

FLORIDA TECH

M A G A Z I N E

SPRING 2019

STEMMING THE TIDE

Gender parity in STEM remains elusive.
So where do we go from here?

Jennifer Berg '19



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Most people wouldn't shift industries toward the end of their career to work for an unheard-of startup. Jim Thomas '74 isn't most people.
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While American society has seen considerable improvement in female representation in the science, technology, engineering and mathematics fields, gender parity in STEM remains elusive. So, where do we go from here?
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No university was closer—by proximity or by intimacy—to the Apollo program than Florida Tech. Many of our almost 2,000 students at the time took night classes, spending their days working full time at “the Cape.” When Apollo 11 was being built, they worked on it. When it launched, they witnessed it. Today, they remember it.

ANY TIME, ANYWHERE

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magazine**

ON THE COVER: Jennifer Berg '19, who graduated in May with a biomedical engineering degree, sees firsthand the disparity between males and females in STEM fields. Learn about the issue from her perspective and others' in the story on page 24.



In recognition of Gordon and Joy Patterson's generous contributions to Florida Tech's renowned botanical garden, the 15-acre Florida Tech landmark was officially dedicated to the couple during a ceremony April 23.

FLORIDA TECH MAGAZINE

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Dwayne McCay, Ph.D.

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CORRECTION: The *Florida Tech Magazine* Winter 2019 issue's "The Original Hacker" article incorrectly printed the name of Florida Tech's computer science program founder "Edwin Robin." His name is Edward Robin.



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PRESIDENT'S PERSPECTIVE

Dear Alumni and Friends,

We've been celebrating our 60th anniversary over the last year, and those decades witnessed several important "firsts." We recently had another first, and in a sense it reflects—and was made possible by—many of those previous ones.

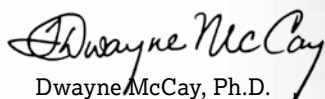
On May 23, we welcomed NASA Administrator Jim Bridenstine to campus. He was here to offer the keynote address at Space Technology Day, which brought together professors, students, engineers, technologists and business leaders from around Florida to engage with NASA personnel on current and future space technology activities and the agency's plans for exploring the moon, Mars and beyond.

Mr. Bridenstine had plenty to say about his host, describing us as a "wonderful institution" and noting our key role in generating talented graduates who end up working for NASA and related industry. "Florida Tech is an amazing university that provides a lot of talent to NASA and to contractors serving NASA," Mr. Bridenstine said.

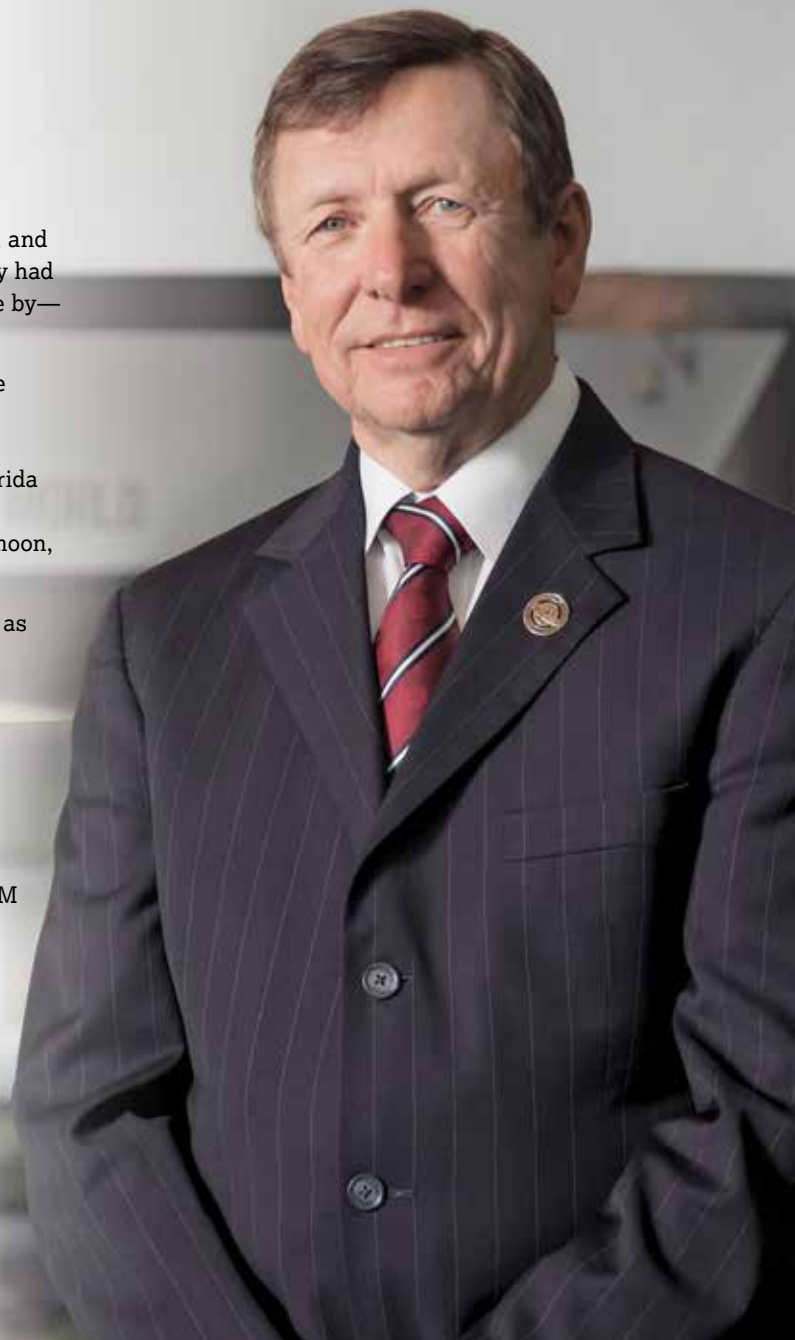
He also talked about his goal to have a woman be among the new generation of moonwalkers in 2024, an outstanding plan that truly resonates here at Florida Tech, where women in STEM is a key focus guided by our First Lady, Dr. Mary Helen McCay.

All of this served as a reminder of how essential Florida Tech is to our national space goals and aspirations—from the earliest days to the brightest tomorrows. Thanks for your continued support.

Sincerely,



Dwayne McCay, Ph.D.
President



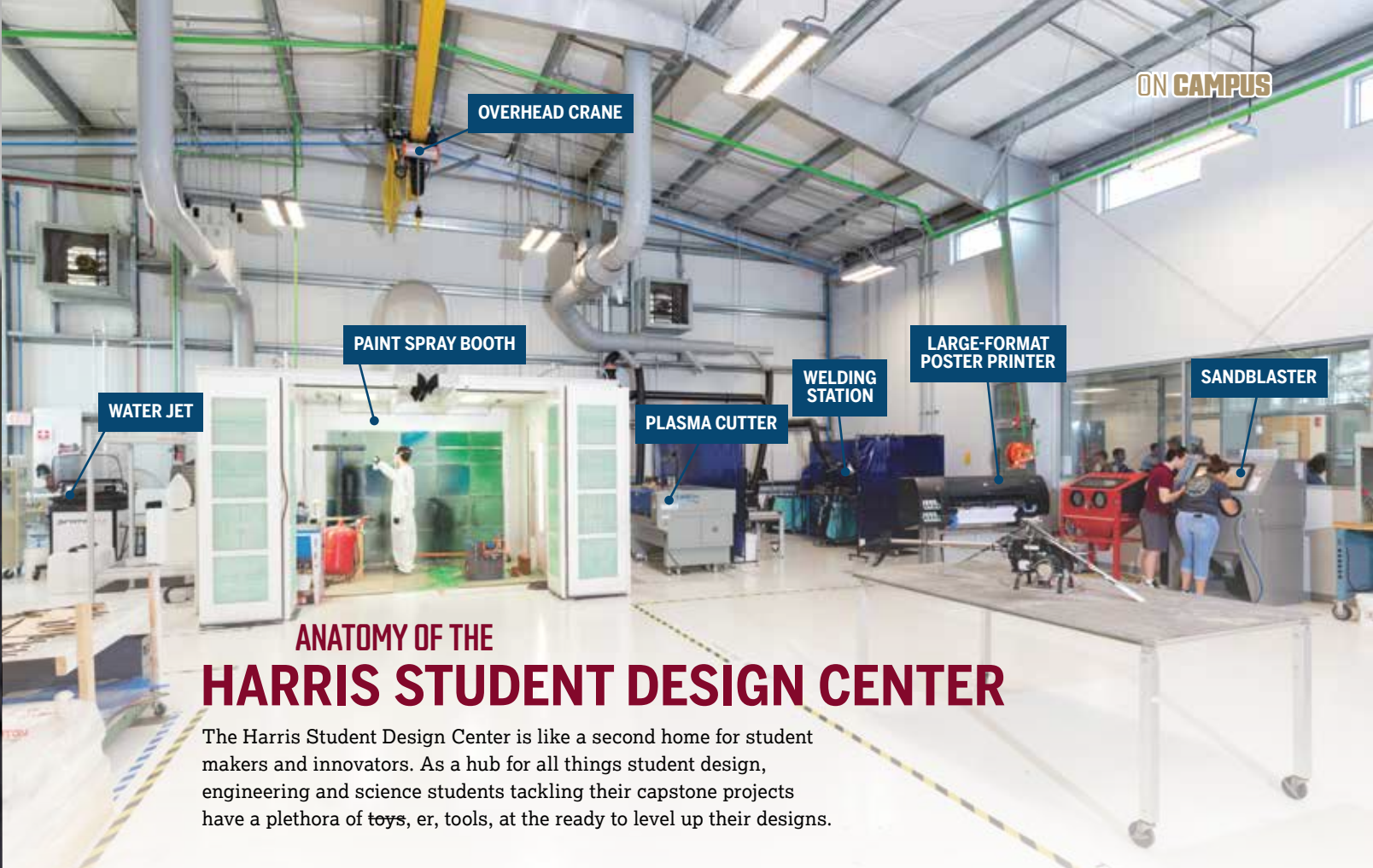
First lady Mary Helen McCay welcomes attendees to NASA Space Technology Day May 23 at Florida Tech. Portions of the event were livestreamed on NASA TV.



NASA Administrator Jim Bridenstine visits with President McCay and Kennedy Space Center Director Bob Cabana.



Bridenstine outlines NASA's plans to return to the moon to local and national media in the Evans Library Digital Scholarship Lab.



ANATOMY OF THE HARRIS STUDENT DESIGN CENTER

The Harris Student Design Center is like a second home for student makers and innovators. As a hub for all things student design, engineering and science students tackling their capstone projects have a plethora of toys, er, tools, at the ready to level up their designs.

JUDGES: In April, 135 judges from across the country make the annual pilgrimage to the Northrop Grumman Engineering and Science Student Design Showcase. With judges representing organizations like Northrop Grumman, Siemens, Dassault Aviation, NASA, Lockheed Martin and Leonardo DRS, among many more, the caliber of judges speaks to the quality of the projects.

“The ability to interact with students and prepare them for what companies are looking for and to have the opportunity to share my thought leadership with them is very exciting for me,” says Gerald Deren, a showcase judge from Siemens PLM Software.

HANDS-ON: Never used a 3D printer before? What about a water jet? Learning how to use the abundance of tools in the design center is part of the Florida Tech college experience. Regularly scheduled classes help students get acquainted with what could be their greatest asset for delivering a winning project.

GIVING BACK: From a device that creates flip-flops from old tires to low-cost rainwater collection systems, the student design projects that some student teams develop address humanitarian aid issues.

Since teams often include students from all over the globe, collectively, they have better insight into issues plaguing impoverished countries, like access to clean water or lack of basic necessities, like shoes.

Together, they create inventions that can be built with limited resources and make an impact in communities around the world.

ALUMNI CAPSTONE COACHES: Each year, several student design teams are paired with an alumni “capstone coach” who provides mentorship and brings relevant industry experience to the table. Together, capstone coaches and their student teams are able to elevate the project, many of which win awards at the showcase.

“[I became a capstone coach] to be able to provide guidance from the corporate world to FIT students. It’s a program that was not available to us at FIT 25 years ago and is of great benefit to students,” says Ed G. Dallal '91, founder, president and CEO of Krystal Analytix and Computing.



Can a PB&J Boost Business Success?

As I recently indulged in a peanut butter and jelly sandwich, it struck me: A PB&J is a lot like a successful business.

In today's disruptive, rapidly changing business environment, to win in the marketplace, it's critical to have both a superior strategy and the robust capabilities to support it.

Equated to a PB&J, think of strategy as the protein-packed foundational layer of peanut butter and capabilities as the delicious coating of jelly that magnifies and enhances it.

Just as peanut butter and jelly alone do not make a sandwich, strategy and capabilities are not enough to guarantee business success.

What's missing?

Execution: the powerful ability to get things done. Yes, effective execution is the unassuming, underappreciated bread in a PB&J. Just as the bread acts as a delivery vehicle to transport all the gooey sandwich goodness, execution is what turns strategy and capabilities into concrete actions that drive performance.

So how and why are some companies able to execute so well year after year? My recent research study aimed to find out. Numerous interviews with employees from two successful companies revealed five "execution drivers" to be the keys to their success.

Measurement: As one interviewee succinctly stated, "We measure everything." This was top of mind for all employees at both companies.

Communication: Requires a constantly changing mix of methods and frequency based on business needs.

Quality people: Those with drive, attitude and a predisposition to act.

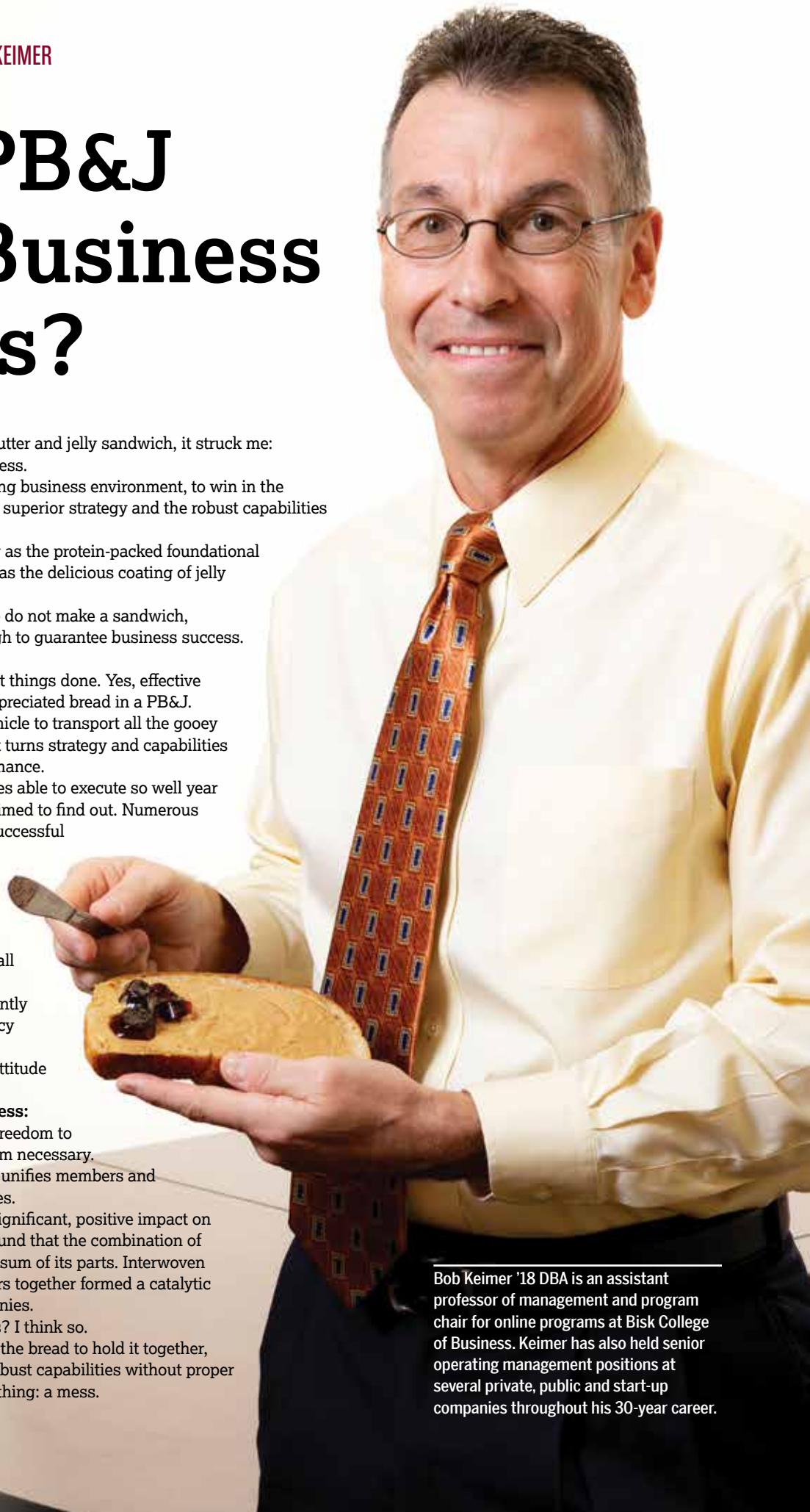
Autonomy, flexibility and nimbleness: Companies providing individuals the freedom to operate, change and adapt as they deem necessary.

Teamwork: Collaboration that both unifies members and magnifies their individual performances.

While each execution driver had a significant, positive impact on company performance, my research found that the combination of the drivers was much greater than the sum of its parts. Interwoven and deeply connected, these five drivers together formed a catalytic capability of execution for both companies.

Can a PB&J boost business success? I think so.

Like peanut butter and jelly without the bread to hold it together, even the most superior strategy and robust capabilities without proper execution will leave you with just one thing: a mess.



Bob Keimer '18 DBA is an assistant professor of management and program chair for online programs at Bisk College of Business. Keimer has also held senior operating management positions at several private, public and start-up companies throughout his 30-year career.

Drones to the Rescue

Many great origin stories begin at a bar.

However, instead of with 37 cents, this one starts with a game of chess and ends with a burning building and a rescue at sea.

College of Aeronautics faculty member Ishmael Cremer '09, '15 Ph.D., was hanging out at Lost Shirt Brewing Co. when he struck up friendly conversation with bar proprietor and retired firefighter Johann Brockhausen '91.

Unbeknownst to Cremer, Brockhausen is a fellow Florida Tech alumnus and fraternity brother. Thankfully, a mutual friend pointed out that both men are part of the Panther family.

"We were playing chess, and we started talking about his drone projects," Brockhausen says. "I knew it would be a great thing for the fire service to use, so I immediately connected Ishmael to Brevard County Fire Rescue District Chief Tom Klein."

Cremer's passion for drones is infectious, so it's not surprising that Brockhausen would want to get Brevard Country Fire Rescue (BCFR) involved.

This same passion is what drove Cremer to lead Florida Tech's minor program in unmanned aircraft systems (UAS). The program gives students the chance to theorize and explore new applications for drones while giving back to the community.

With Brockhausen's coordination and the help of a handful of students, Cremer hosted a Drones 101 course for Klein's BCFR crew.

"I knew if we did this, we could become a cutting-edge fire service," Brockhausen says.

After two days of what felt like playing with toys and geeking out about drones with Cremer and his students, 11 BCFR firefighters completed their Federal Aviation Administration ground course and a full day of flight training.

"They have an incredible job to do every day, and being able to give them a new lifesaving skill is something you rarely get to do," UAS student and Drones 101 facilitator Zachary St. Amande says.

By the end of the course, firefighters were ready to undergo hands-on training to see how they could implement their new skills in the field.

During the first training exercise, BCFR recreated a roaring building fire as a controlled research test. As the flames consumed the building, drone operators practiced using thermal imaging to quickly identify hot spots and develop a strategy to efficiently control the fire.

"Coming up with strategic plans with the drone, that's the most exciting thing to me," Brockhausen says. "To have it



A student prepares to deploy an unmanned aircraft system (UAS) during a Drones 101 hands-on training course.

up, looking for collapse hazards, solving problems immediately—especially on large buildings—means less risk for the crew."

After this successful collaboration, more agencies and organizations are connecting with the College of Aeronautics to not only get their drone certifications, but also to leverage drones for their unique needs.

New Academic Programs Provide Enrichment, Opportunity

HONORS COLLEGE: Florida Tech has established a universitywide undergraduate Honors College for high-achieving and accomplished students in all majors. Honors College students participate in interdisciplinary seminars, scholarly research and cultural activities that foster a global mindset, civic engagement and professional development. The college is led by Lisa Perdigao, assistant provost and School of Arts and Communication professor.

HUMANITIES EXPANDED: The School of Arts and Communication replaced its general humanities major with three specialized degree

programs to better serve undergraduate students with a passion for the liberal arts:

- Humanities–History, B.A.
- Humanities–Literature, B.A.
- Humanities–Philosophy, B.A.

"These concentrations will help our students in seeking positions after graduation and be more successful when applying to graduate programs in their specific fields," says Robert Taylor, head of the school.

The popular Humanities–Prelaw, B.A., program offered by the school is unchanged by the development.

STUDENT SUPPORT: The First Year Experience program, which pairs new undergraduate students with professional staff advisors to assist them during their academic and social transition to college, has been expanded and renamed. Now First and Second Year Experience (FSYE), the program extends proactive advisement and support for students through their second year of full-time study on campus.

Encore: College Players Celebrates 50 Years on Campus

College Players (CP), Florida Tech's performing arts student organization, is celebrating its 50th anniversary this year. One of the largest organizations on campus, CP has delighted audiences with stage plays, musicals, improv skits, chorus and dance performances and more since its first show, "If a Man Answers," in 1969.

In the early days, as CP alumnus George Poidomani '73 recalls, the group would cast female university employees in shows because there weren't enough female students enrolled at the time.

Throughout the decades, CP has continued to offer a creative release to students—male and female—at our primarily STEM-focused university.

"Ah, good times," Lee Frey '99, '02 M.S., reminisces. "The artistic outlet, amazing friends and wonderful experiences CP provided me undoubtedly helped me get through the difficulty of two engineering degrees. I probably would have burned out otherwise."

While providing an escape from schoolwork, CP has also allowed members to apply the skills they've learned in the classroom in an out-of-the-box way, such as coordinating particularly difficult set design like Frey experienced during the spring 1996 production, "Noises Off."

"Had we not been mostly engineering and science students eager for a challenge, I expect it would have been disastrous."

Participating in the performing arts has given CP members their share of unique college experiences, as well.

"I remember very clearly the looks that I got from my fellow Campbell Hall residents, who saw me washing a bloodied button-down shirt in the dorm laundry room every night for three weeks," Frey recalls of his post-death-scene-rehearsal evenings.

For many CP alumni, the organization was a family away from home.

"College Players brings together people from all different backgrounds

“ The artistic outlet, amazing friends and wonderful experiences CP provided me undoubtedly helped me get through the difficulty of two engineering degrees.”

—Lee Frey '99, '02 M.S.



Cast of "The Tempest" in 2001. Photo courtesy of Lee Frey.

and creates a tight-knit family that never stops having fun," says Shelley Mitchell, senior applied mathematics student and 2018–2019 CP president.

In April, CP alumna Samantha Paitsel '17 coordinated a weekend of activities in honor of the 50th anniversary, reuniting former members and celebrating "the good ol' days."

"Being able to meet fellow alumni was an awesome experience," Paitsel says, "and I thoroughly enjoyed being able to celebrate a wonderful organization with some of the people who left us with such an amazing legacy to fulfill."



College Players first production, "If a Man Answers," in 1969. Photo courtesy of Gene Blaettler.



Learn more about the history of College Players at floridatech.edu/cphistory

Farewell After 40

JOHN TREFRY

Since arriving at Florida Tech in August 1978, chemical oceanography Professor John Trefry has spent more than three cumulative years at sea, has been 10,000 feet under the ocean in the deep submergence vehicle Alvin and has gotten within a few feet of 750°F deep-sea hydrothermal vents—a feat that, after 41 years of groundbreaking research, Trefry confesses is the highlight of his professional career.

“Our team sailed across the Mid-Atlantic Ridge for two weeks to find, photograph and sample what would be the first discovery of deep-sea hydrothermal vents in the Atlantic Ocean,” Trefry says. “The successful discovery on Aug. 1, 1985, was euphoric and a game-changer.”

Trefry, who retired in January, shared that same passionate pursuit of scientific discovery with four decades of Florida Tech students, advising them to be prepared with an open mind and to look for opportunity in the routine.

“Refresh your body and mind with some time away from day-to-day challenges,” Trefry says. “The solace and beauty of nature untouched are so rare and peaceful to me. [I love] letting my mind race when I have what I perceive to be a truly pure and scientific thought ... because that ‘Aha!’ moment is electrifying and most certainly not a regular event.”

This mindset has enabled Trefry

PAUL JENNINGS

Paul Jennings has been teaching at Florida Tech since the inception of the chemical engineering program—a time when personal computers had not yet been invented, the pocket calculator was new and of limited use and Florida Tech founder Jerry Keuper still wandered campus sporting his signature bow tie, Jennings recalls.

Since then, Jennings has been responsible for most of the chemical engineering curriculum changes, has written many accreditation reports—including the one that led to our program’s initial accreditation—and has served as faculty senate president.



President Dwayne McCay recognizes Professor John Trefry for his 40 years of service at his retirement celebration in January.

to achieve much in his career, his CV brimming with professional society memberships and honors, including Florida Tech’s awards for Excellence in Teaching and Research and for Faculty Excellence in Research.

“This is a great university, and it’s only getting greater,” Trefry said at his retirement party Jan. 28. “I’m happy to have been one of the steps along the way to greatness.”

In retirement, Trefry plans to write about his research in the Alaskan Arctic and the Indian River Lagoon while spending more time with family and continuing to feed his lifelong passion for global travel with his wife.

“I may actually buy that antique car I have dreamed about owning,” he adds with a laugh.

“There is something new every day: new questions from students, new discoveries in research projects, usually surprising and usually forcing you to think outside of the usual box,” Jennings says. “Teaching forces you to learn new tools and new knowledge every time you teach a course.”

After 40 years of dedication to the university and his students, Jennings retired at the end of spring semester 2019. In retirement, he plans to play golf again, practice—and retune—his piano and write the book he has been thinking about for the past 30 years.

A Stellar Future

In February, Salvatore T. “Tory” Bruno, president and CEO of United Launch Alliance (ULA), spoke to students, faculty and community leaders about ULA’s vision for the future of space launch. Part of the F. Alan Smith Distinguished Lecture Series, Bruno’s presentation explored ULA’s quest to make space launch more affordable and accessible.

Rokach Joins NAI

Biomedical and chemical engineering and sciences Professor Joshua Rokach was named to an elite group of 147 renowned academic inventors in the National Academy of Inventors Class of 2018. Rokach has drawn worldwide recognition for achieving the first syntheses of the major inflammatory mediators responsible for asthma and rhinitis.

Selfies with a Twist

Recent Foosner Art Museum exhibition “Aurora Molina: The Selfie Project” examined people’s desperate need for attention and



the egocentricity of a modern phenomenon: the “selfie.” The complex, embroidered artworks highlighted the selfie’s addictive nature and projected pop culture’s drug-like dependency on social acceptance, according to Molina’s statements.

Beyond the Game

While they're known across campus for their athleticism, student-athletes' passions aren't restricted to the court or the field.

With the same dedication, drive and competitive spirit that they bring to their sports, Florida Tech student-athletes pursue degrees and, ultimately, careers in the fields that matter to them—so much so that between classes, homework, games and practices, they carve out time in their busy schedules for jobs, internships, volunteer work and research opportunities that complement their studies and prepare them for their futures.

Take a look at some of the exciting things our student-athletes are doing outside of school and sport and the skills and lessons they're taking away from the experiences that will lead them to success in their studies, their sports and—most important—their lives.



KATRINA HAND

SPORT: Volleyball and Softball

YEAR: Junior

MAJOR: Meteorology

OFF THE FIELD: Summer meteorology internship with the New Jersey Department of Environmental Protection in Trenton, New Jersey

DUTIES: Hand recorded daily weather patterns, assisted in air-quality forecasting, launched a NASA ozonesonde and researched relationships between weather patterns and ozone levels during ozone season.

“Being a student-athlete and an intern is important because it shows how prepared we are for life after college sports. We are not only at Florida Tech to compete, but we are also here for an education.”



HEATHER BOWERSOX

SPORT: Volleyball

YEAR: Senior

MAJOR: Biomedical Science

OFF THE COURT: Undergraduate research position in Florida Tech's Shark Conservation Lab under Assistant Professor Toby Daly-Engel.

DUTIES: Bowersox extracts tissue and DNA from previously sampled sharks across the world, performs polymerase chain reactions (PCR) to amplify DNA and gel electrophoresis to visualize samples and works with a program called Geneious, which helps clean up DNA sequences and allows the lab to make comparisons between different species of sharks.

“I've learned to be a leader on the court and in the classroom ... In both sports and research, you need to dedicate SO much time but also make sure your focus is 100% in the present.”



HUGO LOPEZ

SPORT: Soccer

YEAR: Junior

MAJOR: Mechanical Engineering

OFF THE FIELD: Intern with The Corradino Group in Fort Lauderdale, Florida

DUTIES: Lopez reviewed plans, worked with cost estimates for upcoming projects (like the I-95 Express Phase 3C) and helped senior inspectors evaluate several operations, such as trench backfill, roadway and bridge construction and concrete beam installation.

“I took this internship to see what it was like in the field ... It's good time-management practice. In school, I manage classes and soccer. In the summer, I balanced my internship and soccer practices.”

RESEARCH ROACHES: RETHINKING THE LAB RAT

ON ETHICS: Roaches are not euthanized after participating in tests, unlike rats and pigeons.

ON MONEY: It is more cost-effective to house roaches. Once their classroom days are over, they can be housed in terrariums until the end of their lives.

ON CHALLENGES: The new lab subjects provide real-world challenges in lab testing. For example, since data was inconclusive with previous testing motivators, such as treats, students used crushed Froot Loops, which turned out to be a preferred motivator between trials and roaches.

Buggin' Out

In comparative psychology research, species such as mice and pigeons are often used to learn about behavior and cognition. But given the requirements of veterinary care and storage and the ethical questions associated with the animals' ultimate fate, a Florida Tech psychologist may have found a new option.

Just don't step on it.

In her fall physiological psychology classes, Darby Proctor, assistant professor in the School of Psychology, introduced *Blaberus discoidalis* roaches to learn about neuroscience. The idea stemmed from a desire to provide an interactive experience for the students, who are dealing with many complex concepts. Proctor uses equipment and electrodes that attach to a roach's leg and can manipulate the neurons and electricity moving the limb. Students can then see the electrical activity via an iPad. This is the same process that works in humans.

In her classroom, Proctor teaches about action potential and neurons through the roaches in multiple ways. Utilizing a small, backpack-like attachment worn by the insects, students are able to deliver an electrical impulse to their antennae via Bluetooth, controlling the movement of the roach for a brief period.

This is part of Proctor's lessons used in a neuroprosthetics lab, showcasing muscle input used in robotic prosthetics for humans.

"That little electrical signal is mimicking an action potential, the electricity their neurons would fire," Proctor says. "And because it's such a simple model organism, we can hijack the neurons in their antennae to mimic what they would feel if they ran into something. You're basically tricking them and giving them the signal that they've run into something. So then, they turn."

Looking for multiple ways to utilize the roaches, Proctor also uses the insects in her animal behavior and comparative animal cognition classes. After going through the basic processes of cognition, Proctor lets the students design an experiment with the roaches to gain experience with the concepts.

Last semester, her students decided to create a traditional maze out of building bricks with a food goal at the end. Similar to experiments done with rats, the goal was to see if the roaches could learn the path to get to the food without too many mistakes, thus showcasing they had the basic cognitive process of long-term memory.



The test didn't prove to be successful. The roaches didn't seem to be motivated by food the same way rats or other mammals were; some even gave up in the middle of the maze. However, the maze gave way to another idea of testing, this time using a T-shaped maze. By simply giving the roaches a choice of going left or right, the students were able to analyze if the insects had another cognitive process: behavior lateralization.

These student-designed tests also showcased real-life issues in scientific testing.

"It's really cool for the students to see that even though we, as scientists, want to do something and plan an experiment a certain way, sometimes we learn that doesn't work," Proctor says. "But every time you fail, you learn something new."

Culture for the Whole Community

A simple staff training recently opened the doors of three Florida Tech facilities and Brevard County cultural hubs to a portion of the community previously hesitant to enter.

In January, the Foosaner Art Museum, Ruth Funk Center for Textile Arts and Renee Foosaner Education Center were certified as sensory-inclusive venues and became specially equipped for patrons with autism, dementia, post-traumatic stress disorder or other sensory regulation challenges.

Through Alabama-based nonprofit KultureCity, medical professionals trained staff members not only how to recognize guests with sensory needs but also how to handle a sensory-overload situation.

All museum guests who become overwhelmed by the environment now have access to “sensory bags,” containing assorted calming tools like noise-canceling headphones, fidget devices and verbal cue cards, as well as a dedicated quiet area if they need a more secure environment.

“Everyone should be able to explore and experience fine art,” says Carla Funk, executive director of university museums. “We are very pleased that our training and preparation will mean guests who may have sensory challenges can now feel safe and comfortable visiting our facilities.”



Kathie Elias, curator of education for the Foosaner Art Museum and Education Center, with one of the sensory bags provided by the museum.

KultureCity has established sensory-inclusive venues and events nationwide, including zoos, science centers, aquariums, NHL arenas, the NFL Super Bowl and Pro Bowl, NBA arenas and NFL stadiums.

“Our communities are what shape our lives,” says KultureCity executive director Traci Johnson. “And to know that the Foosaner Art Museum and the Renee Foosaner Education Center are willing to go the extra mile to ensure that everyone, no matter their ability, is included in their community is amazing.”

A young museum visitor wears noise-canceling headphones while visiting the exhibit. Photos by Benjamin Thacker, courtesy of the Melbourne Beachsider.

“Everyone should be able to explore and experience fine art. We are very pleased that our training and preparation will mean guests who may have sensory challenges can now feel safe and comfortable visiting our facilities.”

—Carla Funk, executive director of university museums



Growing for Graduation

For the first time in Florida Tech history, a third ceremony was added to the spring commencement exercises May 4 to ensure every graduate had six tickets available for family and friends to attend.

To accommodate the growing number of graduates, spring and fall commencements were expanded from one to two ceremonies in May 2012, and a single-ceremony summer commencement was added in July 2017.



1,280
DEGREES CONFERRED



THREE
CEREMONIES



Alumni Homebase Reimagined for a Sustainable Future

The Alumni House is getting a makeover, and while the facade of the new Alumni Center will be traditional Florida Tech crimson and gray, the guts of the project are all green.

The new Alumni Center building, which is projected to be completed this fall, replaces the existing 1960s-era building with a new, zero-energy facility featuring a host of cutting-edge renewable energy technologies.

Florida Tech students and faculty have been involved in the project since the beginning, from applying for the \$282,000 Renewable Energy & Energy Efficiency Technologies (REET) Program grant from the Florida Department of Agriculture & Consumer Affairs' Office of Energy to securing matching donations from several community partners

to modeling the building materials and systems to predict the energy performance during the design phase.

“That’s really a highlight of the project: It’s a teaching tool for students,” says mechanical and civil engineering Associate Professor Troy Nguyen, who is the principal investigator of the Alumni Center project. “They will be able to see how sustainability and renewable energy principles are being practiced, and they can touch and feel how those things are built.”

A model for a cost-effective, scalable, zero-energy commercial office building design in Florida climates, the Alumni Center will provide continued research and development opportunities for not only Florida Tech, but the whole community.

“It’s a teaching tool for students. They will be able to see how sustainability and renewable energy principles are being practiced, and they can touch and feel how those things are built.”

—Troy Nguyen, principal investigator





Rise of the Rest

AOL co-founder Steve Case and a team from his investment firm, Revolution, brought their Rise of the Rest bus tour to Florida, making stops on the Space Coast and at Florida Tech's Digital Scholarship Lab April 30.

The \$150 million Rise of the Rest Seed Fund invests in promising "seed-stage" companies in emerging startup ecosystems outside of Silicon Valley, New York City and Boston.

The five-day tour included meetings with entrepreneurs, ecosystem builders and local business and government leaders, and it concluded with a pitch competition that featured eight startups—four of them local companies—contending for a \$100,000 investment from the fund.



First-Place Paradise

Thanks to its year-round warm weather, ample public beaches and location in the heart of the Space Coast—not to mention that it is home to Florida Tech's diverse, vibrant main campus—Melbourne, Florida, was named *U.S. News & World Report's* No. 1 Best Place to Live Near the Beach in the U.S.



Festival of Fire

In partnership with the National Jet Racing Association, Florida Tech and university affiliate Larsen Motorsports introduced more than 875 students in grades six through 12 from Palm Beach County, Florida, to the exciting world of STEM education during the inaugural Festival of Fire. Visitors participated in hands-on learning activities before being treated to an on-track demonstration of the Florida Tech jet dragster, driven by world champion Elaine Larsen.

ABECEDARY OF

SUSTAINABILITY

In the decade since Florida Tech launched its sustainability studies program, more than 150 students have graduated with a major or minor in the growing field. This A-to-Z guide to sustainability will clue you in on the keywords, introduce you to concepts and show you some of the ways sustainability shapes our university.



ALUMNI CENTER

Soon, the Alumni House will be transformed into the Alumni Center, a zero-energy building that will provide faculty and students with vital data for sustainability studies. Read about it on page 14.

CARBON FOOTPRINT

This is the amount of ozone-depleting carbon compounds emitted by a person, place or thing. To reduce yours, you can drive less, eat sustainably sourced foods and reduce energy consumption.



ETHOS COMMUNITY GARDEN
What was once a plot of grass is now an organic garden highlighting the spirit and hard work of Florida Tech's most ecologically conscious students (who also like fresh veggies).



J JOBS Careers in sustainability abound. Take these alumni and their jobs, for example:

JULIET GRESSLE '17, intern at O'Seas Conservation Foundation

ERIC MARTIN '94, '96 M.S., director of the Florida Solar Energy Center

JAMES SCRIVENER '98, CEO at National Solar Power

JESSICA CORE '11, regulatory scientist at St. Johns River Water Management District

YUNZIYI LANG '14, climate change analyst at the World Bank Group

LINDSAY GUTHRIE '16, environmental consultant at Florida Department of Transportation

B BIODIVERSITY

Biodiversity relates to the variety of genes and species in an ecosystem. The higher the biodiversity, the more sustainable the ecosystem.



D DESIGN

Sustainable design seeks to reduce the environmental impact of things people build.

Many of the projects on display during Florida Tech's annual Northrop Grumman Engineering and Science Student Design Showcase (see page 5) integrate best practices in sustainability.



Contrary to popular belief, being green and practicing sustainability aren't the same thing. Green is a catch-all marketing term for anything remotely eco-friendly, whereas sustainability can only be achieved by strict adherence to best practices and industry standards.



Without farms, humans starve. But industrial agriculture deforests our land, poisons our water (fertilizer, pesticides, animal waste) and pollutes our air (methane, carbon dioxide) at rates that may one day lead to our demise. What can be done? One solution is sustainable agriculture, which uses modern, science-based practices to maximize the productivity and profitability of farms while minimizing their environmental impact.

H HYDROPOWER

Harnessing the energy of moving water to produce electricity is sustainable and probably more widely used than you realize. All but two states (Delaware and Mississippi) cultivate hydroelectric power.

I INDIAN RIVER LAGOON

Florida Tech's Indian River Lagoon Research Institute provides valuable research to support actionable solutions that address the sad state of the lagoon, continuously plagued by a high concentration of muck and subsequent algae blooms.



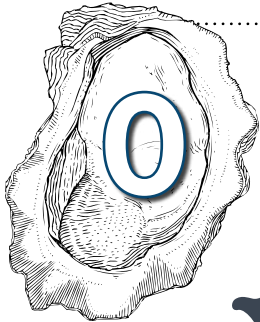
K KEN LINDEMAN

No one at Florida Tech is a bigger champion of sustainability than coastal conservation expert and ocean engineering and marine sciences Professor Ken Lindeman '80, who has led the charge on everything from our academic minor and major programs to the creation of the University Sustainability Guide.



L LEED

Leadership in Energy and Environmental Design (LEED) certification is the premier certification for establishing environmental and energy-efficient buildings. With help from students, Florida Tech has achieved LEED certifications for its aquatic center and The Scott Center for Autism Treatment.



OYSTER MATS Because oysters can filter 50 gallons of water a day, conservationists are keen on repopulating polluted waterways with oyster reefs. Florida Tech students and faculty use discarded oyster shells tied to aquaculture-grade mesh to make the perfect base for new larvae to colonize.

P PROFITS

Businesses large and small implement sustainability strategies to lower overhead costs and increase profits.



R REDUCE, REUSE, RECYCLE, REPAIR, REFUSE

The goal of the "5 R's" mantra is to help you reduce your environmental impact by being thoughtful about your purchases and what you put in the trash.



M MARINE PROTECTED AREAS (MPAS)



MPAs are being established across the world to mitigate overfishing, often facing opposition from communities with fishing-based economies. Florida Tech researchers, like ocean engineering and marine sciences program Chair Ralph Turingan have successfully overcome objections by providing evidence that MPAs foster healthier fish populations, ultimately benefiting fishing communities.

N NATIVE GARDENING

Going native means landscaping with plants that are naturally attuned to the surrounding climate, reducing the need for extra water and fertilizers, which create runoff and pollute waterways.



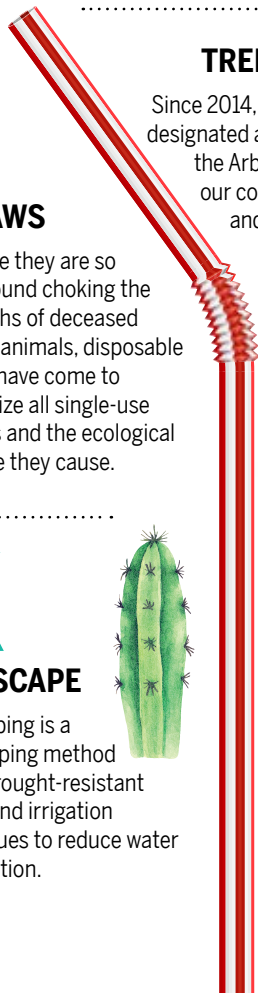
Q QUALIFICATIONS

Florida Tech is one of only 10 Florida universities to have achieved a Sustainability Tracking, Assessment & Rating System (STARS) Campus Sustainability Rating by the Association for Advancement of Sustainability in Higher Education.



S STRAWS

Because they are so often found choking the stomachs of deceased marine animals, disposable straws have come to symbolize all single-use plastics and the ecological damage they cause.



T TREE CAMPUS USA

Since 2014, Florida Tech has been designated a Tree Campus USA by the Arbor Day Foundation for our commitment to planting and maintaining grounds replete with habitat-providing, oxygen-producing trees.



V VERMICULTURE

Did you know food waste from campus eateries produces nutrient-rich fertilizer thanks to our vermiculture (earthworm-powered) composter in the Patterson Botanical Garden?

W WASTE

Waste in all its forms is the archrival of sustainability. Sustainability principle No. 1: Always minimize waste.



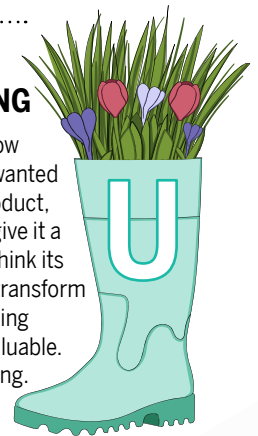
X XERISCAPE

Xeriscaping is a landscaping method using drought-resistant plants and irrigation techniques to reduce water evaporation.



U UPCYCLING

You could throw away that unwanted or useless product, or you could give it a makeover, rethink its purpose and transform it into something unique and valuable. That's upcycling.



Y YEARS

Paper towels and orange peels take two to five weeks to decompose. A milk carton, three months. Aluminum cans, up to 200 years, and plastic bottles, up to 1,000 years.



Z ZACH EICHHOLZ '16 is part of many student-led sustainability initiatives both on and off campus. He helped launch Satellite Beach's Sustainable Satellite program, which includes a community garden, electric vehicle charging stations and solar-power and xeriscaping projects.



VISIONARY

MOST PEOPLE WOULDN'T SHIFT INDUSTRIES TOWARD THE END OF THEIR CAREER TO WORK FOR AN UNHEARD-OF STARTUP.

JIM THOMAS '74 ISN'T MOST PEOPLE.

BY ANDREW FAUGHT

When electric vehicles first hit American roadways in the 1980s, they often were derided as glorified golf carts for their limited range and lack of power. More than three decades later, a new generation of electric vehicles is upending notions of not only getting around but doing so with sporting panache.

In November, Michigan-based Rivian offered a peek into the future. The company, founded in 2009, dazzled the November 2018 Los Angeles Auto Show with its possibilities: the R1S, a seven-seat electric sport utility vehicle, and the fully electric-powered R1T pickup truck. Both promise performance and luxury in ways never before imagined in electric vehicles.

"We branded them 'Electric Adventure Vehicles,'" says Jim Thomas '74, Rivian's vice president of corporate development. "Whether you're on the street or off-roading, they've got really great dynamics as an electric vehicle."

CHARTING THE COURSE

That Thomas found his way to Rivian is no surprise. Even as a math major at Florida Tech, he has always had an eye to the future.

In 1995, he helped to launch MapQuest, the first free online map service for consumers and a paid service for businesses. Much like he is doing at Rivian today, as MapQuest's executive vice president, chief operating officer and chief financial officer, Thomas aimed to change a traditional business into something new.

"We had new technology that we had to apply to a traditional business and determine how we could meet customer needs," he says. "All of the issues of management—the culture, the hiring, the financing, the marketing, the operations—those types of things really prepared me to help with what we're doing at Rivian."

While his technical knowledge has helped him in the industry, he credits his time at Florida Tech with helping him to get "a picture" of what it takes to succeed in business.

"I got an understanding that there's great ways to apply that technology," he says. "But also, courses allowed me to look at the broader picture and the strategic use of those technologies that would have broader implications than just a one-off application."

Rivian appealed to him in much the same way that MapQuest did: It was an opportunity to help an industry transition, only this time, on a much more expansive, high-stakes scale that could also have a positive impact on energy sustainability.

Guided by many of the same questions that he had faced at MapQuest, like how to meet customer needs and expectations from both consumer and business points of view, Thomas is up for the challenge.

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“RIVIAN’S BATTERY MODULES PROVIDE THE HIGHEST DENSITY IN THE INDUSTRY AND HAVE A TECHNOLOGY-LEADING BATTERY MANAGEMENT SYSTEM.”

—JIM THOMAS ’74





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Today, about 10 years since Thomas left semiretirement to join Rivian out of excitement at the company's prospects, Rivian is prepping its first vehicles for production at a converted Mitsubishi Motors of America Inc. plant in Normal, Illinois.

PUSHING BOUNDARIES

While early electric vehicles, such as the Nissan LEAF, were not particularly powerful, pioneering electric vehicle manufacturer Tesla Inc. is credited with changing public and industry perceptions with its cars that can operate on a single charge for as long as—or longer than—fuel-powered vehicles can run on a tank of gas.

Because electricity provides instantaneous torque, carmakers have tried to keep their cars light to maximize battery power in a market that increasingly has focused on sports cars.

But because most Americans don't drive sports cars, in 2011, Rivian rethought the concept.

"With an SUV and a pickup, you need to be more than fast. You need to have durability, and you need to be rugged," says Michael McHale, Rivian's director of corporate communications. "So we have now developed products that carry on from Tesla's proving of an untruth—the

untruth being that electric vehicles can't get wet, can't be treated roughly and can't be durable. That's where we come in."

The R1T is expected to be available to the public next year. Each of its wheels is powered by its own motor, giving it what's known as torque vectoring, which allows each wheel to turn independently at a different speed.

"That allows substantial flexibility in an off-road environment, but it provides great acceleration on pavement, as well," Thomas says.

The electric pickup is being lauded for its ability to reach 60 mph in three seconds. Further, it can tow 11,000 pounds. Following the Los Angeles show, *Bloomberg Businessweek* reported that Rivian will be taking "direct aim at the Ford F-150 Raptor and the truck offerings from Chevrolet and Fiat."

SHIFTING PERSPECTIVES

While almost one-third of the vehicles featured at the Los Angeles show were electric or relied on alternative fuels, Rivian's efforts to create nontraditional electric vehicles have prodded other carmakers to consider the possibilities.

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continued from page 21

In February, Ford and General Motors Co. both announced they plan to develop electric pickups, as does Tesla. Audi, meanwhile, has said that by 2025, 30% of the cars it produces will be electric.

“Electric vehicles are showing a great deal of sustainability,” Thomas says. “Not having internal combustion engine parts means the motors on the vehicles can last a lot longer.”

But Rivian has loftier purposes, too, namely, creating a zero-emissions vehicle.

The company’s founder, Melbourne native R.J. Scaringe, is an outdoor enthusiast who launched the company to help people get into nature without harming it.

Gas-powered vehicles are considered major causes of global warming, with personal vehicles accounting for nearly one-fifth of all U.S. emissions. They emit about 24 pounds of carbon dioxide and other climate-warming gases for every gallon of gas used, according to the Union of Concerned Scientists.

While electric vehicles also have an impact on the planet, they are a big step toward reducing harmful emissions and increasing the sustainability of mobility. Rivian’s base models sell for between \$68,000 and \$70,000 before federal tax credits, which translate into a \$7,500 savings. But as the industry scales up, prices will drop, Thomas says. Even in the short term, total cost of ownership of electric vehicles is quickly becoming equal to or less than vehicles with internal combustion engines.

Batteries remain an electric car’s most expensive part, but better battery technology is expected to lure new electric acolytes.

Electric carmakers use higher-capacity lithium batteries, bundling hundreds, and even thousands, into a battery pack that can propel a vehicle for 400 miles per charge.

Further, emerging charging technologies—using lithium-air, lithium-oxygen, barium-titanate and dual-carbon

“WE BRANDED THEM ‘ELECTRIC ADVENTURE VEHICLES.’ WHETHER YOU’RE ON THE STREET OR OFF-ROADING, THEY’VE GOT REALLY GREAT DYNAMICS AS AN ELECTRIC VEHICLE.”

—JIM THOMAS ’74



batteries—can mostly replenish the battery within a half-hour or less.

Some car battery cells are cylindrical cells that, at first glance, look like those found in a flashlight battery.

“But it’s how you manage those batteries that’s becoming more sophisticated,” Thomas says. “Rivian’s battery modules provide the highest density in the industry and have a technology-leading battery management system.”

Still, the day when electric vehicles comprise even half of all cars on the road could be several decades away, as the charging infrastructure develops and people lose anxieties about being stranded on empty batteries, he says.

It’s a concern echoed by Scott Benjamin, an assistant professor in the Bisk College of Business at Florida Tech and director of the college’s Center for Entrepreneurship and New Business.

“You’re trying to get people to change behavior, and that takes time,” Benjamin

says. “There’s got to be a financial motivation for consumers. If there’s not an economic motivation, people are slow to adopt.”

Benjamin compares electric cars to solar panels.

“The people who are installing them now are doing so because they want to do what’s good for the environment. ... If people had an altruistic motive, then everybody would have solar panels on their house.”

However, he applauds Rivian’s efforts to find a niche in the electric vehicle market.

“It’s taken decades, but the needle is moving in the right direction.”

While most aspiring electric carmakers promote themselves to raise capital, Rivian has relied on the largesse of private investors and, most recently, strategic investors. Earlier this year, Amazon led a \$700 million investment round in Rivian, and Ford recently made a \$500 million investment.

Thomas, for his part, works with governments, businesses and key industries to advance Rivian’s name, develop partnerships and leverage Rivian’s technology—like its vehicle skateboard architecture and platform and its battery control systems—for application in other products.

“There’s a lot of networking, a lot of meetings that I’m involved in and analyses of how we could partner with different groups—especially companies in industries that are facing significant disruption with the adoption of electric vehicles,” he says.

For the most part, though, Rivian has operated in what Thomas calls “stealth mode,” quietly pruning its products to show consumers that electric vehicles aren’t just for the highway.

“We’ve had an impact,” Thomas says. “We’ve made consumers aware of a new breed of electric vehicles and made other companies look at their bread-and-butter vehicles.”



ANIKA AHMED '17



UNIVERSITY RESEARCH PROFESSOR MARY HELEN MCCAY



JENNIFER BERG '19

ASSISTANT PROFESSOR SHERMINEH FAIRCHILD



STEMMING *the Tide*

By Karly Horn

While American society has seen considerable improvement in female representation in the science, technology, engineering and mathematics fields, gender parity in STEM remains elusive. What has changed? What hasn't? And, most important, where do we go from here?

When Shermineh Fairchild walked into Florida Tech's administration office to interview for an assistant professorship in the department of aerospace, physics and space sciences, she was pleasantly surprised.

Greeting her was a room full of women. Not just any women: Female scientists. In leadership roles. Wearing bright colors. Smiling.

Having grown up a young girl in Iran, where a rigid education system and legal discrimination based on gender, beliefs and appearances limit women's professional advancement opportunities, this was the stuff of dreams.

"It was just a breath of fresh air," Fairchild says, and she accepted the position weeks later.

Unfortunately, even in the United States, professional female leaders in the science, technology, engineering and mathematics (STEM) fields are few.

People debate how it happened, how to fix it and even if it matters. But on one fact, there is no debate: Women are underrepresented in STEM fields.

While, according to the National Center of Education Statistics, they have consistently earned about 57% of the bachelor's degrees awarded in the U.S. for the last 18 years, women are earning only about 36% of those in STEM disciplines.

Of those who earn STEM degrees, even fewer work in the field, with almost half of women leaving STEM occupations within a decade—close to twice the frequency of their male counterparts—and women hold only about 18% of STEM leadership roles.

"Now that I'm a 'woman in STEM,' there is a big pressure to succeed," Fairchild says. "In society's eyes, when I fail, it's not just my failure—it's a reflection of all women. There shouldn't be that pressure."

But as any good scientist knows, to solve a problem, you must first understand its origins.

It's all about perception.

Girls play with dolls.

Boys play with building blocks.

Many believe that stereotypes like these are at the root of the problem.

Research shows that "gender socialization," or the learned social expectations associated with one's sex, begins at a young age. Traditionally, these mentalities include stereotypes that males excel at math and science and females are better

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in the social sciences, despite research evidence to the contrary.

These gender stereotypes shape girls' attitudes toward and confidence in math and science and ultimately decrease their interest in STEM fields.

Likewise, although society has made strides in equalizing the general workforce, with women making up about 47% of U.S. laborers, stereotypes based on traditional gender roles—men working outside the home and women running the household—persist.

Anika Ahmed '17 was born in Bangladesh and lived there until she came to Florida Tech to study aerospace engineering in 2014.

"I come from a brown culture where girls aren't encouraged, and I took it personal from the very beginning," Ahmed says. "All my male friends were getting encouraged to pursue big careers, and we were being groomed for housework."

Despite significantly better conditions comparatively, Ahmed still recognizes gender stereotypes being consciously and subconsciously reinforced in U.S. schools, homes and society.

From dress-up clothes and tea sets instead of Legos and sports equipment to compliments about their pretty appearances instead of their clever ideas, what young girls are given, they internalize.

So, Ahmed is giving them something different: Girls Who Code.

Girls Who Code is an international nonprofit organization that, through free after-school, campus and summer programs, teaches young girls about computer science, careers in STEM fields, analytical skills and, most important, confidence.

"With education, the things they can do—incredible. They need to hear it more," Ahmed says.

Having launched in November 2018, Ahmed's Girls Who Code Florida Tech

chapter's first class includes 11 fifth- and sixth-grade girls. The key, Ahmed says, is the program's structure. With concrete lesson plans, a proven curriculum and an established textbook, she needs only to arrange for skilled tutors to facilitate the classes.

"I want to work toward the education of young girls and to break those barriers for them, so they don't look at it as something boys do," Ahmed says. "They can do it, and they can excel."

In the field

Today, a growing number of women overcome that gender socialization and decide to pursue STEM careers. Unfortunately, not all people can so easily relinquish the societal stereotypes ingrained in them.

"I really think the main problem is that people—even other women,



“

Now that I'm a 'woman in STEM,' there is a big pressure to succeed. In society's eyes, when I fail, it's not just my failure—it's a reflection of all women. There shouldn't be that pressure.”

ASSISTANT PROFESSOR SHERMINEH FAIRCHILD



“

The more we talk about it, the more we address the issue and work toward it, the faster we'll reach the point where everything is neutral—there's no minority or discrimination.”

ANIKA AHMED '17

“I think a common challenge is not feeling validated as an engineer or a scientist.”

JENNIFER BERG '19

unfortunately—don't take you seriously or as seriously as they take a man in the same position,” Fairchild says.

Recent biomedical engineering graduate Jennifer Berg '19 agrees.

“I think a common challenge is not feeling validated as an engineer or a scientist,” Berg says. “When you speak up or when you try to give your opinion, it's going to be criticized a lot more harshly, and when you make a mistake, it's going to be judged a lot worse.”

This discrimination results not only in women's lost research collaborations, presentation opportunities and promotion prospects, but also in a voided sense of the group belonging that humankind inherently seeks.

In fact, research shows that a key measure of positive versus negative experiences is acceptance within one's peer group.

“You're willingly going into a field where you know you're going to be a minority,” Berg says. “It's difficult getting out of your comfort zone, and that could be a hesitation for some girls wanting to go into STEM.”

Berg finds comfort in the biomedical engineering program's about 50-50 male-to-female ratio, but her four years studying alongside STEM peers have not been without seclusion.

During an automotive engineering internship, Berg was the only woman on her team and one of only four female engineering interns at the company that summer.

“Having other females to support and empower each other is a very helpful thing when you're trying to go to college or build a career,” Berg says. “Females don't always get the opportunity to form that kind of support circle, which I think is beneficial to have, regardless of if you're an engineer.”

So true to engineering form, if it doesn't occur naturally, they build it themselves.

Women-in-STEM groups serve multiple purposes, from providing a sense of

camaraderie and establishing a network of peers and mentors to developing strategies for a more equitable workforce, cultivating the next generation of professional STEM women and sending a very clear, very important message: It can be done.

“It's hard for me to imagine myself as a CEO, because there aren't many women CEOs leading Fortune 500 companies—or any companies—so that's something we want to work toward,” Ahmed says.

As home to a diverse group of female STEM students, faculty, staff and alumni, Florida Tech is a hub for such collaboration, taking form in campus clubs like Launch STEM Careers, the Women in STEM group and the Society of Women Engineers (SWE).

These organizations sponsor female-empowerment initiatives through volunteer work, hosting STEM-exploration events, summer camps, interactive science experiments and mentorship programs for school-aged girls, as well as professional networking seminars featuring mock interviews, inspirational speakers, advisement opportunities and job and internship fairs for college women.

In January, Harris Corp. hosted Florida Tech's Women in STEM group at its Global Innovation Center, where members interacted with female Harris executives and learned about their career paths, explored Harris' defense communication innovations and discussed potential internship opportunities.

“It's all to encourage young girls going into STEM and sparking their interest to show them, ‘Hey, we're doing STEM, and you can do it, too,’” says Berg, who served as president of the SWE Florida Tech chapter. “It's about having a community—a support system.”

Events and organizations such as these also serve to break down a stereotype that transcends gender differences.

“The general public thinks of scientists and engineers as very serious, one-dimensional people without many social skills or a life outside of work,” Fairchild says.

“The stereotype has existed for so long, it's hard to change it. But if we want to see a big change, we have to show people that you don't need to fit into that cliché to succeed.”

Is it working?

Florida Tech first lady and University Research Professor Mary Helen McCay thinks so.

Her almost 60-year career in STEM began as a freshman engineering science student at Florida State University, where she was the only female engineering student at the time and was told by a professor at orientation, “You'll be in home ec. by the end of the term.”

From her days as a payload specialist astronaut alternate to her current role as head of Florida Tech's National Center for Hydrogen Research, McCay has watched the environment for women in STEM fields evolve.

“I feel really good about it,” McCay says. “I'm incredibly impressed with what Florida Tech is doing. I just want to tell them to keep going; keep doing what you're doing.”

Aside from the continually increasing number of clubs, organizations and events encouraging women in STEM fields, Florida Tech's student, faculty and staff populations reflect increased diversity, too.

In the last 20 years, the number of females earning graduate and undergraduate degrees in STEM fields has almost doubled, with a 73% increase in just the last 10 years, and the total number of women earning graduate and undergraduate degrees has increased 140% in the same time period. Even more promising, 91% of women who in 2017 graduated with degrees in STEM fields reported working in their field of study six months after graduation.

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IN THE LAST 20 YEARS, THE NUMBER OF FEMALES EARNING STEM DEGREES HAS ALMOST DOUBLED, WITH A 73% INCREASE IN JUST THE LAST 10 YEARS.

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Likewise, the percent of female instructional faculty members at Florida Tech has grown by 12% since 2000, and women like McCay, Senior Vice President for Research Gisele Bennett, Senior Vice President for Academic Administration Monica Baloga, Associate Provost Mary Bonhomme and others serve in prominent leadership roles on campus.

“At this point, it’s almost pandemic,” Ahmed says. “The more we talk about it, the more we address the issue and work toward it, the faster we’ll reach the point where everything is neutral—there’s no minority or discrimination.”

However, topics like affirmative action, equal pay, workplace harassment and corporate policies like maternity leave remain points of public debate. And still, some ask:

Does it matter?

Simply put, yes.

The U.S. Department of Labor projects millions of STEM-field job openings will need to be filled—whether by men or women—in the coming decade.

Ninety-three out of 100 occupations in STEM fields report wages higher than the national average. More women in these lucrative positions would mean a narrowed gender pay gap and increased female financial independence.

“Unfortunately, a lot of women are trying to think more like men and feel like, in order to survive in the field, they need to take on more of the male traits,” McCay says. “But I happen to think we have a lot to offer on our side. We’re complementary, and we all just need to learn to work with each other, together.”

Alumna Advice

“I think we need to show young girls and women the real faces of technology and science. There are so many inspirational women out there, and we need to make sure that young girls know more than just the stereotypes.”



Jessica Vidmark

'16 Electrical Engineering

PROFESSION:

Biomedical engineering Ph.D. student at University of Southern California

HUMBLE BRAG:

Can rap all the lyrics to “Love the Way You Lie” (try me!)

ALTERNATE (NON-STEM) CAREER:

Tennis pro

PET PEEVE:

When people mix up Sweden and Switzerland ...



“Don’t let the biases and expectations of society limit you in your journey to achieving your dreams. Set your own standards and break those expectations. Throw yourself into everything with your head held high.”

Brooklyn Byford

'17 Ocean Engineering

PROFESSION:

Ocean engineering graduate student at Florida Tech

ALTERNATE (NON-STEM) CAREER:

Crime scene investigator

UNPOPULAR OPINION:

Ranch goes on EVERYTHING!



Laura Seward Forczyk

'06 Astronomy & Astrophysics

PROFESSION: Owner, Astralytical

UNPOPULAR OPINION: Dark chocolate is the best chocolate

REST DAYS ARE: Nonexistent — I’m a mom!

PET PEEVE: “Manned” spaceflight—it’s human spaceflight!

“Women, be bold. Be assertive. Apply for things. Apply for things even if you don’t think you’re qualified. Volunteer for projects, and run for leadership positions. Don’t let others’ opinions of you hold you back.”

“

One thing I can say is don’t be afraid to be your authentic self in your field. If you get backlash for it, use that as fuel to be even more confident.”



Jeana Mascio

'11 Meteorology

PROFESSION:

Senior research associate at Atmospheric and Environmental Research Inc.

ALTERNATE (NON-STEM) CAREER:

Owning my own vegan bakery

YOUR LAST RANDOM THOUGHT:

Is Bran Stark actually the Night King? #GoT

A Giant Leap

By Karly Horn

It is 1969, and American spirits are down.

The past decade has been beleaguered by the casualties of Vietnam, harsh division over civil rights issues, race riots, the persistence of the Cold War and the Soviet Union's continued dominance in the space race.

Still reeling from the assassination of President John F. Kennedy just six years ago, the country has yet to fully heal. We remember his speech at Rice University, where he made it our goal to send an American safely to the moon before the end of the decade.

“We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard,” he said.

Perhaps too hard. Kennedy's astronomical goal—considered impossible by some, improbable by most—is as big a challenge as anticipated. The Apollo program has consumed countless hours of labor, millions of U.S. dollars and the lives of three American astronauts.

But the work gives the U.S. purpose. And in that, we find hope.

On July 20, 1969, hope gives way to resolve. As Neil Armstrong plants the American flag into the dusty surface of the moon, he plants a renewed pride for America and the boundless ingenuity of its citizens in our hearts.

Mission accomplished.

About 400,000 engineers, scientists and technicians from more than 20,000 companies and universities worked on the Apollo program.

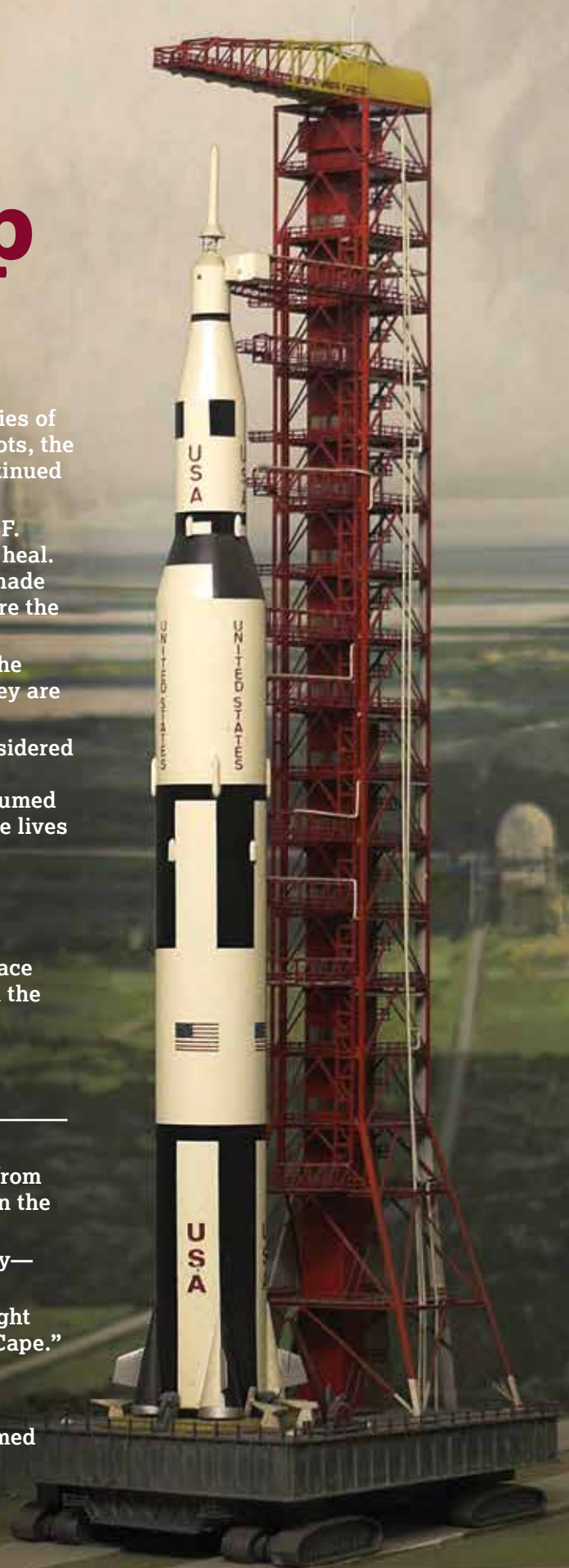
No university was closer—by proximity or by intimacy—than Florida Tech.

Many of our almost 2,000 students at the time took night classes, spending their days working full-time at “the Cape.”

When Apollo 11 was being built, they **worked** on it.

When it launched, they **witnessed** it.

When Neil Armstrong's first steps on the moon streamed live on television, they **watched** it.



**Today, they
remember it.**

Tuck Fuller '70



Of course we were aware of the history being made, but we also had concerns due to some of the failures of the past. I was living with my parents in Indialantic, and our backyard faced north, giving us a fairly good view of the launches, even though we were several miles away. We could sit in the yard and watch or climb up on the roof. Some of the launches seemed routine, but not this one.

Art Banman '70

July 20, 1969, was a day everyone was gathered around black-and-white TV sets and radios—the excitement, hope, anticipation, anxiety and concern to see this major milestone in history and space exploration. I was in my last two quarters of classes while working for a small NASA contractor, DBA Systems. DBA's mission support was to provide reentry radar tracking software focused on the 'reentry bounce-blackout.' I still have my NASA Apollo Achievement Award. To this day, I step outside at every launch I can and marvel at the accomplishments the USA had made.

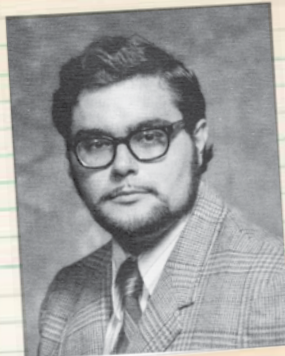


Ray Floyd '70

I joined the Apollo team in January 1966, going to work with IBM. My particular assignment was on the DEE-6 computer system, responsible for monitoring several thousand sensors within the Saturn I and Saturn V rocket systems. I had never had before or [have had] since an assignment that brought such vivid memories to recall. I worked on all 16 of the Apollo missions and found it most interesting how such different companies and projects could come together as a family. Boeing (Chrysler, Lockheed, etc.) didn't have a problem—if there was a problem, WE had it and worked together to solve it.

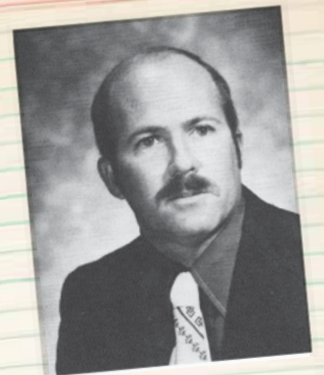
Gene Blaettler '72

I was working a summer job at NBC-TV in New York City between my freshman and sophomore years. I was in a department that made film copies of live transmissions from the moon as well as the trip to and back. This was an exciting time for the U.S. and the world. An interesting side benefit of my job was access to the studio, where full-size mock-ups of the lunar excursion module (LEM) were located and used during informational news events.



Larry Mortland '75, '78, '89 M.S.

I was on active duty in the military, and we were constantly sharing smiles of success and pride in American capability. The United States, in history, went from a basic unknown quantity in the late 1800s to defeating a world power, Spain, to providing the closure to WWI and exiting WWII as the leading world power. Apollo 11 was a continuance of the status our nation has achieved. I can hardly wait to see what is coming in our near future.



Oakley Drumheller '70

When I got out of the Army in 1967, I was hired by General Electric (GE) at the space center. NASA was trying to expand and improve its quality assurance following the fire that killed three of our astronauts. After six months, GE received a new contract for managing and monitoring the spacecraft and lunar module prior to and during launch. ... We developed the acceptance checkout equipment used for monitoring, displaying and recording all biomedical data with each of the astronauts.



News from the desk of
Kim Bozik '87
Florida Tech
Alumni Association President

As Florida Tech graduates, we have so much to celebrate, and this publication does a great job strengthening our connections and illustrating the impact we have on the world. As always, please email me or the Office of Alumni Affairs with any suggestions you have for keeping alumni in touch and engaged with the university.

The 60th anniversary activities continued into the new year, and I was lucky enough to have attended the gathering in honor of the university's anniversary publication, *60 for 60: Celebrating 60 Years of Alumni at Florida Institute of Technology*, on campus in February. The event launched the remarkable book, which highlights only a small number of Florida Tech's outstanding graduates over the past six decades, in the company of those featured. I walked away knowing that our alumni make immediate, thoughtful and long-lasting contributions in their chosen fields. It is exciting to imagine the kind of amazing things you all will achieve by, perhaps, the 75-year anniversary.

By the time this article hits the press, we should have received the final approvals for the new Alumni Center, and groundbreaking will begin soon—learn more about it on page 14. When the center is complete, the north entrance to the campus will have a stunning new look that will remind all entering students of the ultimate goal: to be a Florida Tech graduate. Thanks to the alumni board and several key Florida Tech staff members who have been instrumental through the process, this long-sought goal will soon be a reality.

For those of you who graduated at the end of the semester, congratulations! You're in good company with the more than 60,000 alumni who came before you, and we're proud of you. As graduates, you will automatically become members of the Florida Tech Alumni Association, so ensure you stay in the loop by keeping your email address up to date with the Office of Alumni Affairs at 321-674-7190 or alumni@fit.edu.

Lastly, it was a pleasure to host the recent alumni board meeting at The Scott Center for Autism Treatment. We toured the facility and learned a great deal about the excellent care being given there. Like much that we do at Florida Tech, it was truly inspiring. Go Panthers!

YOUR ALUMNI ASSOCIATION OFFICERS

- Kim Bozik '87 | President | Chandler, AZ | kim.b.bozik@intel.com
- Mike Kalajian '95 | Vice President | Indialantic, FL | mike@mkstructural.com
- Warren Pittorie '15 | Secretary | Melbourne, FL | wpittorie2012@fit.edu
- Brian Stahl '86, '88 M.S. | Treasurer | Satellite Beach, FL | brianmstahl@gmail.com
- Al Hagopian '89, '94 MBA | Member-at-Large | Indialantic, FL | al.hagopian@hds.com
- Jody Palmer '07 | Member-at-Large | Melbourne, FL | jpalmer@brevardzoo.org

Book Release



CELEBRATING 60 FOR 60

The Florida Tech community gathered to hear the inspiring stories behind the 60 alumni featured in the university's anniversary publication, *60 for 60: Celebrating 60 Years of Alumni at Florida Institute of Technology*. Unveiled Feb. 23, 2019, this commemorative book features 60 years' worth of accomplishments achieved by Florida Tech's amazing graduates.

The audience was regaled with highlights from the stories of the featured educators, astronauts, scientists, engineers, athletes, clinical researchers and business and technology leaders who espouse Florida Tech's core values: student success, research for the benefit of mankind and development of global citizens.

For six decades and counting, we have remained proud of our past, which is embodied in our alumni. Hail to the next decade of Florida Tech dreamers and achievers, and go Panthers!

D.C.



Concert Series

Seinfeld | Leno | The Beach Boys



MLK Life and Legacy Celebration



More reception photos: floridatech.edu/alumni



1960s

1 BRUCE DEFOREST '69 stopped by the Alumni House to chat about his time at Florida Tech and his career working on the lunar landing team at NASA and in the space and defense sectors before pursuing equestrian management and life on the golf course.

1970s

GARY LAGERLOEF '71 was made an American Meteorological Society (AMS) fellow at the annual AMS meeting in Austin, Texas, after receiving the Verner E. Suomi Technology Medal for his "outstanding, decades-long leadership in advancing remote-sensing technology for ocean salinity, which led to the groundbreaking Aquarius satellite mission."

ALEXIS LOO '75 performed on the Millennium Stage at the John F. Kennedy Center for the Performing Arts in Washington, D.C., with the Encore Chorale, a dynamic ensemble created specifically for first-time or returning musicians over age 55.

2 JIM GEORGE '78, after retiring with 30 years of service at Florida Power & Light, has started a marine transportation business in Stuart, Florida, offering river sightseeing tours, yacht delivery and offshore fishing trips to places like the Bahamas.

1980s

RONALD WILLEY '80 M.S. received the 2019 Society of Vacuum Coaters Mentor Award for his more than 50 years of technical and educational leadership in the international optical coating community. Having invented a robust plasma/ion source for optical coating applications, Willey holds four U.S. patents and is an experienced instructor who focuses on mentoring students on optical thin film design and production and assisting clients with process development and improvement.

3 DUANE DE FREESE '81 M.S., '88 Ph.D., executive director of the Indian River Lagoon National Estuary Program, received the Friends of St. Sebastian River 2018 Environmental Enhancement Award for his instrumental role in getting the lagoon designated as an Estuary of National Significance almost 30 years ago and for his continuous efforts to improve the health of the lagoon.

4 MARK FICK '85 and **DENNIS BRANDT** '02, '06 M.S., piloted a two-day United Airlines trip together. They spent the time sharing Florida Tech memories and reminiscing about campus buildings and professors that overlapped during their respective college years.

MICHAEL SOLE '86, NextEra Energy Inc. vice president of environmental services who has served on the Florida Fish and Wildlife Conservation Commission since May 2017, was elected vice chairman of the commission.

5 RICK GERACI '87 M.S., a retired United States Army brigadier general, was named the 11th president of the Missouri Military Academy, an all-boys academy known as the preeminent military and college preparatory school in the midwestern and central U.S.

6 EMAD ALDAOUS '88 was appointed Lenovo's new data center country manager for Saudi Arabia, where he will be responsible for growing Lenovo Data Center Group's business in the kingdom. He has worked with companies such as Detasad, F5 Networks, Avaya and Motorola and has won multiple awards for his success in the industry.

JOHN HITE '89 was appointed associate vice president and chief audit executive at the University of West Florida. He has nearly 30 years of audit experience, 16 of which are in higher education internal auditing. In his new role, Hite will develop annual and long-range plans for UWF's internal auditing and management consulting department.

1990s

RONDA HENNING '90 MBA, a senior scientist in cybersecurity and information assurance who has worked at Harris Corp. for more than 30 years, was named the 2019 Harris Corp. Fellow, the company's highest recognition for engineering and technical achievement. A highly accredited thought leader and mission solutions architect, Henning holds several patents, is a distinguished member of Women in Cybersecurity and serves as a mentor to female engineers.

7 BEN SIWINSKI '95, Gulf Coast senior planner and managing director at VHB, was featured as an influencer in *The St. Pete Catalyst*. At VHB, Siwinski led the establishment of a full-service planning and engineering office in Tampa and heads a group of professionals to enhance the health of communities throughout the Tampa Bay area.

8 LACRESHA NELSON '97 received a Modern Day Technology Leaders Award at the 33rd annual Black Engineer of the Year Awards STEM Conference. Nelson is the program management office lead for the Medical Appointment Scheduling System program at the Department of Veterans Affairs.

SUBMIT YOUR NEWS TO alumni@fit.edu

TRAVIS PROCTOR '98, CEO of Artemis IT and Florida Tech trustee, was presented the Cocoa Beach Regional Chamber of Commerce 2019 Distinguished Service Award for his community service work, including as chairperson of the Civilian Military Council and the Brevard Achievement Center, treasurer of Brevard Symphony Orchestra, treasurer-elect of the Salvation Army and board member for Junior Achievement and the Economic Development Commission of Florida's Space Coast.

2000s

9 JAMES GRAY '00, '03 M.S., was selected to be the next administrator of the Sebastian Inlet District, an independent special district chartered to maintain the navigational channel between the Atlantic Ocean and the Indian River. Formerly the natural resources manager for Indian River County, Gray managed and implemented the county's Beach Preservation Plan and the artificial reef and lagoon restoration programs, maintained navigational aids and secured and managed federal and state grants totaling more than \$50 million.

JIM HALLEY '03 was promoted to statewide planning coordinator in the Florida Department of Transportation's Office of Policy Planning, overseeing the Florida Transportation Plan.

10 ROBBY FINKLEA '04 welcomed twin cubs Wyatt Theodore and Annabelle Grace to the Panther family.

11 HADI GARIB '05 and his wife celebrated the birth of their first child, Sophia.

GARY BROWN '06 is making headlines as vice president of engineering at FaceFirst, a facial recognition software company based in Calabasas, California, whose technology specializes in helping banks control access to sensitive areas within their buildings using machine vision. The technology is also capable of using facial recognition to authorize customers' identities for security.

12 NICK EVANCHO '06 and his wife, Melissa, welcomed baby Makenna Grace to the Panther family September 6, 2018.

13 DAVID KINCAID '06 has been promoted from associate to counsel at Cantor Colburn LLC, one of the largest intellectual property law firms in the U.S. Kincaid counsels clients on intellectual property matters across many technical fields, including high-tech, automotive, oil and gas, aerospace, manufacturing and more.

14 KASSANDRA CRIMI '08 has returned to Orlando's WFTV-Channel 9 as a meteorologist alongside anchor Karla Ray Saturday and Sunday mornings.

15 STEPHANIE GILKES '08 serves as a procurement analyst in the Army Contracting Command, which provides guidance, support and operational contracting status to U.S. Army Security Assistance Command personnel on foreign military sales.

continued on page 36



Order 60 for 60!
[floridatech.edu/
 alumni/60for60](http://floridatech.edu/alumni/60for60)



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 to share in the magazine. For details, email alumni@fit.edu.



TIZIANO BERNARD '15, '16 M.S., '18 Ph.D., was named one of *Forbes Italia's* 2019 "30 Under 30" young trailblazers in their industries. Bernard now works as an aviation systems and human factors engineer at Garmin International. While at Florida Tech, not only did Bernard's team win the Northrop Grumman Engineering and Science Student Design Showcase with the development of a Mars rover, but he also was the first graduate of our flight test engineering master's program, all of which were discussed in *Forbes'* two-page feature.

"Science does not belong to a country. It is without borders, and I think that's a very strong message," Bernard says. "The fact that *Forbes* recognized me from the other side of the world, that's very reassuring to see that what I'm doing has value."

OCCUPATION: Aviation systems and human factors engineer at Garmin International

PREOCCUPATION: The Italian Alps

THREE-WORD BIO: Sky. Sea. Speeeeeed.

ADVOCATES: Learning by transmitting passions

PROUDEST ACCOMPLISHMENT: Getting my wings

LAST ADVENTURE: Snowboarding in the Italian Dolomites

ALUMNOTES

continued from page 35

16 JAMES KLINGELHOEFER '08 was named director of sales for the Americas at Pelican BioThermal, a global temperature-controlled packaging company. Klingelhoefer will be responsible for leading and managing the U.S.-based sales team that will pursue revenue growth opportunities in North and South America.

LAMA HAKEM '09 was named an assistant professor in the department of human resources at Dar Al-Hekma University in Saudi Arabia. Her courses include negotiation, conflict resolution and organizational behavior.

2010s

17 TERESA MOON '10 and **RYAN MOON '11, '14 MBA**, welcomed their daughter, Evelyn, into the Panther family.

18 SEBASTIAN MORENO '10, '12 MBA, and **KATIE SPAGNOLO '12**, who met while studying and competing on the surf team at Florida Tech, are engaged. They live in Virginia Beach, Virginia, where Moreno works as a vacation consultant for Diamond Resorts International, and Katie works as a meteorologist for Surflife.

19 RAJIV MOTWANI '10 and his wife had their first child, a girl weighing 6 pounds, 8 ounces.

20 ROB PALMER '11 was promoted to executive vice president and bank operations manager

at EnerBank USA, a national consumer lender that helps strategic business partners and independent contractors increase their sales. In this role, Palmer will continue to lead EnerBank's digital transformation, enhancing IT resources and delivery channels.

21 JONATHAN HANNA '12 was recognized as the first recipient of the Airports Council International Latin American-Caribbean (ACI-LCA) Young Airport Professional Award, which recognizes outstanding young talent in the airport and aviation industry. Hanna is manager of airport solutions at Lynden Pindling International Airport in Nassau, Bahamas, and is responsible for maintaining airport certifications, ensuring regulatory compliance and identifying staff training needs.

22 NICOLE MOSBLECH '12 Ph.D. was named the School District of Indian River County teacher of the year. Mosblech started teaching English in South Korea through the Fulbright U.S. Scholar Program in 2003. Today, she is in her dream job teaching environmental science at Vero Beach High School, guiding students to become global citizens and better stewards of our planet.

23 BEN PODBIELSKI '12 M.S., '13 MBA, was one of 90 people from 31 countries selected to participate in Massachusetts Institute of Technology's Global Entrepreneurship Bootcamp, a program focused on technology and innovation in Tokyo, Japan.

24 MONIL SHAH '12 MBA, Ph.D., was announced as chief development officer for WindMIL Therapeutics, a clinical-stage company that develops marrow-infiltrating lymphocytes for cancer immunotherapy. Shah has more than 20 years of pharmaceutical and biotechnology experience in oncology drug development.

REMY SCHOTT '13 works as a senior cyber engineer for Raytheon Cyber Security Innovations (CSI), which got its start at Florida Tech and continues to have a strong presence in the Melbourne area.

LAUREN TOTH '13 Ph.D. received the 2019 International Coral Reef Society's (ICRS) Young Scientist Award for her work with the U.S. Geological Survey in St. Petersburg, Florida. The award recognizes an exceptional series of publications that have had a significant influence on coral-reef science. For this achievement, Toth is granted lifetime status as an ICRS fellow and was invited to present her research at the 14th International Coral Reef Symposium in Bremen, Germany.

25 ANTHONY FREUDE '14 M.S.A. and his wife, Anya, welcomed twin Panther cubs Leo Steven and Eve Marie to their family July 18, 2018.

JACOB GAMBLE '14 M.S. was appointed BLVD Centers Corporation's chief executive officer and executive director of its board of directors. With a more than 20-year track record in

areas ranging from operations to finance, Gamble specializes in the licensing process, build-outs and vertically integrated operations development.

26 BETH GITLIN '14, who is pursuing her Ph.D. at Florida Tech, appeared in a *Florida Today* article detailing her triumph over breast cancer. After completing a year of treatment, she helped found the Heart and Soul dragon boat paddling team for cancer survivors and supporters that has grown into a more than 70-member nonprofit organization that promotes health, wellness, teamwork and friendly competition domestically and internationally.

27 ANGIE LASSMAN '14 has returned to Florida as part of the First Alert Weather Team on NBC 6 in Miami. Prior to this position, Lassman was the weekday morning meteorologist at Fox 26 KNPN in St. Joseph, Missouri. She feels that the rise of extreme weather has highlighted the need for more educated voices in the broadcast meteorology field, and she hopes to use her platform to have a positive impact in the community.

28 RILEY LORENZ '15 and **CHRISTOPHER PISSOURIOS '16**, Florida Tech classmates, friends and now fellow SkyWest pilots, got the rare chance to fly together!

29 KALEB LEACH '16, who has played professional football on several continents, is pursuing a master's degree while working as an international real estate developer.



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30 MITCH THORN '16 was signed as a goalie to the South Georgia Tormenta FC's 2019 USL League One team. When Thorn played for Florida Tech, he ranked third in the Sunshine State Conference for goals against average in 2015 and third for save percentage in 2014. He also appeared on the All-Sunshine State Conference II team in 2014 and 2015.



27

SMIT SANGHRAJKA '17 delivered a TEDx Talk at Brookhouse School in Kenya. Sanghrajka's talk was centered on the idea that the fourth Industrial Revolution is upon us. In it, he discusses how different technological devices have transformed in a short time, covering 3D printing for biomedical applications and the implications for global populations.



28

ROSHIMA ROBERTS '18 has returned to the Caribbean to serve as air traffic services manager in Anguilla at Clayton J. Lloyd International Airport. Roberts is passionate about aviation and hopes to one day return to her home in the Dominican Republic to help with aviation safety.



29



30

SHAYNA BEGAY '10, '11 M.S., was featured on NBC News Learn's "Discovering You: Engineering Your World" video series highlighting young, female engineers. A Navajo Native American who grew up on and off the reservation, Begay discusses in the video how growing up learning skills like traditional rug weaving, silversmithing and pottery taught her to not only design things, but to physically create them. Today, she uses those same skills as an aerospace engineer at the Sandia National Laboratories, a New Mexico company that has been involved with the development of nuclear weapons since World War II.

"I think having a series like this helps expose students to the possibilities that exist for them," Begay says. "We need more diversity in STEM because it brings different perspectives together and is crucial to analyzing and solving the problems of tomorrow."

OCCUPATION: Senior technical staff member at Sandia National Laboratories

PREOCCUPATION: Poetry, 3D printing, developing classes and experiments to teach at outreach programs

RECENT ACCOMPLISHMENT: Helping Navajo Technical University become the first American tribal university to achieve ABET accreditation for its industrial and electrical engineering undergraduate programs

LAST ADVENTURE: Meeting up with fellow Florida Tech alumni in New Orleans for a music festival



FIN BONSET '96, '99 M.S.A., an adjunct professor in the College of Aeronautics, has taken on a new role as VHB director of aviation services. With more than 20 years of domestic and international airport planning and project management experience, including about three years as VHB manager of airport planning, Bonset will work to advance and expand VHB's solid foundation as a complete aviation service provider.

"Aviation is a forever-changing world. Every project is different, and every client is different," Bonset says. "I am all about helping the future generations of airport experts. There is more to aviation than just flying."

OCCUPATION: Director of aviation services at VHB

PREOCCUPATION: Surfing

THREE-WORD BIO: Energetic. Persistent. Traveler.

ADVOCATES: Florida Tech Alumni Association, diversity in the workplace and environmental stewardship

LAST ADVENTURE: Iceland trip with my wife

NEVER: Settle for less. **ALWAYS:** Go for it.



IN MEMORIAM

JOSALYN SLAUGHTER GREGORY '14 passed away Jan. 26 at her home in Abingdon, Maryland.

HOWARD NEIL HEBERT, a board of trustees member, passed away peacefully at home Feb. 5.

JEROME "JERRY" PERLMUTTER '64 M.S., who earned his master's degree in space sciences, passed away Jan. 29.

ALLAN "AL" GILES SKELLET, beloved former men's basketball team assistant coach, first women's golf team head coach and Florida Tech Sports Hall of Fame inductee, passed away Jan. 16.

JOSEPH A. BOYD, the former chairman and CEO of Harris Corp. who joined Florida Tech's board of trustees just five years after the university was founded, passed away April 19 at age 98.

As the first of four Harris leaders to serve on the board, Boyd ushered in a powerful partnership between the organization and Florida Tech.

Within just a few years of being named to the board, Boyd made a substantial impact on the university. In August 1966, he donated his 39-foot yacht to Florida Tech's fledgling oceanography program. The vessel was rechristened *Miss FIT*.

An engineer by training with a Ph.D. in electrical engineering, Boyd truly understood the value and importance of education. He would go on to serve 28 years as an active member of the Florida Tech board from 1963 to 1991, including two terms as chairman. He was later named trustee emeritus.

In Memoriam Allen S. Henry

ALLEN S. HENRY, the longtime member and past chairman of Florida Tech's board of trustees, passed away March 19 at age 78.

Henry was responsible for \$3.8 million in gifts to the university, including \$1.25 million to create the Allen S. Henry Professor

of Engineering Endowment and a \$500,000 gift for undergraduate scholarships during the Golden Anniversary Campaign in 2007.

Henry said he funded scholarships because he knew how important they could be.

"My higher education was largely self-supported," he told the university in 2011. "Scholarships and student loans were a big part of that. I also worked a lot. Scholarships were especially important to me as an undergraduate."

A building on Florida Tech's south campus is named in Henry's honor.

"Al understood both the transformative power of education and how a helping hand could be truly life-changing," said Florida Tech President Dwayne McCay. "He brought passion and vision to our board and helped push Florida Tech—and our students—to even greater heights."



28° 3' 50" N, 80° 37' 30" W

BRINGIN' IT HOME

DESTINATION FLORIDA TECH  HOMECOMING 2019

OCT. 24-26 • 5K | FEST | GALA

FLORIDA TECH balfour

BE PART OF THE TRADITION

The Official Ring of Florida Institute of Technology

See Florida Tech's ring collection at BALFOUR.COM/FIT





Full STEM Ahead

KIM DAY '14

Growing up on Florida's Space Coast and watching shuttle launches inspired Kim Day to pursue a career that would place her at the forefront of leading-edge technology. Before those rocket launches shaped her path, she was involved in FIRST (For Inspiration and Recognition of Science and Technology), a leading, nonprofit STEM engagement program for children worldwide. More than robots, FIRST encourages students to pursue education and careers in STEM-related fields and prepares them to be leaders and innovators.

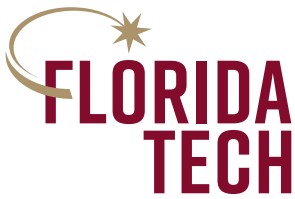
As the second Farmer Scholar to study at Florida Tech, Day excelled in her coursework with a double major in physics and computer science. In the summers of 2011 and 2012, Day interned at Northrop Grumman as a 2010 NextGen Engineers Scholarship winner. In 2013, she landed a summer internship at Google, where she worked on the Google Accounts team, managing the Google sign-in and account-creation pages. At the end of her internship, she was hired as a full-time employee. Today, she works on the Chromecast team and has embraced the Google culture, joining a yo-yo club,

taking tango lessons, performing in the Google orchestra and volunteering to help children with Lego robotics.

Day says the research experience she gained at Florida Tech has proven valuable.

"My time as the administrator for the Tier 3 computer cluster has been surprisingly helpful," she says. Having served as Association for Computing Machinery president from 2011 to 2013, she says, "our 'stay-late-and-code sessions' really did emulate what computer engineers experience in real life!"

Excerpt from **60 for 60: Celebrating Sixty Years of Alumni at Florida Institute of Technology**. To purchase a copy, visit floridatech.edu/alumni/60for60 or contact the Office of Alumni Affairs at alumni@fit.edu or 321-674-7190.

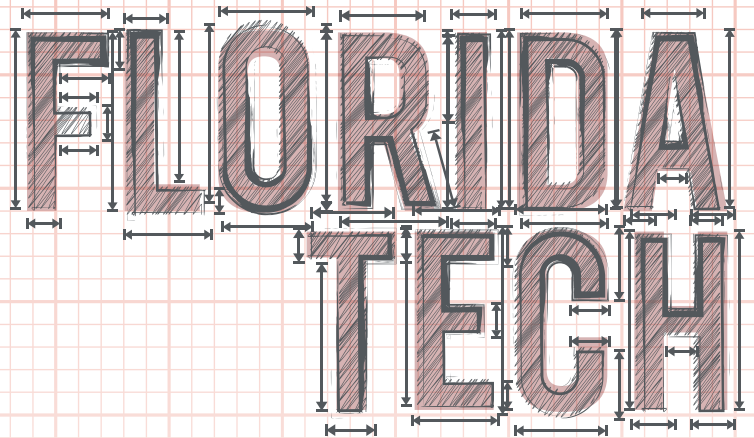


**Office of Marketing and
Communications**

150 W. University Blvd.
Melbourne, FL 32901-6975

Brand Liftoff

In December 2017, Florida Institute of Technology embarked on a journey to discover and articulate a unique and authentic university brand platform—a bold, powerful statement that would communicate our undeniable quality and character and set us apart from the institutions we compete with for talent, resources and visibility. In May, with input from stakeholders, students, faculty, staff and alumni, we launched Florida Tech's new brand platform: The Relentless Pursuit of Greatness. Complemented by a new identity program and a final decision on the age-old "F.I.T." vs. "Florida Tech" debate, our brand is essentially a promise—a commitment from us to engage with and provide services to our constituents in a way that, over time, will come to stand for something significant, unique and meaningful to all who experience Florida Tech.



BRAND IDENTITY

With a clean, modern wordmark and integrated orbit/starburst imagery, our new logo both honors Florida Tech's past and signifies the university's strong push into the future. Refreshed fonts and an expanded color palette round out this bold new visual identity. Not to worry: Every diploma will continue to bear the traditional university seal—and Pete's not going anywhere.

BRAND PLATFORM

"The Relentless Pursuit of Greatness"

It's not a slogan or a tagline. It's the idea that drives who we are, what we do and how we do it. Florida Tech has long been about ambition, perseverance and lofty goals. Our brand platform communicates these qualities and provides a foundation for all of the university's strategic communications.

FIT OR FLORIDA TECH

As a community, we've grown accustomed to the lighthearted debate over our nickname. But branding is about consistency, and that means deciding on the best way to introduce ourselves to the world. Marketing analysis suggested—and a survey of students, staff and alumni confirmed—the university will be better served using "Florida Tech."