.

Named after Florida Tech's motto, "Ad Astra Per Scientiam," which means "To the stars through science," the mural depicts a panther—Florida Tech's mascot—strolling through environments of land, sea and stars, capturing the university's STEM focus and its past, present and future. Within the mural are several "Easter eggs"—hidden nods to Florida Tech—that Maslow painted into the image.

Over the summer, the Melbourne-based artist spent weeks working on the mural. He repaired the damage, updated a few areas and totally repainted others, including depictions of space and sky. He said coming back to the mural nearly seven years after he had first painted it was also a chance to gauge his own growth as an artist.

"It's been seven years of accumulating skills, so I decided to repaint some certain areas," he says. "When people look at photos of the 2016 version and the new 2022 version, they will see some differences that are subtle but recognizable."

He adds, "We didn't want to deviate from the design. We just wanted to make it look fresh, bring the colors back to vibrant life."

Viewers also will see—if they really look!—five new Easter eggs.

This refurbishment was necessary because of what makes Florida so desirable: its relentless sunlight. Murals have their own lifespan, Maslow says, and paints fading in the sun is inevitable—even with the best paints and clear coating, both of which Maslow utilized.

DOWNTOWN ICON

"Ad Astra" is now one of 20 murals in downtown Melbourne, including several others by Maslow. It was among the first to be painted after Melbourne Main Street launched a campaign to boost public art in the area in 2015.

"Historic downtown Melbourne is an eclectic destination for people of all ages and offers something unique around every corner," says Kim Agee, executive director of Melbourne Main Street. "The Florida Tech 'Ad Astra' mural is one of the most iconic and photographed among the murals in downtown Melbourne and really solidified our community as a destination for mural viewing."

Maslow agrees, calling the mural a landmark for downtown. He said support from the property owner and the boutique that rents the space, and others, was critical.

"Everyone is really enthused and onboard with making sure this icon is something that's around forever," he says.

Sherri Whelan has seen the benefits of the mural's popularity. Whelan's

Tallulah 9 boutique has occupied the building that features “Ad Astra” since 2017.

“I think it enhances these older buildings, and I love all of the students coming down and taking pictures,” she says.

Another connection: Whelan’s husband, **TERRY WHELAN** ’89, earned his bachelor’s degree in business administration/accounting at the university, located just a few minutes from their shop.

“We’ve always loved the mural because my husband is a graduate of Florida Tech,” Whelan adds.

PARTNERSHIP IN PAINT

Beyond its value as public art, “Ad Astra” represents yet another connection between Florida Tech and Melbourne, the university’s hometown since its founding in 1958 by rocket scientist Jerome Keuper.

That’s another motivation for Maslow.

“It’s imperative we preserve and update and renew this mural because it is so iconic, but also because Florida Tech is one of the most important draws and influences in this community,” he says.

Agee says the mural embodies the connection between downtown Melbourne and Florida Tech.

“With homages to Old Florida within the mural, the masterpiece is the heart of the murals in downtown Melbourne. It adds to the overall ambiance and allure of our community,” she says. “It’s exciting each year to see current Florida Tech students and alumni visiting the mural and posing for photos. What a wonderful community legacy born from creativity!”

And now, in a sense, reborn.

NEW EASTER EGGS

The renovation and renewal of Florida Tech’s downtown Melbourne mural allowed artist Christopher Maslow to add five new Easter eggs. These are hidden—but findable—images and tidbits that touch on Florida Tech and its history.

- A plane to represent Florida Tech’s aviation programs
- A globe to represent the university’s international students
- The Apollo 11 rocket to represent Florida Tech’s space heritage
- The phrase “Countdown College,” an early nickname
- An ROTC shield, a nod to Florid Tech’s distinguished program

Panthers Shoot for the Moon

PART OF THE EXPLORATION GROUND SYSTEMS CREW, 25-PLUS FLORIDA TECH ALUMNI ARE PLAYING INTEGRAL ROLES IN VIRTUALLY EVERY ASPECT OF NASA'S ARTEMIS CAMPAIGN FOR THE MOON

By Karly Horn in collaboration with NASA Public Affairs

"***We are going!***" is the battle cry for NASA's Artemis campaign to fly a human-rated spacecraft farther than any other in the history of space exploration. The historic mission seeks to land the first woman and person of color on the moon, establish the first long-term human-robotic presence on and around the moon and, eventually, send the first astronauts to Mars.

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Panthers pictured above, left row, from left: Dion Ramiscal, Curtis Byrd, Josiah Ruelas, Keith Braun, Melanie Murphy, Raymond Francois

Right row, from left: Skip Williams, Jose Amador, Rebecca (Bec) Mazzone, Kristin Kendall, Sunita Ramnarinesingh, Michael Thompson

About the Mission:

Artemis I

The first uncrewed integrated flight test of NASA's Deep Space Exploration Systems: the Space Launch System rocket (SLS) and Orion spacecraft

1 Launch
SLS and Orion lift off from pad 39B at Kennedy Space Center.

2 Jettison Rocket Boosters, Fairings and Launch Abort System

3 Core Stage Main Engine Cut Off
With separation.

4 Perigee Raise Maneuver

5 Earth Orbit
Systems check with solar panel adjustments.

6 Trans Lunar Injection (TLI) Burn
Maneuver lasts for approximately 20 minutes.

7 Interim Cryogenic Propulsion Stage (ICPS) Separation and Disposal
ICPS commits Orion to moon at TLI.

8 Outbound Trajectory Correction (OTC) Burns
As necessary adjust trajectory for lunar flyby to Distant Retrograde Orbit (DRO).

9 Outbound Powered Flyby (OPF)
60nmi from the moon; targets DRO insertion.

10 Lunar Orbit Insertion
Enter DRO.

Mission Durations

Total.....26–42 days
Outbound Transit.....8–14 days
DRO Stay.....6–19 days
Return Transit.....9–19 days

A, B, C — Cubesats Deploy
ICPS deploys 10 CubeSats total.

11 — Distant Retrograde Orbit (DRO)
Perform half or one and a half revolutions in the orbit period 38,000 nmi from the surface of the moon.

12 — DRO Departure
Leave DRO and start return to Earth.

13 — Return Powered by Flyby (RPF)
RPF burn prep and return coast to Earth initiated.

14 — Return Transit
Return Trajectory Correction (RTC) burns as necessary to aim for Earth's atmosphere.

15 — Crew Module Separation From Service Module

16 — Entry Interface (EI)
Enter Earth's atmosphere.

17 — Splashdown
Pacific Ocean landing within view of the U.S. Navy recovery ship.

continued from page 19

Kennedy Space Center's (KSC) Exploration Ground Systems (EGS) could be considered the bow that will launch Artemis' arrow in the form of Artemis I, the first uncrewed integrated flight test of NASA's Deep Space Exploration Systems: the Space Launch System rocket (SLS) and Orion spacecraft (see illustration on page 20).

EGS develops and operates the equipment and facilities required to connect a spacecraft and rocket, transport the launch vehicle to the launch pad and launch it into space. Historically, the work centered around a single kind of launch vehicle—such as Saturn V or space shuttle. Today, however, EGS is preparing the infrastructure for several kinds of spacecraft and rockets, including the SLS and Orion spacecraft.

Among EGS' ranks are more than 25 Florida Tech alumni who lead, program, implement and will launch the Artemis I maiden mission around the moon. From engineers and analysts to managers, business people and computing experts, these Panthers have dedicated their careers—some, for decades—to prepare this first-of-its-kind infrastructure and capabilities.

Meet some of EGS' Florida Tech alumni and see what they're working on as they count down to liftoff.

MOBILE LAUNCHER 1 AND 2

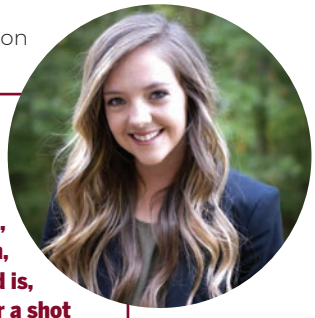
The 400-foot ground structures that are used for assembling, processing and launching the Artemis program missions. Mobile Launcher 1 (ML1) will launch the first three missions; Mobile Launcher 2 (ML2) will incorporate structural modifications and lessons learned from ML1.

FUN FACT:

ML1 weighs about 11.3 million pounds!

Alumni involved

- **John Moss '12 M.S.**
  Deputy Project Manager, ML2
- **Keith Braun '98**
  Ground Integration Engineer, ML1 and ML2
- **Jason McCaw-Binns '07, '09 M.S.**
  Lead Ground Integration Engineer, ML1
- **Lauren-Ann Graham '20** ▶
  Mobile Launcher Ground Integration Engineer, KLXS III contractor



"I absolutely love Florida Tech and currently am a mechanical engineering graduate student. I dream of becoming an astronaut, so Florida Tech—with its location, history and curriculum—was, and is, the obvious choice to prepare for a shot at the Artemis astronaut corps."

—Lauren-Ann Graham

SPACE LAUNCH SYSTEM (SLS)

The world's most powerful rocket and the only one capable of sending Orion, astronauts and cargo to the moon on a single mission.

FUN FACT:

While SLS has greater power than its predecessor, Apollo's Saturn V, it is over 40 feet shorter!

Alumni involved

- **Dion Ramiscal '94**
  SLS Core Stage Operations Project Engineer

LAUNCH PAD 39B

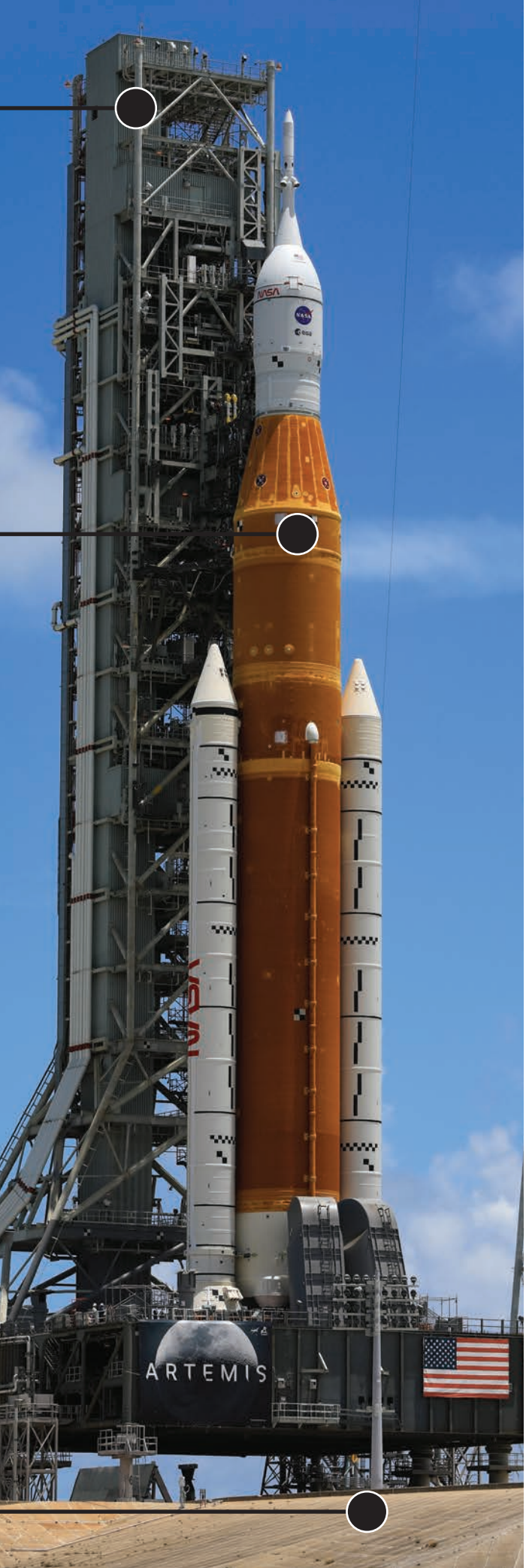
Originally designed for the Saturn V launch vehicle, EGS recently implemented modifications to upgrade it to a "clean pad" able to launch a variety of rockets, including the SLS.

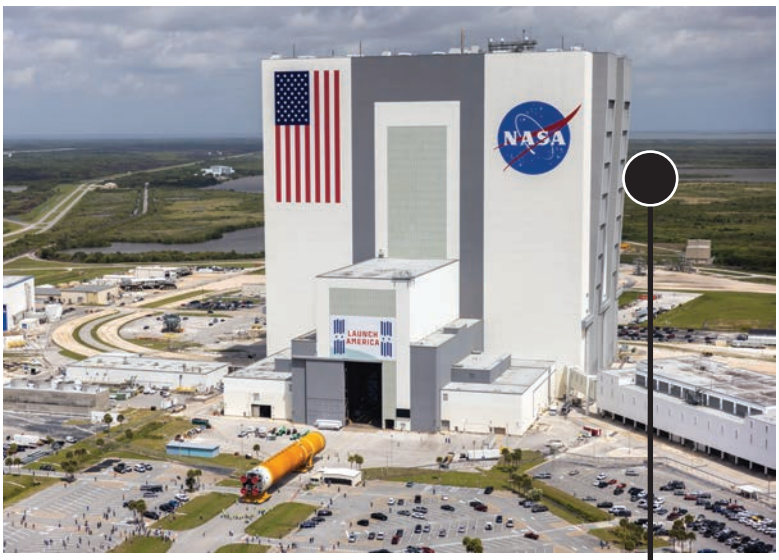
FUN FACT:

The pad's Ignition Overpressure and Sound Suppression System dumps 400,000 gallons of water—enough to fill 27 average-size pools—on the mobile launcher and inside the flame trench in less than 30 seconds!

Alumni involved

- **Sunita Ramnarinesingh '09, '12 M.S.**
  Project Manager, Launch Pad 39B
- **Kristin Kendall '95, '96**
  Project Manager, Launch Pad 39B
- **Josiah Ruelas '20**
  Launch Site Integration Engineer/Payloads





VEHICLE ASSEMBLY BUILDING (VAB)

The central hub of NASA's multiuser spaceport. From shuttles to external fuel tanks to solid rocket boosters, the VAB serves as the final assembly point for a variety of rockets, spacecraft and their parts—often, simultaneously.

Alumni involved

» **Martyn Eastwood '80**
Project Manager, KLXS III
Contractor

FUN FACT:

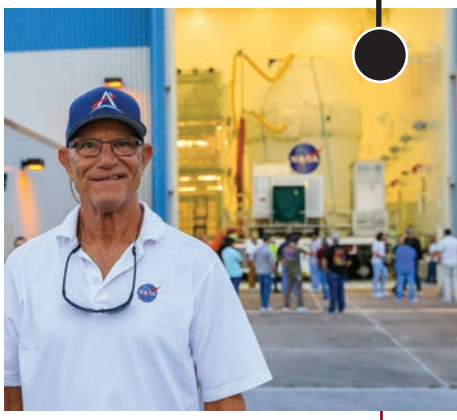
By area, the VAB is one of the largest buildings in the world—525 feet tall, 518 feet wide and covering 8 acres. Also, it is home to the largest American flag—209 feet by 110 feet—painted on the side of the building.

MULTI-PAYLOAD PROCESSING FACILITY

KSC's "gas station" for fueling rockets and payloads with hazardous commodities.

Alumni involved

» **Skip Williams '80** ▶
Mission Integration
Operations Manager



Williams and his team are responsible for preparing, fueling and processing hazardous commodities for space-bound vehicles—including the Orion spacecraft, which they have fueled and readied for its Artemis I mission around the moon. Once it has splashed down, the team will process Orion again to remove any residual hazardous materials.

"That's the heart of integrated engineering—it often has no end point but leads to the next process step. ... There's zero error tolerance when working with hazardous materials."

—Skip Williams

continued on page 24

continued from page 23

EGS LEADERSHIP

Outside of the Artemis program, EGS' mission is to transform KSC from a government-only launch complex to a spaceport capable of managing a variety of both government and commercial spacecraft and rockets.

Alumni involved

- **Sasha Sims '07 M.S.** ▶
  Chief of Staff
- **John Kunkle '02, '05 M.S.** ▶
  Chief, Ground Integration
- **Darrell Foster '91** ▶
  Ground Systems Integration Manager
- **José J. Amador '91, '94 M.S., '01 Ph.D.**
  Project Manager, Ground Control Subsystem (KGCS); Co-Lead, Integrated Product Team, KGCS/GSE Software
- **Marcia Groh-Hammond '83 M.S.** Logistics Lead
- **Jill Clark '03** NASA Programmatic Integration Lead
- **Michael Thompson '17**
  NASA Operations Project Engineer
- **Nadia Shokrani '20 M.S.** ▶
  Cross Program Schedule Analyst
- **Curtis Byrd '84 M.S.**
  Budget Analyst
- **John "Paul" Douglas '97**
  Cross Program Integration Engineer, KLXS III Contractor
- **Frederick Stotz '12 M.S.**
  Test Project Engineer, TOSC Contractor
- **Melanie Murphy**
  Finance Intern

"We place high emphasis on employee development, learning and mentoring to ensure we have the right skills in the right place to accomplish our goals. ... EGS is an incredible team of dedicated people who dream big and work immensely hard on behalf of the nation."
—Sasha Sims

As chief of staff, **SASHA SIMS** '07 M.S. facilitates collaboration among the leadership team, aiming to balance competing priorities for the Artemis mission.

DARRELL FOSTER '91 is a Brevard County native and Florida Tech legacy who was hired by NASA before he even graduated. Today, he leads the design, development and testing of KSC ground systems and infrastructure, overseeing several cross-functional project teams that consist of hundreds of people who enable critical launch processing requirements for the SLS, Orion and other NASA spacecraft.

"I was hired by NASA two weeks before graduation and literally took off my Florida Tech student ID badge and clipped on a NASA credential. ... It doesn't get any better than that in professional life."
—Darrell Foster

With oversight of both Artemis I and Artemis II-IV launch campaigns within his direct work scope, **JOHN KUNKLE** '02, '05 M.S., and his team translate mission requirements into the necessary KSC ground support equipment and infrastructure for an array of KSC operations and launches.

"No two days are ever the same, which is what makes this position both fascinating and complex. ... Every day presents a unique challenge in terms of solving technical issues as well as partnering solutions and building a team across the agency and industry."
—John Kunkle

"Florida Tech was collaboration-focused, and that prepared me for working on a large program like Artemis. A launch requires thousands of people working in unison and, working in planning, I see how all these people come together to realize something extraordinary."
—Nadia Shokrani

Like a conductor to an orchestra, NASA test directors such as **SHARIF ABDEL-MAGID** '10, '15 M.S., are masters at ensuring that process protocols are executed according to exact procedure and timing.

"Being at the critical mass of a launch is stressful but electrifying beyond description. Florida Tech was challenging, and I'm glad it was because it prepared me to work successfully in the greatest pressure-packed environment on Earth."

—Sharif Abdel-Magid

LAUNCH CONTROL CENTER (LCC)

Houses software enabling communication between launch team operators in Firing Room 1 (located in the LCC), team members in the VAB, mobile launcher and Launch Pad 39B, the astronauts aboard Orion, controllers at the Air Force Eastern Range and other NASA control centers.

Alumni involved

- **Sharif Abdel-Magid '10, '15 M.S.**
  NASA Test Director
- **Rebecca Mazzone '04, '09 M.S.**
  Command and Control Modeling and Simulation Team Training
- **Randal Goodmon '83**
  Facility Element Operations Manager

LANDING AND RECOVERY

Underway Recovery Test-7 (pictured) is one in a series of tests that EGS, in conjunction with the U.S. Navy, is conducting to validate procedures and hardware that will be used to recover Orion.

Alumni involved

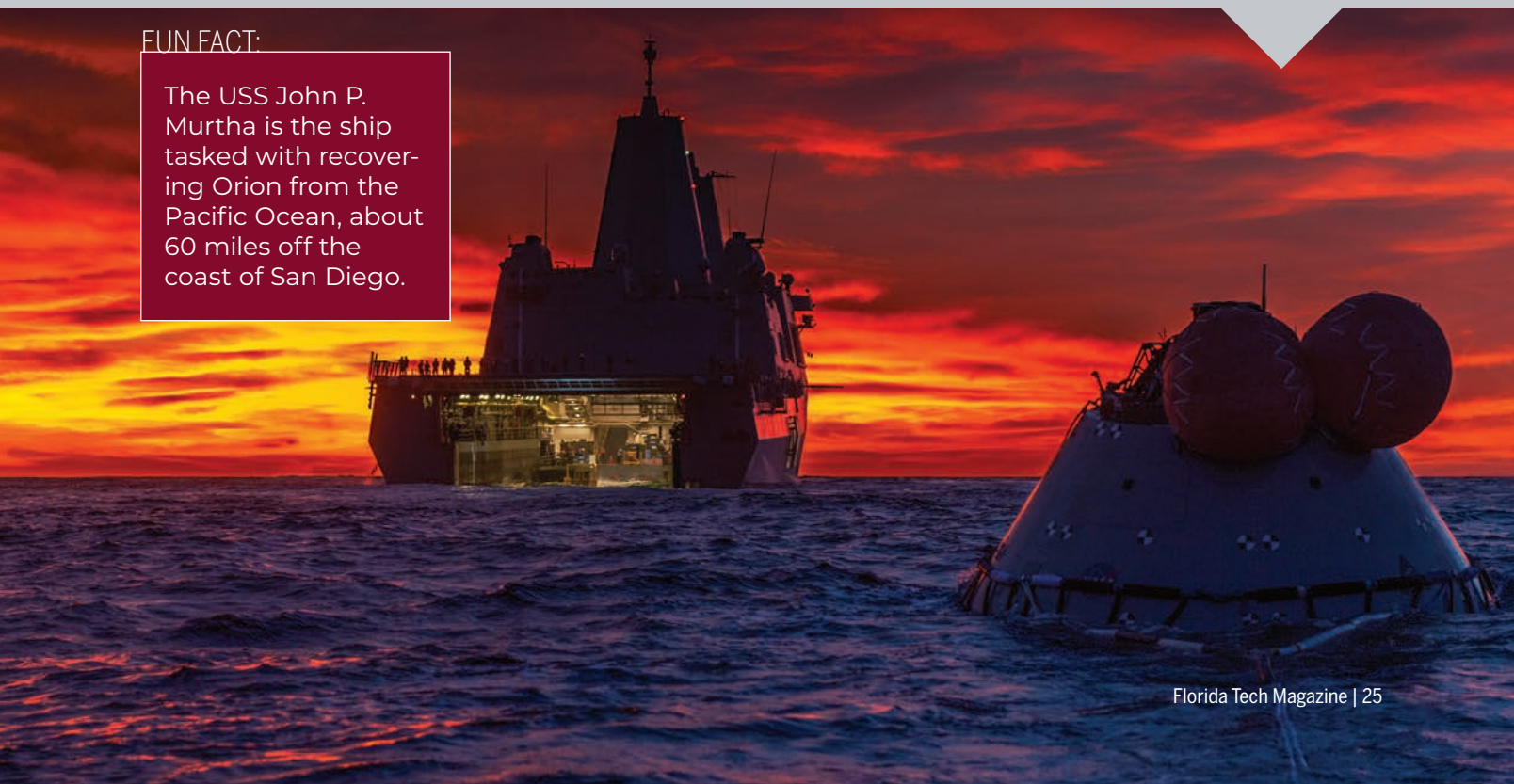
- **Christine St. Germain '07, '08 M.S.**
  NASA Test Director
- **Raymond Francois '20**
  Orion Operations Engineer, TOSC Contractor

"The Artemis I launch is going to be incredible, yet our Orion recovery team will rest easy only after the spacecraft safely splashes down in the Pacific and is loaded onto the recovery ship. ... That is when we'll fully exhale."

—Christine St. Germain

FUN FACT:

The USS John P. Murtha is the ship tasked with recovering Orion from the Pacific Ocean, about 60 miles off the coast of San Diego.



OPENING MOVES

Caltech and MIT alumnus, chess aficionado and new dean of the College of Engineering and Science, John Harris is bringing his strategy for success to Florida Tech.

By Karly Horn and Adam Lowenstein

John Harris, Ph.D.
Dean, College of Engineering and Science

Hanging on the otherwise blank walls of John Harris' new top-floor office in the F.W. Olin Engineering Complex is a movie poster for the 2003 documentary film "Game Over: Kasparov and the Machine."

The movie is about Garry Kasparov, the highest-rated chess player in history at the time, his initial victory and eventual loss to IBM supercomputer Deep Blue—the first loss by the human world champion to a computer.

The new College of Engineering and Science (COES) dean brought the poster with him from his last job as electrical and computer engineering department chair at the University of Florida (UF) because it depicts several of his interests: computers, artificial intelligence, a mind deep in thought and, yes, chess.

An avid, lifelong chess player and researcher of the brain and neural systems, Harris sees the game as both a mind-sharpening pursuit and an analogy for several of life's more complex components.

Of course, problem-solving and strategy are key, he says, but also the ability to read people, anticipate another's moves and, ultimately, invest the time and effort required to succeed.

These skills have served him well in his professional career and will continue to guide his vision and leadership as he considers his opening moves as dean.

Harris spent 29 years at UF, the Gainesville institution with more than 53,000 students, including the last 11 years as department chair. He arrived in the Sunshine State after earning his bachelor's and master's degrees in electrical engineering at 1 Massachusetts Institute of Technology and his 2 Ph.D. in computation and neural systems at California Institute of Technology.

With its small size—a total student population of about 2,400—and more focused educational offerings, Caltech is "most similar" to Florida Tech, Harris says.

"One of the things I took away from Caltech was the commitment to excellence they have. To me, it's excellence and impact that I want to bring to Florida Tech," he says. "I want to make Florida Tech the Caltech of the east. We have a lot of work to do."

Already, the university has what Harris calls 3 "pockets of excellence," and he is eager to work with executive vice president, provost and chief operating officer Marco Carvalho and other university leadership to implement a shared vision.

What does that vision look like? At COES, it looks like a college with 4 built-in advantages that now must take the next step.

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1 He later returned as a postdoctoral fellow at the MIT Artificial Intelligence Lab. 2 A program co-founded by Nobel Prize-winning physicist and Caltech faculty member Richard Feynman.

3

Pockets of Excellence

Aerospace

Our roots. Current research: space commercialization, flight test engineering, space robotics, fluid dynamics—to name a few.

Marine Sciences

Flanked by the Indian River Lagoon and Atlantic Ocean, field research abounds for oceanography, marine science, ocean engineering and climate science students and all marine-minded individuals.

Cybersecurity

Program has doubled in the last three years; FITSEC competition team is ranked No. 2 in the national Cyber Power Rankings.

Biomedical/ Health Sciences

Rapidly growing program evidenced by the new Gordon L. Nelson Health Sciences building and the state-of-the-art equipment it houses.

4

The Florida Tech Advantage

"Excellence in teaching, smaller class sizes, hands-on learning, a top-notch senior design program, active engagement of everybody—that's important and different."

—John Harris

Family Life

- Born and raised in Holmdel, New Jersey
- The fifth of seven sons with a father who was a civil engineer
- Two children who turned out very different: Noah graduated in spring from UF with a degree in the classics and is now teaching high school Latin. Maya is a computer science junior at UF.
- Wife: Wendy Huang, an experienced software developer

continued from page 28

That means moving up in the 5 rankings—from *U.S. News & World Report*, for one.

"Even though there are questions about how rankings are determined, people pay attention to them. Faculty, Ph.D. students when looking for a school, undergrads—every which way, people look at rankings. Even employers consider rankings," Harris says. "Rankings by themselves are not important, but all of these rankings are based on 6 metrics that matter very much."

Annual department research expenditures surged more than 150% over Harris's tenure as department chair at UF, approaching nearly $24 million. That is the seventh largest expenditure among all electrical and computer engineering departments in the U.S.

"Florida Tech is poised to expand its research program, also," he says. "I see a great opportunity to make an impact."

Particularly, as a joint engineering and science college, Harris says.

> "I joke that **1 + 1 = 3**. Combining different disciplines together creates something that is more than the sum of the parts. You get an additional benefit from that kind of interaction. Not many other places offer that combination." —John Harris

1+1=3 | Florida Tech is one of few universities in the country that combines engineering and science within the same college and department, i.e., chemical engineers are with chemists; biomedical engineers are with biologists; and aerospace engineers are with space physicists. **Another:** Caltech.

In fact, Harris' Ph.D. in computation and neural systems is interdisciplinary, combining elements of neuroscience, electrical engineering and computer science. He aims to develop further synergy by encouraging scientists and engineers to work more closely with the other academic colleges, like the Nathan M. Bisk College of Business.

Florida Tech's location amid the burgeoning aerospace industry excites Harris, too. He did 7 alumni outreach and company visits at UF, but Gainesville is not as heavy with industry as the Space Coast.

6

Metrics That Matter

In addition to several others and varying by ranking organization, rank-boosting factors to focus on include:

- Externally funded research
- Faculty awards, publications and citations
- Alumni giving
- Graduation and retention rates
- Academic reputation

7

Get Involved with your Alma Mater

TEACH a class as an adjunct faculty member

RECRUIT Florida Tech graduates

START OR PARTICIPATE in an internship/ mentorship program

PROVIDE feedback from your industry

COLLABORATE on curriculum and research

PARTICIPATE in Florida Tech's **Day of Giving** Nov. 10

"I'm really looking forward to that difference at Florida Tech. Given all of the companies around, there can be more involvement."

But first on Harris' to-do list: 8 listen.

8 Dr. Harris wants to hear from you!

Which majors and what kinds of skills are necessary to succeed in your field and/or at your company? In other words,

what gaps can we fill?

Submit your response. ▶

"My leadership style is to not make decisions without inputs," he says. "I will talk to as many faculty, staff, undergraduates, graduate students, alumni and industry leaders as possible—figure out what things are slowing us down at Florida Tech, and what can be improved."

One of Harris' priorities is developing students who are 9 more than just excellent engineers and scientists. They need to be exposed to topics and areas they may not normally explore, from data science to communication, he believes.

"To keep up with what's going on in society, in industry, in research, we need to prepare students for going out into the real world," he says. "That is a shortcoming at many, many schools—not enough emphasis on new things that are happening."

Like a chess pawn sacrificed, so, too, in life—and academics—are some of the best moves counterintuitive, he says.

Closing the textbook. Taking a class outside of the COES. Swapping study time for extracurriculars.

While they may not directly impact GPAs, these things develop students' emotional IQs, hone their abilities to relate to others and work in teams and, in short, cultivate their humanity. Because ultimately, people hire people—not GPAs, résumés or machines, Harris says.

In the end of the documentary, the machine defeated Kasparov. He lost a chess match, but he gained an important perspective.

"Machines have calculations. We have understanding. Machines have instructions. We have purpose. Machines have objectivity. We have passion," Kasparov said years after the match during his TED2017 speech. "… Our humanity is not defined by any skill, like swinging a hammer or even playing chess. There's one thing only a human can do. That's dream."

For Harris, that dream includes a stronger, better Florida Tech—well-rounded students; passionate, thriving faculty; transparent, insightful leadership; deep-rooted community connections; and most important, constant growth that means for him, the game is never over.

5 Rankings

No. 202
Best National University
U.S. News & World Report

No. 7 (out of 50)
Most Underrated College in America
Business Insider

No. 4
Florida University
Wall Street Journal/ Times Higher Education

Welcome Gift
The staff at the L3Harris Student Design Center gifted this 3D-printed chessboard that they designed and manufactured to Harris during his first week on campus.

Chess Champ by the Numbers

1710
Harris' U.S. Chess Federation rating

50
Master's and Ph.D. students honored the then Gator Chess Club advisor with a

60th
birthday gift: the inaugural John G. Harris Chess Tournament Feb. 19

ONE
course he taught on *The Queen's Gambit*, discussing the book, exploring chess game details and strategies that parallel those in the book and the Netflix mini-series, and playing in-class games

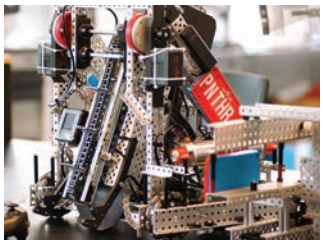
better than 75.9%
of 2-minute "Blitz" game players on Lichess—Challenge him: johngharris!

> "The time spent on these kinds of activities is more useful than taking a few more technical classroom courses. These experiences can make much more of an impact on students' careers."
>
> —John Harris

9 Outside the Classroom
Dr. Harris wants to develop well-rounded students by encouraging résumé-building activities like:

- Bisk College of Business courses in leadership, entrepreneurship and innovation
- Internships and co-ops with local industry
- Participating in clubs and competition teams

FITSEC Cybersecurity



Panther Robotics

Concrete Canoe

Esports and Athletics

A MESSAGE FROM THE FLORIDA TECH ALUMNI ASSOCIATION

It is safe to say that the last few years of the human experience were a strange, foggy blur and a prolific exercise in patience, minimalistic change and new norms.

The second quarter of 2022? Quite the opposite!

So many changes at Florida Tech have occurred, highlighting one thing for certain: We must keep moving forward.

First, we are happy to welcome Gina Yates and Erin Alvarado—both fellow alumni—to the Office of Alumni Affairs. Gina is an event-organizing specialist with a long history planning significant events for Florida Tech, and Erin has remained active in the Panther community since graduating in 2016. Welcome, Gina and Erin!

On the event front, I was honored to have been a speaker at this year's spring commencement ceremonies, which were some of the first in-person events since COVID-19 began. We had a full house, including many previous-year graduates who did not get to walk due to pandemic-related cancellations. The energy in the Clemente Center was palpable!

And if you didn't make it to our Grad Bash party the night before, you missed out! What a great evening with students, parents and fellow FTAA board members welcoming some excited graduates to the alumni association.

We honored our 2022 alumni award winners at a special event in mid-June, and we finally had the chance to honor an absolutely legendary Panther, our beloved former athletics director and rowing coach, Bill Jurgens, at the Athletics Legacy Celebration. The evening brought many athletics alumni back to campus and concluded with the famous crew chant heard at many a regatta after schooling the competition: "F-I-T! F-I-T! F! I! T!" The FTAA wishes Bill a healthy and relaxing future looking back on an incredible career and legacy at Florida Tech.

So, fellow Panthers, be resilient. Never give up. Be a Bill Jurgens. I know these are strange times, but now is the time to show our pride in this university. I ask that you always approach change with solution-based thinking and remember that communication is key. We are the voice of alumni—we are your voice. We can create change, but we need to be heard.

To all Panthers—from the board of trustees to alumni to students, teachers and staff—we're all in this together. So, let's hear each other and move forward to create a balance we all desire and keep our legacies intact.

Fin Bonset '96, '99 MSA
President, Florida Tech Alumni Association

YOUR ALUMNI ASSOCIATION OFFICERS

Fin Bonset '96, '99 MSA
President | Indialantic, FL | fbonset@vhb.com

Sherry Acanfora-Ruohomaki '93, '00, '05 M.S.
Vice President | Melbourne, FL | sherry@k9kampus.com

Chad Shoultz '96
Treasurer | Indialantic, FL | cshoultz@icloud.com

Warren Pittorie '15, '18 M.S.
Secretary | Melbourne, FL | wpittorie2012@fit.edu

Jody Cassell '07
Member-at-Large | Melbourne, FL | jcassell@brevardzoo.org

Chris Fernando '02
Member-at-Large | Raleigh, NC | cfernando@gmail.com

Kim Bozik '87
Past President | Chandler, AZ | kim.bozik@regan.com

Lost & Found

In early 2022, a woman reached out to the alumni office with a photo of a Florida Tech class ring she had found while hiking in the mountains of Tennessee. Engraved on the ring were the initials "R.W.M.," class year "1969" and the degree description "B.S."

Not knowing how long the ring had been lost, alumni office staff weren't sure whether they'd be able to locate the alumnus, but they decided to give it a try.

They turned to Florida Tech Connect, the university's exclusive online alumni network, searching the database for alumni who fit the credentials inscribed on the ring. They were pleasantly surprised that the results identified a single alumnus: **ROBERT MARTIN JR.** '69.

With only his mailing address on file, staff sent Martin a letter and photo of the ring to verify if he was, in fact, its owner. He called a week later, expressing his disbelief and delight that his ring had been found and the office had tracked him down. He said he used to wear the ring every day and was devastated when he'd lost it about a decade ago.

"I remember losing my ring at a gas station while on a gambling junket to Tunica, Mississippi. How it got to a forest in Tennessee … only the ring knows!" Martin said. "How nice it is to have my ring and its memories of Florida Tech back, as I wade through retirement here, on the Mississippi Gulf Coast."

Robert Martin Jr. '69, alongside wife Lisa, reunited with his class ring

Alumni Award Winners 2022

AERONAUTICS
Juan T. Moreno '87

BUSINESS
Kelle Wendling '93, '97 MBA

ENGINEERING
Wassim M. Haddad '83, '84 M.S., '87 Ph.D.

SCIENCE
Pedro J. Beltran '92

PSYCHOLOGY
Paul Cecala '85

KEUPER AWARD
Jorge Mesquita '83 (page 39)

Panther Pride

Better Together

After a long hiatus, in-person receptions are back and better than ever. More than 115 alumni gathered at the Orlando Alumni Reception in June at The Citrus Club.

Watch for reception announcements via email and social media for future gatherings in your area!

SPOTLIGHT ON

Thariq Kara

FLORIDA TECH CONNECTION: '07 B.S. mechanical engineering

DAY JOB: CEO and founder of NU Borders, a data science and big data analytics consultancy based in Washington, D.C.

PASSION PROJECT: Founder of a startup called Athstat, a company that works with sports teams to collect data and analyze performance.

IN HIS FREE TIME: These days, I primarily play with my kids, but I'm also rebuilding a 1997 Toyota Land Cruiser.

FAVORITE FLORIDA TECH MEMORY: I think it's probably hanging out with the tennis team in our Southgate apartment.

In fall 2003, **THARIQ KARA** '07 went from rebuilding cars to learning how to code. Kara had left his homeland, Zimbabwe, for the first time in his young life to start a degree program in mechanical engineering at Florida Tech.

"Even though Zimbabwe had a great academic system, technology was not something we needed to know too well. The first time I had a cellphone and a laptop was in the U.S.," Kara says. "So, you go from not knowing how to punch a phone number into a cellphone to going straight into programming and modeling—that was a big leap."

Kara, who also captained the Florida Tech men's tennis team in his sophomore year, is now the CEO and founder of NU Borders, a data science and big data analytics consultancy based in Washington, D.C., and Boston that focuses on the defense and homeland security space. He is also founder of a startup called Athstat, a company that works with sports teams to collect data and analyze performance. Prior to working in private industry, Kara was a government employee, with his last post being chief data architect at U.S. Immigration and Customs Enforcement.

How does a mechanical engineering alumnus become CEO of multiple data analysis companies?

While developing the university's first graphite, carbon fiber high-performance vehicle for his senior design project, Kara started to understand the end-to-end process of creating a product.

"It was more than just the technical aspects that were important; there were a lot of project- and task-management activities that were needed in order to bring the project to fruition," he says. "But the insight from my professors, especially from the ones who had been in the industry, made me understand that you had to be all in and love engineering practice in order to be successful, and I was not sure mechanical engineering was for me."

His interest in a different calling led him to earn his master's degree in engineering management from Duke University. However, he credits his Florida Tech professors for fostering his analytical nature and interest in thinking outside the box.

"I would say the most impactful thing from Florida Tech was the passing down of the real-world experience in engineering and the reality they used in preparing you for post-education. This included the ability to think laterally and put yourself in the end user's shoes."

These lessons helped Kara to develop and grow his multiple businesses, he says. While NU Borders supports national security-focused analytics, he's taken similar design concepts into the sporting world.

"I've taken a lot of the lessons from the analytical side of government work and the management of data and leveraged it in the sports world," Kara says. "While it is a challenge—it's going to take me the next five years to build it into a really solid product and business line—it's a passion project that's turned into a business, which is great.

—Kevin Boodoosingh

1970s

1 ALLAN SCHREIBER '75, '84 M.S., **SHERRI GRAULICH NICKELL** '83, **SHERRY MARTZ CARBERRY** '84, **PAUL OSLEY** '84 and **LORI KOTZER JENNIS** '88, **URSULA BELEN MCCAIN** '88 M.S. met up at the Florida American Industrial Hygiene Association Fall Conference 2021 in Treasure Island, Florida. Some lifelong friends, some acquaintances and one newcomer, the group enjoyed catching up and reminiscing on the "good ole days" at Florida Tech.

1980s

JONATHAN ZUNG '86, Ph.D., joined the Vial Scientific Advisory Board to support the Vial Dermatology contract research organization and its sponsors to further advance the field of dermatology clinical research and bring new therapies to the market.

2 JOSEPH WALDEN '88 MBA, '89 M.S., won the 2022 United States Powerlifting Association Drug Tested National Championships in Atlanta and set 13 national records and 11 world records.

1990s

3 LT. COL. JAMES REEMAN '92 recently partnered with his children to start their own business, Mile High Path 2 Pilot, empowering people to elevate into aviation opportunities. As a former military air and space commander, Reeman continues to advise forces in Eastern Europe and has recently entered his 25th year with Delta Air Lines, where he is a New York-based line check airman on the Boeing 757-767 fleet.

DAVID FLAW '93 has become the director of manufacturing engineering for Monarch Tractor, which manufactures a fully autonomous electric tractor.

4 MILO ZONKA '95 joined the board of the Tony Jannus Distinguished Aviation Society, which recognizes outstanding contributors to the growth and improvement of the commercial airline industry. He was honored to be "pinned" by fellow College of Aeronautics graduate and president of the Florida Tech Alumni Association, **FIN BONSET** '96, '99 MSA.

2000s

GIL RAMIREZ '00 has become the CEO of Lassiter Transportation Group Inc., a 28-person firm with offices in Jacksonville, Ormond Beach and Melbourne, Florida. The ownership transition occurred as LTG celebrates its 20th anniversary.

PREMKUMAR THANGAMANI '02 M.S. recently took on a new role as technical evangelist at YugabyteDB, a Distributed Cloud SQL Database company. He credits the knowledge and exposure he gained from the faculty at Florida Tech for the success in his career thus far.

ROB BRODNER JR. '03 joined Teradyne as a field application engineer, helping semiconductor manufacturers test their microchips before shipping to customers.

CAMILLE THORPE '03, '09 M.S., recently assumed the role of senior specialist of regulatory affairs at Abbott Medical Canada.

MELISSA TRIBOU '03, '06 M.S., '16 Ph.D., recently took on the role of research professional at Florida Tech's Center for Corrosion and Biofouling Control, where she examines the impacts of underwater cleaning on coatings and substrate materials.

NATE HOWELLS '04 M.S. returned to Boeing Co. as a payloads engineer in the 737 floor coverings group. He has been a payloads engineer in various capacities since 2013 after he was hired in 2008 as a fluids and propulsion design engineer with the space shuttle main propulsion system.

JASON SPERRY '04 works for OneWeb satellites and is involved with launching a constellation of low Earth orbit satellites. Much of the manufacturing of these satellites is in Brevard County, Florida, and will be launching with SpaceX in late 2022 and early 2023.

5 STEPHANIE HERNDON '07 joined subsea technology company Arctic Rays in Satellite Beach, Florida, as director of marketing and communication. She also was recently installed as 2022–2023 governor-elect for the American Advertising Federation District 4, representing Florida and the Caribbean.

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SPOTLIGHT ON

Martha K. Williams

FLORIDA TECH CONNECTION: '03 Ph.D. chemistry

DAY JOB: Senior technical advisor at GenH2, a hydrogen infrastructure solutions company headquartered in Titusville.

RECENT HONOR: Inducted into the NASA Inventors Hall of Fame in 2021.

CURRENTLY READING: Sara Young's *Jesus Listens*.

FAVORITE FLORIDA TECH MEMORY: Graduation, being hooded by Dr. Nelson. Also, meeting some of my fellow students who later became my work colleagues and friends.

There are many scientists and engineers at Kennedy Space Center (KSC), but only about 40 are also designated as NASA inventors. Among that already elite group, only four have been inducted into the NASA Inventor Hall of Fame—an exclusive list that now includes **MARTHA K. WILLIAMS** '03 Ph.D. and her 20 NASA-issued patents and more than 43 published patents or patent applications.

And Florida Tech calls her one of its own.

A Cayman Islands-born, U.S.-educated chemist who entered college at age 16 (and graduated three years later), Williams arrived at NASA in 1989. She left 29 years later as the lead polymer scientist at KSC and with a bushel of honors and awards, capped by her 2021 induction into the NASA Inventors Hall of Fame.

About a decade into her outstanding career, Williams won the highly competitive, agencywide NASA Hugh L. Dryden Memorial Fellowship of the National Space Club to cover the cost of earning her doctorate. Williams enrolled at Florida Tech and drew Gordon Nelson, then dean of the College of Science, as her advisor. A fellow polymer chemist who, like Williams, was not afraid to embrace the creative potential of his chosen field, Nelson was an ideal fit for her mindset and approach.

"Not everyone who seeks a Ph.D. is an inventor as I was, but Dr. Nelson thinks like that," Williams says. "It's good when you have someone who gets who you are."

Williams' work at KSC, both pre- and post-Ph.D., was as impactful as it was varied.

Her multiple interdisciplinary research activities included hydrogen sensing technologies, which received an R&D 100 Top Technology award in 2014, a NASA Commercial Invention of the Year award in 2016 and an Excellence in Technology Transfer award in 2017. Williams also led research efforts on low temperature aerogel composites and switchable, adaptive thermal materials for structures, and cryogenic storage and transfer.

"I did innovative stuff before Florida Tech—I had published papers, won the Silver Snoopy already [for outstanding achievements related to human flight safety or mission success], but what the Ph.D. and related research allowed me was an avenue, a springboard to really showcase the skill set that is who I am," Williams says.

Williams continues her innovative work as a senior technical advisor at GenH2, a hydrogen infrastructure solutions company headquartered in Titusville.

—Adam Lowenstein

continued from page 35

6 **ELISE SACHS HENRY** '08 recently had her third Panther Cub.

7 **POOJA PATIL** '08 M.S. recently started working for the Centre for Commercialization of Regenerative Medicine in Toronto as a sterility assurance manager and enjoys each day at work.

8 **APRYL ALEXANDER** '09 M.S., '12 Psy.D., received the 2022 Outstanding Teaching and Mentoring award from the Society for the Psychological Study of Social Issues (SPSSI).

ANDREW MICHALETS '09 M.S. started working as a solutions architect for BeyondID, an identity and access management service provider.

MARY RAJNICEK '09 started a new role as HSE coordinator at UTAC.

2010s

TREVOR CRAWFORD '10 M.S. began work as a senior machine learning engineer at RS21, developing tools and processes that handle model training and serving predictions to end users. Previously, he worked as a computational scientist at Los Alamos National Laboratory and ERT Inc.

HAMIDREZA OUNI '10 M.S. recently started working as a senior software engineer for Cox Automotive Inc.

MAT JORDAN '11 recently joined the team at Arctic Rays, a subsea technology manufacturer, as senior electrical engineer.

9 **BRANDON BOURNE** '13 and **YASMINE BOURNE** '13 welcomed a new Panther cub, Mina, to the world after meeting at Florida Tech in 2010 and getting married in 2017. With Brandon's father, **DENNIS BOURNE** '81, they represent three generations of Panthers!

BRANDON CRANE '14 recently began working for AmeriCU Credit Union as a project manager, is pursuing a doctorate in business administration and is an inventor with a provisional patent for Bag Swag.

RAY MAGGI '14 is now a development project manager for WeWork, focusing on delivering, designing and building new locations and custom solutions in commercial real estate.

RAYAN MOUSLY '14 M.S. took on the role of manager of information protection for a top-tier bank in the Middle East. He thanks Florida Tech faculty and staff for providing tremendous support during his time studying on campus.

10 **HANNAH BECKER** '15 MBA was selected to join the Armed Forces Communications and Electronics Association cyber committee, supporting government and industry information technology initiatives.

ANDREA BROOKS '15 started a new position as process engineer with a large company called Wood in the UK.

DELPHIA "DAISY" LACKEY '15 M.S. was promoted to senior manager at Altria for its Quality, Safety, Health and Environmental account.

NICK SINCLAIR '15 was promoted to supply chain quality manager at Lamex Foods Inc., where he has worked since his graduation from Florida Tech.

THILIP RAVINDRAN '16, '20 M.S., is working as an investigator/auditor for Porter Airlines Inc.

AASRITHA OBBILISETTY '17 M.S. has started a new position as project manager for Intuit.

11 **ALEXIS NIMONS** '18 M.S. recently moved back to her home state, Alabama, to take on the role of human capital coordinator for Crossflow Technologies. Last year, she and her husband welcomed to their home a new puppy, who just turned a year old.

12 **GREGORY THOMAS II** '18 MBA recently joined software giant Oracle as one of the youngest directors employed by the company. With 15 years of marketing and communications experience, he will help shape the future of how the company sells its products and forms relationships with customers.

SHAWN BROWN '19 is working as data management subject matter expert for Kearney & Co., one of *Accounting Today*'s top 100 accounting firms and regional leaders.

2020s

GIULIO CRISTELLO '20, '22 M.S., joined the Wabtec Corp. team in Melbourne, Florida, working in TO Validation. Originally from Rome, Cristello received both his undergraduate degree (aerospace engineering) and his graduate degree (systems engineering) from Florida Tech.

JOSIAH RUELAS '20 was hired at NASA as a launch site integration engineer.

ANDY SCHUBERT '20 M.S. recently accepted a senior structural design engineering lead position at Boeing Co. in St. Louis.

13 **ZACHARY BEHLOK** '21 A.S., '22 A.A., established an online academic journal titled *Modern Rebellion*, which publishes monthly. Although *Modern Rebellion* specializes in philosophy and psychology, it publishes contributions from varying writers, researchers and subject matter experts in fields ranging from psychology, poetry, philosophy, linguistics, photography, engineering and more.

ANDREA POLANCO '21 M.S. received a promotion at Citi and now serves as the ICRM capacity planning solutions engineer.

14 **CAPT. GORDON HERRERO** '22 M.S. was highlighted during the 2022

continued on page 38

6

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11

12

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14

Welcomed a Panther Cub?

Contact us for a free infant T-shirt, bib or onesie. Then, send a photo of your cub in his/her Panther swag with an AlumNote about yourself, and it may appear in the magazine.

For details: **alumni@fit.edu**

continued from page 37

Department of Defense pride event at the Pentagon when deputy defense secretary Kathleen Hicks mentioned him as an example of transgender service members who are making positive contributions to the armed forces.

15 LAURA JERROLDS '22 released her first book—a middle-grade fiction book titled *Help…! It's 1928!*—one week after graduating from Florida Tech.

16 SAM SIDARI '22 was hired on as a software engineer at General Electric Co., working on the "Eterra Distribution" product that network operators use to manage outages and recalibrate electricity.

IN MEMORIAM

EDELYN ARANDIA, who over eight years served Florida Tech as a credential evaluator, graduate admissions counselor and, since 2017, manager of graduate admissions, passed away July 28 at age 47.

TAKE A SEAT

Gleason Seat Legacy at Florida Tech

Leave a permanent legacy within Gleason Performing Arts Center by sponsoring a seat.

FLORIDATECH.EDU/SEAT

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Connected FOR LIFE

FLORIDA TECH Alumni Association

Florida Tech Ring Event

Wednesday & Thursday, October 26th & 27th

10:00 a.m. to 4:00 p.m.

Florida Tech Bookstore

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FACES OF GREATNESS

With People, Through People, For People

Engineer by training, businessman by trade, Jorge Mesquita's true legacy is connection.

By Karly Horn

JORGE MESQUITA '83 has a formula for success: 50% humility + 50% self-confidence = success

"If you have humility, you learn, and you never assume that you've got it all figured out," Mesquita says. "And if you have self-confidence, then you have the strength to power through the inevitable obstacles and the challenges you face. So, I always try to balance those two things."

If his decadeslong career in marketing and leadership roles at multiple Fortune 500 companies is any indication, the formula works.

Mesquita was born in Maputo, Mozambique, where he lived until his family fled to Brazil during a civil war when he was 14 years old. He then came to the United States for college, enrolling at Florida Tech shortly after his older siblings, with whom he lived throughout his college career. While earning his chemical engineering degree, he played on the men's soccer and rowing teams and worked part time in the cafeteria.

"It was a busy, happy time," Mesquita says. "I loved the culture here. I loved the professors that I had. So, it went by very fast, but I have really good memories."

After graduation, Mesquita was recruited for a research and development position with Procter & Gamble in Cincinnati. In the early days of his 29-year tenure there, he was exposed to the business side of the company, transitioning from science- to marketing-focused positions and quickly rising to leadership roles managing prominent brands like Tide, Swiffer, Febreze, Mr. Clean, Downy, Dawn, Cascade and Iams.

He left Cincinnati in 2014 for the Big Apple and an even larger multinational corporation, Johnson & Johnson, where he worked as executive vice president and worldwide chairman of the consumer division until 2019. Most recently, he served as CEO of Blue Triton Brands, formerly Nestlé Waters North America, stepping down from the company in February to pursue other opportunities.

An engineer by training, Mesquita had never planned to pursue the business route. Thankfully, he says, Florida Tech prepared him for both.

"It wasn't planned; it was just serendipity, but I think life works in that way," he says. "I found that in the marketing and business path, I was able to blend what I'd learned in my major with the stuff that I'd learned outside."

The "outside" stuff he learned at Florida Tech—balance, dedication, curiosity, legacy—was as valuable as the coursework itself, he says, and it taught him the importance of human connection over mere proficiency.

These sentiments have driven Mesquita throughout his career, keeping him from slipping into either toxic competition or stagnant complacency—opposite but equal adversaries.

"My professors taught me selflessness and to really care about the people you work with, genuinely. They taught me to be curious. They forced me to get out of my comfort zone," he says. "There is no question that the school made me a better person, not just a professional who is prepared."

Jorge Mesquita '83 received the 2022 Jerome P. Keuper Distinguished Alumni Award, which recognizes alumni whose career accomplishments honor the university's legacy of excellence.

Office of Marketing and Communications
Florida Institute of Technology
150 W. University Blvd.
Melbourne, FL 32901-6975

BACK IN THE DAY

1980s
1990s
2000s

In August, Florida Tech welcomed about 1,155 incoming first-year and transfer students to campus during Orientation week, a decadeslong tradition and Panther rite of passage. Do you recognize this 1981 Florida Tech Orientation staff member? Let us know, and share your Orientation photos and memories with us at magazine@fit.edu, and we'll add them to the university archives!

Photo courtesy of the Harry P. Weber University Archives