

# FLORIDA TECH

M A G A Z I N E

SPRING 2024

## IN THE **BLINK** OF AN **EYE**

What blinking  
can reveal about  
brain health

### Plus!

Forward Together,  
Boundless Potential:  
The Florida Tech Strategic Plan





# In This Issue

Spring 2024 • Volume 33, Issue 1

## Student Design Showcase

On April 19, the university community, local industry leaders and the general public came together on campus for Florida Tech's annual Northrop Grumman Engineering and Science Student Design Showcase. With 120 projects presented, students displayed their research, designs and prototypes on topics including food waste-to-fuel conversion, surgery improvement and sustaining life in space.



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Under the visionary new leadership of President John Nicklow, we are poised more than ever for greatness. But achieving the lofty goals to which we aspire requires a plan. So, together with our community, we made one.

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Florida Tech and Larsen Motorsports celebrate 10 years of partnership, and we're still picking up speed.

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Florida Tech researchers are studying what blinking can reveal about brain health.

On the cover: Alec Anzalone is an undergraduate biomedical engineering student of assistant professor Careesa Liu, who conducts research with blink-related oscillations with assistant professor Sujoy Ghosh Hajra.

## A MESSAGE FROM THE PRESIDENT

Dear Florida Tech family,

With the academic year drawing to a close, I reflect on what a great year it has been, as we've celebrated Florida Tech's 65th anniversary, highlighting our proud past and bright future.

From sports championship runs to Homecoming fun, this university community has done it all with style. We marked another successful signature event of the Florida Tech experience, as the annual Northrop Grumman Engineering and Science Student Design Showcase was held April 19. What a day that was! Covering the cosmic to the practical, from rovers that fly to methods for improving surgery and everything in between, 120 capstone projects were presented for judging by local industry leaders. It's just another way a Florida Tech education prepares students for a lifetime of career success.

As I conclude my first year as your president, I remain impressed by the energy, enthusiasm and teamwork I've encountered from students, faculty, staff and alumni. That spirit, combined with bold planning and hard work, means next academic year will bring even more opportunity for achievement. Our Forward Together, Boundless Potential strategic plan is the blueprint for that success. I encourage you to read more about it on page 18, and check out the full plan on the university website when you have a moment.

Please accept my best wishes for a great summer, and remember that wherever you go, and whatever you do, Florida Tech is your university, and we are here for you.

Until we talk again, Go Panthers!

Sincerely,  
John Nicklow, Ph.D.  
President



## FLORIDA TECH MAGAZINE

*Florida Tech Magazine* is published three times a year by Florida Tech's Office of Marketing and Communications and is distributed to over 65,000 readers.

EDITORIAL DIRECTOR Andy McIlwraith

ART DIRECTOR Christena Callahan '07 M.S.

MANAGING EDITOR Karly Horn

ASSOCIATE EDITORS Adam Lowenstein, Mary-Lou Watkinson

ADDITIONAL CONTRIBUTORS Erin Alvarado '16, Kevin Boodoosingh '20, '21 M.S., Meredith Carroll '03 M.S., Jerry Durney, Erin Peterson, Madeline Taylor

PRODUCTION Kristie Kwong

WEB LAYOUT David Smith

CIRCULATION Alaena Wade-Meadows

PHOTOGRAPHY Dominic Agostini, Athletic Communications, Kevin Boodoosingh, Mike Brown, Harry P. Weber University Archives, Adam Palumbo, Erika Sauer

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### Alumni Office

ASSISTANT VICE PRESIDENT, ALUMNI AFFAIRS

Gina Yates '17, '19, 321-674-8428, [gyates@fit.edu](mailto:gyates@fit.edu)

ALUMNI COMMUNICATIONS & CONTENT MANAGER

Erin Alvarado '16, 321-674-6141, [ealvarado@fit.edu](mailto:ealvarado@fit.edu)

ALUMNI ENGAGEMENT OFFICER

Mary Ida Spradlin '18, 321-674-8696, [mspradlin@fit.edu](mailto:mspradlin@fit.edu)

  
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“I look forward to building on our history, together, to create a new legacy and vision for Florida Tech—a legacy that, when we look back years from now, we can say that together, we began a new era for Florida Tech, one of sustained growth, vitality and impact.”

—John Nicklow, president

## Congratulations, Mr. President

On Jan. 26, Florida Tech celebrated the presidential investiture of John Nicklow, Ph.D., in the Charles and Ruth Clemente Center for Sports and Recreation. Hosted by former CNN space program correspondent John Zarrella, the event officially installed Nicklow as the university's sixth president and featured remarks from community and campus leaders.

Alongside the many physical attendees, more than 100 viewers tuned into the livestream. Everyone watched as the longtime engineer, educator and innovator was

bestowed the “The President’s Medal”—a higher education tradition since the Middle Ages that represents the three guiding values of the chief executive office: honor, commitment and service.

Upon his official installation, Nicklow addressed the enthusiastic spectators.

“My commitment to you is that I will work tirelessly to ensure we realize our new legacy and vision, together,” he says. “And I’m excited for the shared journey ahead of us, and I have confidence in our future together!”



John Zarrella, former CNN space program correspondent, served as master of ceremonies.



Streamer cannon celebration at the conclusion of the investiture ceremony.



FAMILIAR FACES:

## Gordon Patterson

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

“Florida Tech is a dynamic institution that is always in the process of ‘becoming.’ My fellow Panthers’ appetite for change, their desire to improve and passion for excellence makes each day exciting.”

—Gordon Patterson

In the heart of Florida Tech’s campus lies the Joy and Gordon Patterson Botanical Garden—a living testament to the enduring legacy of professor Gordon Patterson, a household name at the university. For over four decades, Patterson has been a cornerstone of the institution, through not only his dedicated teaching in humanities but also his profound influence on campus life and culture and his role as university historian. We spoke with Patterson about his eventful time at Florida Tech and his new book, *Missiles, Mischief, and Mayhem: The Secret History of Countdown College*.

### What is your role here, and how has it evolved over the years?

My 43 years at Florida Tech have been a journey of intellectual exploration. In 1981, I was recruited to help rethink the core undergrad curriculum while developing courses in the history of science and technology and environmental history. In the next decade, I worked to develop courses in Asian studies. Students can now meet their core requirements in the humanities by studying both Western and Eastern civilizations. Currently, I am working to develop courses in African American studies. My fascination with environment history led to my research on the history of mosquito control. Our species’ relentless battle against six-legged, blood-sucking pests has left a profound mark on the environment, shaping societies and landscapes for millennia.

### How have you seen the campus and students evolve throughout the years?

Beneath the surface of Florida Tech’s academic excellence lies a host of adventures, escapades and antics. I could not let the memory of these moments pass away. Thus, I wrote this book.

### What is your favorite Florida Tech “secret history” story?

I smile when I think of founder Jerry Keuper’s scheme to launch a quail hatchery on campus and market quail eggs. I hasten to add the stories of the “atomic toilet” and the mass campus streak still make my eyes roll. (Get the book for details!)

### What role does interacting with the campus community play in keeping your job fresh and exciting?

Florida Tech is a dynamic institution that is always in the process of “becoming.”

My fellow Panthers’ appetite for change, their desire to improve and passion for excellence makes each day exciting.

### What do you love about your job?

Giving a good lecture. Most of all, I like it when my students ask challenging questions.

### What makes Florida Tech a unique/great place to work?

The university’s “can-do” attitude.

### What are some of the memories at Florida Tech that stand out to you?

Standing in the Quad in 1986, when the space shuttle *Challenger* exploded; yelling myself hoarse watching the men’s soccer team win a national championship in 1988 and losing my voice again three years later when they won a second national championship in 1991; meeting with students on 9/11; contributing to establishing the Julius Montgomery Pioneer Award and the university’s annual MLK ceremony; teaching the sons and daughters whose parents were once my students; countless hours spent in the botanical garden (AKA: “The Jungle”); I could go on.

### What inspires you now at the university?

There are still nights when I have trouble going to sleep because I’m looking forward to what’s going to happen in class the next day.

### What do you see in the future for Florida Tech?

For 25 years, I served as the faculty advisor for the College Players. Their motto, “Limited to the Imagination, Bounded by Infinity,” resonates deeply with me, reflecting my vision for Florida Tech and the limitless potential that lies ahead. Go Panthers!



## A Trip to Paris

The campus community experienced a fusion of cuisine, culture and craftsmanship during February's Global Kitchen Series event: City of Love. The dining hall underwent a stunning Parisian transformation, including a wooden recreation of the iconic Eiffel Tower. Created with meticulous detail by mechanical engineering master's student **ZAC GROSS** '23 and his fellow L3Harris Student Design Center staff members in just 18 days, the tower was built utilizing the center's in-house computer numerical control (CNC) machine, 34 cans of spray paint, 995 LED lights and a lot of hands-on construction.



## Board of Trustees Welcomes Three New Members

In February, Florida Tech welcomed three new members to its board of trustees, bringing it to 15 active and five emeritus members.

“We are excited to welcome these three talented, passionate leaders to our board,” says President John Nicklow. “I know each of them cares deeply for Florida Tech, its students and broader university community, and the evolution and success of higher education in general. We are eager to work with them and all our dedicated board members as we begin to execute our strategic plan.”



### Rita Cheng

*President emerita, Northern Arizona University; former chancellor at Southern Illinois University*

Cheng became the 16th president of Northern Arizona University when she was hired in 2014, the latest achievement in an impactful career in higher education spanning four decades. As a first-generation and nontraditional college graduate, Cheng firmly believes in making higher education accessible and affordable for all students.



### Jill A. Eanes '91, '93 MBA

*Captain, United Airlines*

Eanes, who received the College of Aeronautics Skurla Outstanding Alumni Award in 2023 and has served on the college's advisory board since 2018, has had a distinguished, three-decade career in aviation. She is a champion for diversity throughout United and the aviation industry and has established an endowed scholarship for LGBTQ+ Florida Tech students, focusing on those studying aviation and aeronautics.



### William J. Guyan

*Senior vice president and general manager, Leonardo DRS*

Guyan has been with Leonardo DRS since 2002, entering his current role as senior vice president and general manager of the land electronics business unit in 2019. A former U.S. Army officer, he has served as a member of the Florida Tech President's Circle since 2019.



## You Matter

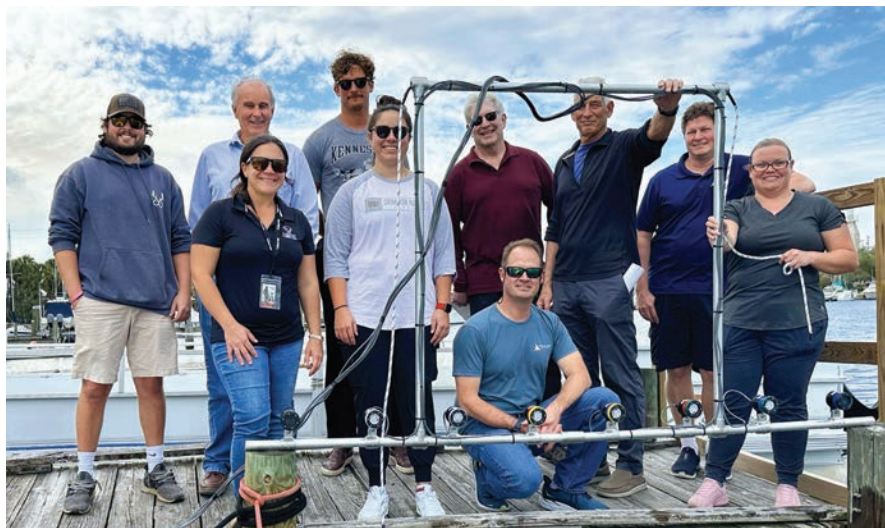
Florida Tech's Parent Leadership Council (PLC) is aiming to save lives from suicide through its "You Matter" initiative.

As part of the initiative, the PLC raised money to place three benches, engraved with the "You Matter" message and the 988 Suicide and Crisis Lifeline, on campus.

"The bench isn't going to save their life, but the resources may—those conversations of people understanding that they truly, truly matter," said PLC member Deborah Carson, who brought "You Matter" to campus.



## Antifouling Research Tested in Navy-Funded Project



Florida Tech researchers and alumni during the phase one testing operation at Mertens Marine Center.

A group of researchers with Florida Tech ties is trying to develop a new way to battle barnacles.

### KELLI HUNSUCKER

'07 M.S., '13 Ph.D., assistant professor of oceanography at Florida Tech, has spent years researching how to combat biofouling, the growth of marine life on submerged surfaces, with ultraviolet-C (UVC) light.

Now, the Office of Naval Research (ONR) is funding a project using her findings to help develop a clear-coat protection system for use in the marine environment. She's joined by two companies led by alumni: Arctic Rays in Satellite Beach, Florida, and Maryland-based Severn Marine Technologies.

When biofouling happens on the hull of a ship, it can affect the ship's ability to cut smoothly through the water, leading to

greater greenhouse gas emissions. Sometimes, it can also contribute to the transfer of invasive species.

UVC light is an environmentally friendly antifouling method that, Hunsucker's research shows, might even beat the alternatives.

The project tests Hunsucker's findings on a set of underwater, UVC-emitting LED housing units, deployed from the Mertens Marine Center. Arctic Rays designed the housing units, and Severn Marine Technologies designed the clear coating for the units.

"This really is a solid collaboration," said **HANK LOBE** '95 M.S., president of Severn Marine Technologies.

The researchers evaluated different types and intensities of LEDs to see if the clear coating and

UVC light could work together.

"The array of lights offers a combination of two different UVC wavelengths, two types of optical distributions and power levels, as well as coated and uncoated windows from Severn Marine Technologies," said **DIRK FIEBERG** '01, '03 M.S., general manager of Arctic Rays.

On testing day, setup and immersion went smoothly. Working with a crew of Florida Tech alumni didn't hurt.

"Working in the ocean environment is harsh, and there are many small things that could go wrong during a deployment," Hunsucker said. "But working with a seasoned team like this, everything was thought about beforehand."

The second phase of testing is being finalized.

## Nelson Health Sciences Research Program Awards First Grants

Four research projects touching on some of society's most monumental challenges, from cancer to forever chemicals, are the inaugural recipients of funding under the Gordon L. Nelson Health Sciences Research Innovation Program, a grant program developed last year by chemistry professor and university benefactor Gordon Nelson.

In late fall 2023, four winners were chosen from 10 proposals. They were selected by a committee composed of three faculty members and an alumnus, who evaluated the submissions for innovation and method; future external funding potential; significance and potential for publication; and qualifications.

The funded projects are:

### MAGNETICALLY GUIDED NANOPARTICLES BEARING PHOTO-CLEAVABLE ANTITUMOR AGENTS FOR PRECISE CANCER CELL TARGETING

*Principal Investigator:* Nasri Nesnas, chemistry and chemical engineering

*Co-PIs:* Chris Bashur, Eric Guisbert and Karen Kim Guisbert

*Funding:* \$17,000

### THE EFFECTIVE DESIGN OF NITI CELLULAR STRUCTURES FOR MEDICAL APPLICATIONS WITH TAILORED MATERIAL MICROSTRUCTURE AND CORRESPONDING PROPERTIES

*Principal Investigator:* Sayed Ehsan Saghalian, mechanical and civil engineering

*Funding:* \$13,000

### BLINK-RELATED OSCILLATIONS: A NEW APPROACH FOR MONITORING BRAIN HEALTH IN AGING

*Principal Investigator:* Careesa Liu, biomedical engineering (*Learn more on page 30*)

*Funding:* \$10,000

### REMOVING FOREVER CHEMICALS FROM DRINKING WATER USING HIGHLY POROUS METAL-ORGANIC FRAMEWORK (MOFs) WITH MODULATED LOCAL STRUCTURES

*Principal Investigator:* Xiang He, mechanical and civil engineering

*Funding:* \$10,000

The yearlong projects commenced Jan. 1.

"We are excited to inaugurate Gordon's program with these four worthy projects," said John Harris, College of Engineering and Science dean. "His generous gift will provide a tremendous, ongoing boost for health sciences research at Florida Tech."

# From Cairo To Captain

## Farah Shaaban's journey across the globe to Florida Tech

By Jerry Durney

No Panther better embodies Florida Tech Athletics' mission to be "scholars, champions and leaders" than women's basketball guard **FARAH SHAABAN** '24.

Shaaban's journey began in Cairo, a place not generally known for women's basketball. As it turns out, it was a bit of family heritage in the sport that may have ultimately pushed her toward the hardwood.

"My grandma played basketball; my parents weren't really into it, but she was," Shaaban says. "I started when I was about 5 and found my calling. I just enjoyed it."

Shaaban came to America, initially spending two years at St. Louis Community College. After that, an early-morning call from Panthers women's basketball head coach John Reynolds was all she needed to decide that she wanted to be at Florida Tech.

"Coach Reynolds called me at 3 in the morning my time—I was still awake," Shaaban recalls. "I thought, 'If I'm up at 3, and he gives me a call, this has to be a sign.'"

While Reynolds and the program had indeed sold Shaaban on Florida Tech, she also had an eye on life after basketball. Another childhood passion of hers was aeronautics.

"I love airplanes," she says. "I love designing them and would make small models all the time when I was young."

She transitioned to Florida Tech following the advice of fellow Egyptian scholar-athletes.

"We have Division I athletes that go from Egypt, come to the U.S. and get this great opportunity. They talk about how demanding it is and how elite it is compared to what we do back home," Shaaban says. "I was very intrigued, and

the U.S. is also well known for aerospace. So, I thought Tech could be a great fit for me."

Switching schools while being several thousands of miles away from home was a lot for Shaaban, especially as a walk-on during her first two seasons with the team.

"There were definitely times where I was like, 'What am I even doing?' And I had to adjust very quickly," Shaaban says. "But I had a great team. When I came here, they were all very supportive, and I was able to find myself within the team."

In her spare time, Shaaban worked with the athletics department's gameday operations, in Florida Tech's information technology (IT) office and as a resident assistant. She saw these as opportunities to gradually prepare for the workforce and enhance her leadership capabilities.

"When I came here first semester, I just went to class and played basketball; that was it, really," she says. "After that, I thought to myself, 'I have time for one more thing,' and that's when I picked up IT. That allowed me to grow in terms of understanding software better, as well as helping people around campus. It also improved my communication skills drastically between my first semester and my second semester because I just had to communicate all the time with people."

Shaaban was a champion defender on the court, often winning battles for loose balls, even if it meant putting her body on the line.

"She's as unselfish as possible," Reynolds says. "If we're in practice, and we've got a couple of players out, she'll play in the paint. If we need somebody to handle the ball, she'll handle the ball. If you need somebody to guard the best

guard on the other team, she will be that player that comes in and gets after it."

Ahead of the 2023-24 season, Shaaban was named a team captain.

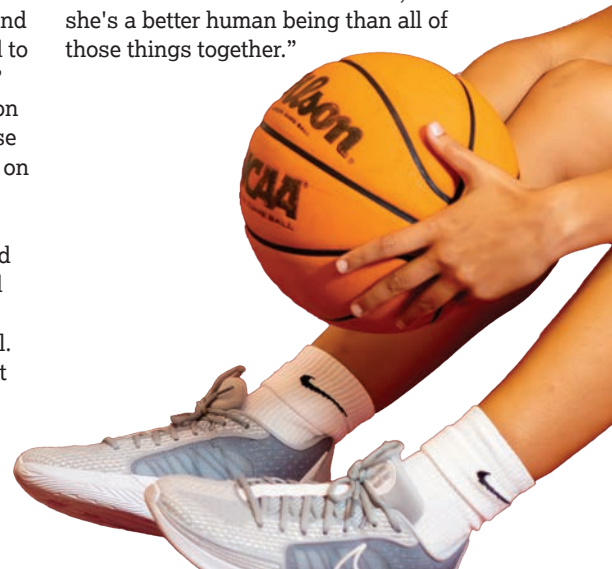
"I just want to lead by example," she says. "If they see me doing what they need to be doing for us to win, then that's a win for me. Not just for the team, but I've helped someone reach their goal, as well."

After graduating at spring commencement, Shaaban has remained in Melbourne. But now, the girl who grew up putting together Lego airplanes is in the real world of aviation, working for Piper Aircraft Inc., where she had previously interned.

"It's going well; I'm enjoying what I'm doing. I'm designing, which I've always wanted to do," she says. "It's a learning experience. I learn something new every day."

What stands out most about Shaaban, Reynolds says, is that she is more than the sum of what she does.

"I think that the most important part about her is that all things she does are things that go unnoticed unless you're with that kind of kid every day," he says. "All those things are complementary to what we've talked about with her, and she's a better human being than all of those things together."





# FLORIDA TECH

## PANTHERS



### AT A GLANCE

## Farah Shaaban

**SPORT:** Women's basketball

**POSITION:** Guard, team captain

**MAJOR:** Aerospace engineering

**HOMETOWN:** Cairo, Egypt

**CAREER STATS:** Played in 54 games for 321 minutes; Recorded 46 points, 34 rebounds, 23 assists, seven steals and seven blocks

**NAMED TO:** Florida Tech Athletic Director's Honor Roll and Sunshine State Conference Commissioner's Honor Roll

**FUN FACT:** In Egypt, Shaaban was a national champion in taekwondo.



## The New Faces of Florida Tech Athletics

Florida Tech Athletics has proudly revealed its revamped logo and modernized Pete the Panther mascot, not just a visual change but a leap forward.

"Our new Florida Tech Panthers logo is a symbol of modernization, strength and the innovation of our athletic program," said athletics director Jamie Joss. "With its fierce design and 'Tech-Built' essence, it embodies our commitment to our core values."

The new designs were developed through a coordinated effort between the university's athletics, marketing and creative services teams and sports branding agencies Mongoose Sports (logo) and Street Characters Inc. (mascot). The process was driven by input from students, alumni, staff and faculty, which was gathered through a brand survey that went out in spring 2023.

Survey respondents indicated a desire for the Panther logo to evolve, with more snarl than smile, a sense of forward motion and a bold, stylized wordmark. The quintessential black color, a nod to the university's heritage, remains steadfast, while the panther's gaze exudes determination and vigor, symbolizing Florida Tech's unwavering commitment to excellence.

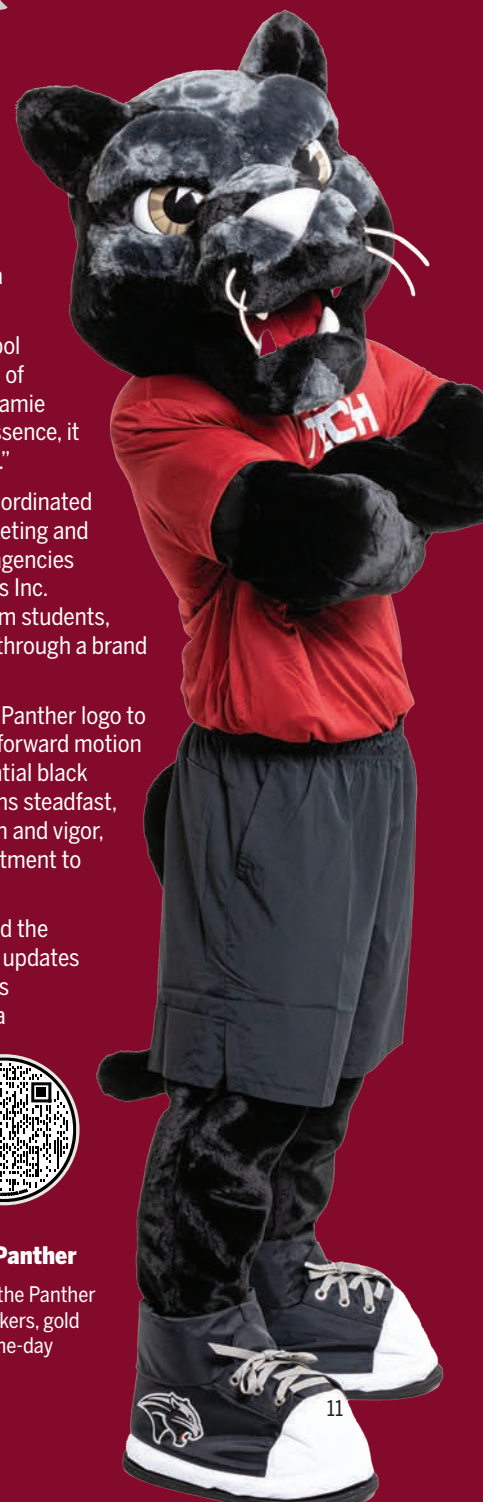
As part of the redesign, Florida Tech has retired the usage of "FT." Additionally, athletics has made updates to the primary athletics' social media accounts (@FloridaTech\_Athletics) and the social media accounts for all 15 varsity programs.

### The Evolution of the Florida Tech Athletics Logo



### Meet Your New Pete the Panther

Florida Tech's remodeled Pete the Panther features custom-branded sneakers, gold irises and a ferociously fun game-day countenance.





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**MEREDITH CARROLL**

**'03 M.S.** is a professor of aviation human factors and founder and director of the Advancing Technology-interaction and Learning in Aviation Systems (ATLAS) Lab at Florida Tech. She has over 20 years of experience studying human/team performance and training in complex systems. Her current research focuses on human-autonomy teaming, interface design for emerging aviation systems and adaptive training.



**MEREDITH CARROLL**

# Are Autonomous Systems Really “Unmanned”?

## *The Unique Contribution of Humans to Human-Autonomy Teams*

As we are seeing a dramatic increase in automation, many terms like “unmanned” or “autonomous” may excite concerns that human beings are soon to be replaced by robotic counterparts who are smarter, stronger and faster.

But as a human factors researcher who studies autonomy, I have learned that nothing is really “unmanned.” Human factors is a discipline that studies the interface between a human and a machine, ensuring that the interface provides the human operator with the necessary information to understand what is going on but also allows the human to provide input to the machine to ensure the desired goal is achieved. This interface can range from something as simple as your smartphone display to something as intricate as a ground control station that allows a human operator to monitor and control multiple autonomous drones or air taxis.

At the heart of these autonomous systems are human monitors, designers and analysts. Although the human-machine interface may not be at the forefront of operations, “unmanned” and “autonomous” systems must be designed by humans to ensure that human operators, users and stakeholders can effectively interact with, or alongside, these machines in a safe and effective manner.

In Florida Tech’s Advancing Technology-interaction and Learning in Aviation Systems (ATLAS) Lab, we have been funded by agencies, such as the Air Force Office of Scientific Research, to study human-autonomy teaming.

“

Research in this area is not focused on how an autonomous system can replace a performer but on how we can develop autonomous teammates that can bolster human capabilities while freeing up human resources to do what they do best: problem-solve, exercise judgment and improvise.

”

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Meredith Carroll

Research in this area is not focused on how an autonomous system can replace a performer but on how we can develop autonomous teammates that can bolster human capabilities while freeing up human resources to do what they do best: problem-solve, exercise judgment and improvise.

Our autonomous counterparts are superior at calculating the best route and flying or driving that route under normal conditions, but what they aren’t good at is dealing with uncertainty or improvising when they encounter something novel for which they were not designed.

Many people hear the term artificial intelligence (AI) and equate it with some sort of magic. But the truth is that AI is nothing more than a set of mathematical models trained on limited datasets, and although they can learn and adapt, they can’t improvise, make ethical judgments or inductively reason.

This is why we have self-driving cars that can complete complex obstacle courses but, on rare occasions, drive directly into the back end of a bus stopped directly in front of them. The car worked as designed; the problem was that the car encountered a situation for which it wasn’t trained.

So, the burning question is not, “How do we prevent machines from replacing humans?” The more pertinent question is, “How do we design new autonomous technology such that it leverages the incredibly unique capabilities that we, as human operators, have in order to make more effective human-machine teams?”

This is a question we, at the ATLAS Lab, are working diligently to help answer.

# Machine Learning to Help Digitize Ancient Texts from Indus Civilization

The Indus Valley civilization is considered one of the three earliest civilizations in world history, along with Mesopotamia and Egypt. Bigger geographically than those two as it unfolded across what is now Pakistan and India starting in 3300 BCE, the Indus civilization boasted uniform weights and measures, skilled artisans, a multifaceted system of trade and commerce and upward of 500 symbols and signs for communicating.

But one question has vexed scholars for decades and hindered attempts to learn more about this civilization: Were those characters a language or more akin to pictograms? Even as some experts begin to translate the right-to-left script found in Indus inscriptions, there is little agreement.

“That’s a controversy, which is not yet settled,” said Debasis Mitra, a Florida Tech professor of computer science who is now connected to this quest thanks to a novel grant he was awarded from the National Endowment for the Humanities: “Ancient Script Digitization and Archival (ASDA) of Indus Valley Artifacts using Deep Learning.”

Graduate student assistant **DEVA ATTURU** '24 M.S., who defended his master’s thesis in April, is assisting Mitra with conducting the grant-funded research. In March, he and Mitra virtually attended the South Asian Archaeology Conference 2024 from the University of Chicago, where Atturu presented their work.

The writings they are studying may be a series of symbols, the equivalent of dollar signs and business transaction images, or those symbols may be graphemes, individual letters or groups of letters that represent speech sounds.

“Both sides have very strong arguments,” Mitra said.

He is not looking to solve the argument but to empower those who will by

developing a machine learning algorithm for identifying and digitizing the Indus civilization’s ancient script. There is a paucity of digitized data that Mitra is hoping to address.

The process uses an automated script recognition (ASR) system to extract coded sequences of graphemes from a dataset of more than 1,000 photographs of Indus seals. Using two-staged artificial neural networks, the ASR has achieved 88% success in detecting graphemes.

Still, the process has been challenging. Often, machine learning is empowered by inputting huge amounts of data to, basically, train the system. In this case, however, there is not much data to enter. And what data there is can sometimes be “noisy” or distorted.

“I work on medical imaging, and some of the challenges are similar,” Mitra said.

Mitra applies different machine learning elements to the project to try to generate new data or see if another approach may work better. He also finds himself at conferences not usually on the schedule for computer scientists, like last year’s Annual Conference of South Asia, hosted by the University of Wisconsin-Milwaukee, where he presented on this machine learning project.

Attending these keeps him in contact with archaeologists who can feed him more data.

“I go to these conferences and try to talk to them,” he said.

Seal discovered during the excavation of the Mohenjo-daro archaeological site in the Indus Valley.



He also enlists the help of students at the Indian Statistical Institute in his native India. Together, they are making progress. They can digitize some motifs and graphemes and, depending on the amount of data, even create a script. Doing that and getting it into a database is the goal of the initial grant funding.

The next phase? Create a system that allows archaeologists in the field to snap

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The next phase? Create a system that allows archaeologists in the field to snap a smartphone photo of text or symbols and have it routed into the database for digitization.

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a smartphone photo of text or symbols and have it routed into the database for digitization.

That these efforts are designed to help illuminate and better understand one of the great civilizations in the history of his country is added motivation for Mitra.

“It’s part of my history, so there is extra motivation for that. And, obviously, I see Indian students are very interested because of the same reason,” he said. “But one of the first breakthroughs was by a couple of American students who had strong interest in India, and some of them said they visited India afterward.”



## Research Spurs \$10 Million FDOT Test Road, With More to Follow

Florida Tech research into ways to reuse asphalt byproducts from road repairs will be put to the test, literally, in a \$10 million project from the Florida Department of Transportation (FDOT). The project could end up boosting the sustainability of this critical infrastructure and saving the state millions of dollars in future roadbuilding costs.

For more than a decade, civil engineering professor **ALBERT BLEAKLEY** '12 Ph.D. has conducted research, including some funded by FDOT, regarding pavement materials recycling. The research is necessary because the process of repairing asphalt surfaces by milling several inches off the top generates piles of what is known as reclaimed asphalt pavement (RAP).

Recycling or reblending 100% of this material is not always possible, so excess RAP is stockpiled at asphalt plants. Paving companies have been trying to reuse RAP as roadway base materials for decades, but RAP's asphalt aggregate mix causes the pavement to rut excessively if used directly.

Bleakley's research may highlight a solution.

He has determined that blending the millings with specific base materials or adding several special chemicals in relatively small percentages can significantly reduce and eliminate pavement rutting while requiring smaller amounts of natural resources, such as lime rock (crushed limestone).

Now, FDOT wants to see this theory in action. It plans to spend \$10 million to

construct a multisection road test on State Road 301 north of Stark, Florida, to evaluate millings blended with lime rock base. One section will have a 50-50 blend of RAP and lime rock, while a second section will have 25% RAP and 75% lime rock. There will also be sections of 100% lime rock and 100% RAP for comparisons to a known base.

The test road, which will include seven 1,000-foot test sections, will be evaluated continuously over five years. Then, a second \$10 million test will evaluate RAP blended with cement and asphalt emulsions.

"If it works, this will allow RAP to be used in a way that doesn't diminish pavement performance and utilizes stockpiles of RAP currently not being used, especially in South Florida," said David

Horhota, state materials geotechnical engineer for FDOT. "It will also extend the life of our diminishing natural resource used for our roadways, such as lime rock, which has become increasingly more difficult to permit and, therefore, mine, and it will extend the life of Florida's existing sources."

Bleakley said the impact could go beyond the Sunshine State.

"The U.S. construction industry produces approximately 45 million tons of RAP every year as a byproduct of road resurfacing projects, so there is a huge economic and environmental impact potential in using this material in place of freshly mined lime rock."

### Up, Up and Away

On March 20, meteorology students and faculty on Crawford Green released a weather balloon towing a battery-powered instrument, called a radiosonde, that gathers and transmits data on temperature, humidity, wind speed and more. The balloon, made of 100% biodegradable natural latex and designed to "shatter" into small pieces for easier biodegradation should it burst, could travel to an altitude of up to 30 kilometers, or about 18 miles, before bursting.

Sponsored by the American Meteorological Society Florida Tech chapter, the event aimed to teach students both the process and value of setting up and launching weather balloons.



**Prime is a quantity.**

Unique, a product unachievable by any two other numbers. 2, 3, 5 ...

**Prime is a quality.**

Excellent, of the highest caliber.  
*Outstanding, Choice, Top-Notch ...*

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

# PRIME EXAMPLES *of* LEGACY

Legacy can take many forms. Belongings, character, lessons, reputation—legacy is the long-lasting impact of a thing, an event, a life. For many, the desire to cement our legacy gives purpose. We build it; we leave it behind; and we hope that others will preserve and perpetuate it, so that the very thing that defined us in life will aptly outlive us.

At Florida Tech, we honor, uphold and celebrate the lasting impacts of the people, endeavors, accomplishments and even failures that have shaped us, as we relentlessly pursue our own enduring legacy.

**Here are a few prime examples.**

## 3

## NEW LEADERS MAKING THEIR MARKS



### 1 John Kiss, Ph.D.

*Provost and Senior Vice President  
for Academic Affairs*

Kiss, whose research focuses on the gravitational and space biology of plants, comes to Florida Tech from the University of North Carolina Greensboro, where he served as dean of the College of Arts and Sciences.



### 2 Stephen Yasko

*WFIT General Manager*

A New Jersey native who has served as WFIT's program manager since October 2022, Yasko is a radio veteran with experience at major national operations, such as NPR and Pacifica Radio Foundation.



### 3 Danielle Sirekis

*Director of Esports*

In her last role as esports head coach at Lawrence Technological University, Sirekis, a two-time finalist for the National Association of Collegiate Esports director of the year, built the varsity program from the ground up, focusing on creating an inclusive community space with high-level competition.



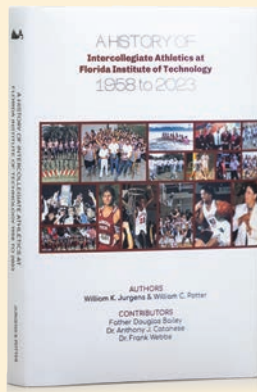


## 2 HISTORY BOOKS



### MISSILES, MISCHIEF, AND MAYHEM: THE SECRET HISTORY OF COUNTDOWN COLLEGE 1958-2023

Complete with tales of student streakers, a university quail farm and leprous armadillos, *Missiles, Mischief, and Mayhem* chronicles some of the adventures, escapades and antics that shaped the “secret history” of one of America’s leading STEM universities as only Florida Tech historian and beloved professor of history Gordon Patterson can. Catch up with Patterson on page 6.



### A HISTORY OF INTERCOLLEGIATE ATHLETICS AT FLORIDA INSTITUTE OF TECHNOLOGY 1958-2023

This book details the evolution of sports at Florida Tech, from a fledgling program started shortly after the university’s founding to a competitive member of the NCAA Division II Sunshine State Conference. Written by Bill Jurgens, who served as Florida Tech’s director of athletics for 44 years, and trustee emeritus Bill Potter, who served on Florida Tech’s board for more than 40 years, the book recognizes “the individuals who have been responsible for the success of the program while also illustrating how an intercollegiate athletic program can succeed and remain consistent with the core values of the university.”

## 5 CELEBRATIONS OF SIGNIFICANCE



From left: Gordon Patterson, Bill Gary and John Nicklow at the 2024 MLK Commemoration.

### 1 WOMEN INSPIRING SUCCESS AND EXCELLENCE (WISE) AWARDS

In recognition of Women’s History Month in March, the Florida Tech Alumni Association celebrated four women who champion the spirit of promoting women’s participation and development within the campus community at its annual WISE Awards ceremony.

- Meredith Carroll '03 M.S.  
Faculty Excellence Award
- Dana Washington  
Joan Bixby Staff Impact Award
- Isabela Perdomo  
Student Catalyst Award
- Christie Lynes '18 MPA  
Alumna Legacy Award

### 2 DR. MARTIN LUTHER KING JR. COMMEMORATION

In January, Florida Tech celebrated the life and achievements of the civil rights icon at its annual MLK Commemoration. The event featured a live rendition of King’s “I Have a Dream” speech, a keynote address from the Rev. Leo Stoney from The MaxOut Church in Melbourne and two award presentations:

- Bill Gary, Dr. Julius Montgomery  
Pioneer Award
- Gordon Patterson, Harvey L. Riley  
Bridge Builder Award

### 3 AN EVENING OF HOPE

In March, more than 260 guests attended the 16th Annual An Evening of Hope event, benefitting The Scott Center for Autism Treatment at Florida Tech. Themed “Soaring to New Heights, Oh the Places We Will Go!” the event was hosted at local event venue Sprengergarten, raising more than \$225,000 this year for The Scott Center’s threefold mission of service, training and research, including the WISH scholarship, student internships and future programming.

### 4 LEGACY OF 37

Formerly Chopper Dropper, the Legacy of 37 Reception is Florida Tech Athletics’ signature fundraising event. Rebranded this year to honor the legendary 37-cent donation that solidified founding president Jerome P. Keuper’s resolve to launch the institution that would become Florida Tech, the reception still featured its popular raffle-by-ball-drop contest with a \$37,000 cash grand prize, among other exciting prizes.

### 5 HOMECOMING 2024

In April, Homecoming 2024 featured a full schedule of student, family, faculty, staff, alumni and community events, including a 2-mile run/walk on campus, the annual Alumni Awards Gala, Casino Night and a HOCO Carnival. Plain White T’s headlined the weekend’s signature Homecoming Fest, presented by the Florida Tech Alumni Association and the Student Government Association, at Nance Park.



Forward Together, Boundless Potential:

# **The Florida Tech Strategic Plan**

By Karly Horn





## Florida Tech is at an inflection point.

Under the visionary new leadership of President John Nicklow, we are poised more than ever for greatness. But achieving the lofty goals to which we aspire requires a plan. So, together with our community, we made one.

Forward Together, Boundless Potential is Florida Tech's new strategic plan, a dynamic, living document that outlines a framework for decision-making based on the university's future goals and the steps necessary to achieve them.

"The new strategic plan sets the course of our shared future by prioritizing our objectives and building on Florida Tech's distinctive identity," Nicklow says. "It is thoughtful; it is ambitious—it both honors our past and focuses our eyes firmly on the future."

In July 2023, through electronic surveys, one-on-one interviews, a diverse 41-person steering committee and more, we captured feedback from **five peer institutions, 716 students, 487 faculty and staff members, 14 board members and four of Florida Tech's top employers**, rounding out to about 1,200 voices.

This collaborative, transparent process generated a whole lot of valuable input, resulting in a comprehensive strategic plan with roughly 20 years' worth of goals, tactics, key performance indicators and more—a blueprint for realizing all that we know Florida Tech can be.

Suffice it to say, there's a lot to unpack. Here, we've broken it down to the basics—anchored by the plan's four key pillars of success:



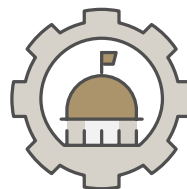
### People of Excellence



### Programs Driven by Innovation



### Transformative Partnerships



### Optimized Learning and Social Environments

Read on for some insight into just a few of the ways we've already begun to move forward together with boundless potential.



*continued on page 20*



## People of Excellence.

### What it says:

“Florida Tech will empower and champion our students, faculty and staff, propelling

them to attain unparalleled success at their highest potential.”

### What it means:

Without our people, there is no Florida Tech. Attracting and retaining the sharpest minds—including clever, ambitious students, illustrious faculty and motivated staff—is and must be at the forefront of everything we do. Engaging, supporting

and preparing them for success through the university’s processes, resources and overall collaborative environment will develop and maintain a diverse, thriving community devoted to advancing the university and its mission.

### Priorities in action:

In fall 2023, Florida Tech welcomed 1,044 freshmen and transfers from 52 countries and 45 U.S. states. This was the university’s first-ever incoming class of over 1,000 students, and it is up about 8% from fall 2022 and 14% from fall 2021.

To continue this trend, the university seeks to both remove barriers that impede access to education and implement additional measures to mentor and engage new students, ensuring their smooth and successful transition to college life.

To assist with the former, Florida Tech recently launched the Brevard Boundless Opportunity Grant program. Starting in fall 2024, high-achieving Brevard County students who meet all eligibility requirements and enroll full time at Florida Tech on the Melbourne campus will receive additional funds to cover their tuition and fees.

“We hope that this grant opens doors for those really bright local students who might otherwise not be able to afford a Florida Tech education,” says Brian Ehrlich, Florida Tech vice president for enrollment management. “We want to be the school in Brevard County, so we’re continuing to build that reputation by fostering a strong sense of community.”

Because once we recruit the best students, we must support them through graduation, Florida Tech has taken strides in improving our student outreach programs over the last year. In fall 2023, about 50 students participated in the pilot Panther Peer Mentor program, which connected incoming students with upperclassmen who helped them integrate into the community. The program was such a success, it is expanding to include more students and will begin

earlier in admitted students’ journeys this fall.

“Especially coming out of COVID-19, there may be more of a need today for our incoming students to have that support,” says David McMahan, vice president for student affairs.

“So, helping them make an easy connection with a friendly face who they have once they get to campus is a big part of the objective. And providing them that foundation, that stability to fall back on, is key for us.”

We’re also harnessing technology to connect with students as they adjust to college life. Panthera—our new student-named, AI-enabled chatbot representative that reaches out to students at strategic times, such as a few weeks into the semester when homesickness might set in or the stressful couple weeks before exams—and a new Early Alert Network—a system that pulls GPAs, test scores, class attendance and more data into an algorithm to identify high-risk students—enable the university to be more efficient and effective in connecting with students how and when they need.

“When we have a record enrollment year, people always ask me ‘Why?’” Ehrlich says. “There’s no one answer. It’s not just the enrollment, admissions, financial aid or marketing teams, but every person who comes together to help build our reputation—our ‘People of Excellence.’”



McMahan

### PANTHERA BY THE NUMBERS

Launched in December 2023 and powered by EdSights, Panthera is our new AI student connection persona that periodically checks in with students about their Florida Tech experience, provides them resources for any struggles they may face, answers their questions across a broad range of topics specific to the university and collects their feedback and behavioral data to help us make more informed decisions related to student success and retention going forward.

Already, students have actively engaged with this research-backed retention platform about all kinds of topics, from social engagement, wellness and feelings of belonging to financial distress and academic engagement.

# 93%

of students texted remain opted in to receive Panthera’s messages

# 61%

of students are actively engaged and texting Panthera





# Programs Driven by Innovation.

## What it says:

“Florida Tech will advance the knowledge and research capabilities in all disciplines by providing an experienced, professional, solution-oriented talent pipeline determined to succeed.”

## What it means:

Florida Tech aims to be the “university of choice” for mentoring and training the talents and workforce of the future. That means offering professionally accredited, technology-driven curricula fortified by hands-on experiences in and out of the classroom. Enhanced research—accomplished in part by better supporting faculty as they identify research opportunities and prepare proposals and budgets through our reimagined Office of Sponsored Research—is a driving force.

## Priorities in action:

While Florida Tech has long contributed to research related to cyberdefense, the intelligence community and signal processing, the university is establishing the Florida Tech Research Institute (FTRI) to substantially enhance its capacity to conduct applied research from the Department of Defense and the defense industrial base sector.

FTRI, which will be housed in facilities separate from Florida Tech’s operations that meet federal requirements for handling controlled information (physical access, network security and other safeguards), will be an independent, nonprofit entity fully owned by the university and will feature its own board of directors, its own networks and far more stringent security than the rest of the university.

“It allows our qualified and talented faculty and their students to pursue opportunities that directly help our government and its national security needs—from global sensing and national defense to protecting our society, infrastructures, operations and personnel,” says senior associate provost for research Hamid Rassoul.

Keeping FTRI and its research portfolio discrete also preserves the university’s overarching mission to prepare students from around the world for success and excellence.

“This initiative will enable our faculty and research staff to better

serve and contribute to sensitive research activities that are critical for our nation and our defense industry base,” says Marco Carvalho, executive director of the L3Harris Institute for Assured Information, professor and L3Harris Chair for Assured Information, who will serve as FTRI’s executive director. “And it will help us provide new, unique education and training experiences to our students, supporting the university mission to create an open forum for discussions, scholarship and academic contributions.”

FTRI will primarily focus on five strategic areas based on Florida Tech’s research strengths and the government’s current needs: cybersecurity and cyberresiliency; space and applied electromagnetics; ocean/marine engineering and science; biomedical engineering and science; and social sciences.

“FTRI is an exciting initiative that will help us continue to build our research infrastructure at Florida Tech—thereby allowing us to continue to expand externally funded research so that we can achieve excellence in this important area,” says John Kiss, provost and senior vice president for academic affairs.



Kiss

## Current Research

- + Florida Tech Research Institute
- + Office of Sponsored Research

## Accelerated Research Expenditures

Our total research expenditures university-wide two years ago were \$14.9 million. Last year, they rose to \$15.7 million. While this growth is promising, compared to the between \$52 million and \$180 million achieved by some of our peers, it’s clear there is great potential to improve. By expanding and diversifying externally funded research (through efforts like FTRI), we enable all our students to conduct impactful and innovative research while positioning ourselves for **R1 consideration by 2040.**



## Transformative Partnerships.

### What it says:

“Florida Tech will strengthen and expand university partnerships to provide more comprehensive experiences for Florida Tech students, faculty and staff, which will better

prepare them in addressing economic, cultural and societal needs of local, state, national and international importance.”

### What it means:

Florida Tech was founded on relationships, starting with those developed by founding president Jerome P. Keuper as he connected early missilemen at the Cape with the people and resources necessary to expand their educations and establish our first degree curricula. While the university has evolved in ways even Keuper could not

have dreamed of, being a present, active, vital member of the Space Coast community remains at our core. By both seeking valuable community partners and serving as one, we will enhance student education, boost the local—and global—workforce and economy and, ultimately, advance the mission of the university.

### Priorities in action:

As Florida’s STEM University,<sup>™</sup> Florida Tech attracts some of the best and brightest up-and-comers in science and engineering to the Space Coast, where we cultivate their minds and connect them with local industry leaders eager to harness their cutting-edge knowledge. This “talent pipeline” is not new, and it is one of several contributing factors that Florida Tech has commissioned the Regional Economic Consulting Group to evaluate in an economic impact survey.

How many jobs do we create? What types of graduates do we produce? What are our local expenditures, and how are they multiplied throughout the area? Essentially, how are the educational opportunities we’ve been offering for over 65 years enriching the Space Coast and the entire Central Florida region? These are the types of questions the survey seeks to answer.

“Hopefully, it is easy to understand that an education is valuable, but the economic impact survey will quantify our value in a new way,” says Wes Sumner, Florida Tech’s vice president for external affairs. “It will provide actual economic data that will show what the university brings to the table in a dollars-and-cents kind of way.”

Even ahead of the results, we’re always seeking to enhance old and establish new partnerships. One example is customized education. For years, Florida Tech has partnered with Northrop Grumman Corp. (NGC) to make it easier for NGC employees to earn master’s degrees relevant to their careers and aspirations. The LevelUp program

originally offered 11-week classes solely in person on NGC’s campus. After collaborating with a host of NGC employees and management, a revitalized LevelUp program launched with a cohort of about 50 students in January.

“It’s really designed with the input of our corporate partners—a model that works for their employees but that also works for the university,” says Ehrlich, who helped spearhead the program’s restructuring.

The new hybrid learning model features eight-week classes that bring students to Florida Tech’s campus one evening a week, with summers off, enabling students to graduate with a master’s degree in engineering management, systems engineering or business administration (MBA) in just 2 ½ years.

“Feedback has been great—people are engaged; they like coming to campus; they like that the online component enables them to maximize that eight-week timeframe,” Ehrlich says. “Now that we’ve tested the new model, the idea is to build additional high-demand, career-supporting programs for working professionals and then recruit from local companies. It aligns our programs with the local companies that need the expertise.”



Sumner

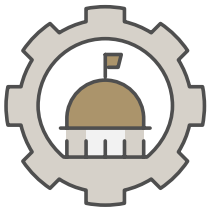
### CAREER SERVICES

Florida Tech’s Career Services office is often the liaison connecting ambitious students with local professionals—a conduit for the talent pipeline. Professionals from Northrop Grumman Corp., L3Harris Technologies Inc., Lockheed Martin, Blue Origin, NASA and so many more work with Career Services to:

- » Hire students and recent graduates for internships or full-time employment
- » Offer workshops on career-related topics
- » Host information sessions, Tech Talks and networking events for students on campus
- » Assist with résumé reviews
- » Mentor and sponsor senior design projects

Already robust, Career Services continues to evolve and improve in line with the new strategic plan. The office is transitioning to a more customized work management system that will include a job-search database, a comprehensive experiential education tracking system and a personalized website. The office is also implementing an online Career Readiness course to help students learn and recognize soft skills and career competencies.





# Optimized Learning & Social Environments.

## What it says:

"We will serve as a leading educational and research-focused institution who provides an enhanced campus life and collaborative culture for the university community and beyond."

## What it means:

As the university—student enrollment, number of faculty members, amount and breadth of research, academic programs and student activities—grows, so must its physical spaces. From classrooms and laboratories to equipment and technology to housing and community gathering spaces, we will evaluate, renovate, modify, build and enhance campus spaces to provide the best possible environments and, subsequently, experiences to students, faculty, staff, alumni, community partners and visitors.

## Priorities in action:

Enhancing campus facilities and equipment strategically and with intention requires a plan within the plan. To develop what is called a "master plan," Florida Tech recently enlisted the services of Credo, a higher education consulting firm who will assess all the university's physical spaces and determine what needs renovation and enhancement.

During the 10- to 12-month process, Credo will evaluate our current campus utilization—What percent of campus is used for research and teaching? Athletics? Student life? Housing? Etc.—compare it with benchmarks in academia and combine it with university goals and feedback from focus groups conducted with community members, alumni, students, faculty, staff and more. Once it identifies areas of campus that are the most opportunistic for growth, building removal or enhancement, Credo will propose a master plan, including some development documents, photos, renderings and estimates.

"In order to grow enrollment and academic offerings on campus, we must determine what resources and facilities we need to support that," says Brian Leslie, Florida Tech vice president of operations. "Working with an unfettered, unbiased third party who comes in to evaluate the needs of campus and

compare that to industry standards helps us get a more realistic look at where we should be enhancing and for what reasons."

Even as master-planning commences, the university continuously works to maintain, develop and improve campus environments through normal fiscal budgeting and operations spending.

To meet growing demand for student housing due to record enrollment numbers, Florida Tech is exploring a partnership to build a new 400- to 500-bed residence hall on campus. The university is also upgrading outdoor wireless across campus, as well as installing new fiber optic runs to ensure redundant capabilities campuswide, aiming to be complete by the time students arrive for fall semester.

"All of the pillars work in conjunction with each other, but I think this fourth pillar is the foundation on which all of the others can be built," Leslie says. "People of Excellence, Programs Driven by Innovation, Transformative Partnerships—we can't be as successful in those pillars unless we excel in this one."



Leslie

Forward Together, Boundless Potential is fluid. While the goals it presents promote a sense of excellence, innovation and transformation throughout Florida Tech, they will be continuously evaluated and refined each year to best reflect who we are, who we want to be and the most rigorous, yet realistic path forward.

"The strategic plan is just the beginning," Nicklow says. "It is the launchpad from which our university—our students, our community and our refined vision for the future—will take off with new vigor and that signature Florida Tech tenacity."

To view the full strategic plan and track our progress, scan here:







## FLORIDA TECH + LARSEN MOTORSPORTS:

# HOW IT STARTED, HOW IT'S GOING

Florida Tech and Larsen Motorsports  
celebrate 10 years of partnership,  
and we're still picking up speed.

By Erin Peterson

For **JAVIER RODRIGUEZ MARTINEZ** '24, nothing compares to the moments before the start of a jet dragster race. As a recent intern for Larsen Motorsports (LMS) and part of the crew for its Florida Tech jet dragster team, he stands near the set of starting lights known as “the Christmas tree” as dragsters prepare to compete. As the cars complete their final checks, 30-foot flames blaze from the engines.

When the lights turn green, Rodriguez is hit with a powerful shockwave of air and sound.

“You can feel it in your body when they launch,” he says of the cars, which reach top speeds approaching 300 mph.

Ten years into the partnership between Florida Tech and Larsen Motorsports, these high-octane moments serve as part of the highlight reel of the connection between the university and the company. But the real impact of the partnership, which launched in 2014 with the support of then-president Anthony Catanese and currently offers opportunities in its 30,000-square-foot space within Florida Tech’s Center for Advanced Manufacturing and Innovative Design (CAMID) facility, goes far deeper.

*continued on page 26*

Through his internship, Rodriguez, who graduated this spring, honed his computer-aided design (CAD) skills and learned the subtleties of maintaining, building and testing engines. He strengthened his social presentation skills, talking to countless jet dragster fans at races and other events. And he lined up a job as a project manager for the energy company SolarPlus near his Puerto Rico home.

There's no question that the work prepares students well: Larsen Motorsports' jet dragsters are built with sophisticated technology and engineering.

"Our cars are built with the same standards and practices you would find in the aerospace industry, but we just put our wings upside down," says Larsen Motorsports CEO Chris Larsen.

Still, the company's most important and valuable products aren't its dragsters, but its people, says President Elaine Larsen.

"People ask us: 'How many times have you won?' 'What's the fastest speed you've gone?' But the numbers we're most proud of are the numbers of students who have gone through our program and the successes they've seen."

Since the program's inception, hundreds of students have gone through its 15-week internship program, and the job placement rate of these students has been 100%.

"They're not getting just any job," says Elaine. "These are future engineers, future leaders—they're the ones who get things done."

These numbers are among the many successes of the program and why it was easy for President John Nicklow to support the recent five-year extension of the partnership.

"Our work with Larsen Motorsports is one of the many ways that Florida Tech helps today's students prepare for careers, solve tomorrow's challenges and pursue their boundless potential," he says.

To understand how far this partnership has come in the past decade, we looked back at some of the institution's and company's earliest ambitions to see how they stacked up to today's reality.



## 1. INSPIRING INTERNSHIPS

**HOW IT STARTED:** Student opportunities were at the heart of the initial partnership goals, and LMS filled a 10-person initial internship class.

**HOW IT'S GOING:** Today, LMS attracts more than 150 applicants for its twice-annual 15-week internship opportunities, and they typically hire 17 students per semester.

"We're trying to do even more," says Elaine of the surge in interest.

Perhaps it's no surprise that the internships have proven popular. In addition to some of the marquee perks—working closely with some of the fastest dragsters on the planet, plus the opportunity to travel across the country to events—students gain practical experience that positions them for great jobs after graduation.

"A student can come to us with literally no hands-on experience whatsoever, and by the time they leave us, they know aerospace standards and practices. They know what it feels like to cut aluminum versus stainless steel and what it's like to weld those different metals," says Elaine. "When they're designing something in their software, they'll have a much better understanding of what they're designing."

They also get mentorship from employees at companies including Northrop Grumman Corp., L3Harris Technologies Inc. and Siemens Digital Industries—which have ended up hiring many former LMS interns. And while Elaine notes that they most commonly work with aerospace, mechanical, electrical or chemical engineering students, they've had interns with a wide range of majors, from ocean engineering to aviation management.

One intern currently making the most of the experience is aerospace engineering major Nihaara Sawhney. Sawhney, who has loved cars since she was a child—"I was a Hot Wheels girl, not a Barbie girl," she says.—saw an internship with LMS as a perfect way to combine her interests. During her internship in fall 2023, she helped manufacture flame holders for the jet dragster afterburners as part of the fabrication team. This spring, she became the team's leader.

While she loves the flexibility that the internship offers right now—"It's a great way to learn while you're still going full throttle with the semester," she says.—she's also appreciative of the opportunities it presents to prepare for life after graduation, such as its robust mentorship program.

"Every Friday, mentors from Northrop Grumman come in to guide us, look over our work and give us tips," she says. "One of them even gave me advice on my résumé. Learning from professionals in the industry is a huge benefit."



## 2. NEW STUDENT RECRUITMENT

### HOW IT STARTED:

Larsen Motorsports keeps a packed event schedule, with dozens of races across the country that attract tens of thousands of fans. From the start, they saw that busy calendar as an opportunity: Florida Tech could use the events to highlight its strengths to a wide range of audiences.

### HOW IT'S GOING:

Over the years, LMS and Florida Tech have developed a streamlined system to build excitement about Florida Tech for young dragster enthusiasts. LMS reaches out to high schools near their events, invites students to come to sessions about the science of a jet dragster and then provides all-access passes to the dragster events.

For prospective students who visit campus, seeing the shop is often a powerful catalyst for future enrollment.

Take Rodriguez, who earned his degree in mechanical engineering. As a prospective student years earlier, he had narrowed his search to a few different schools, including

Florida Tech. During his visit to Florida Tech, he mentioned his love of circuit racing and quarter-mile racing, and he was encouraged to visit the LMS race shop in CAMID.

"I remember that I actually got a tour—I think by Chris [Larsen]—and that was one of the major selling points of the school," he says.

He enrolled, and just a few years later, he was working in the shop as an intern, building the skills that would carry him into the next phase of his life.

"I've learned a lot," he says. "I'll be taking all of that with me as I graduate and go into real life."



“

## 3. FACULTY PARTNERSHIPS

Our partnership will allow us both to collaborate in areas of research and education in ways unique to education and the motor sports industry.”

—Elaine Larsen

**HOW IT STARTED:** A 2014 news release was enthusiastic about the distinctive ways faculty and practitioners might supercharge their work.

“Our partnership will allow us both to collaborate in areas of research and education in ways unique to education and the motor sports industry,” Elaine said at the time.

**HOW IT'S GOING:** These powerful partnerships have come to fruition. One recent collaboration paired Elaine with master's students in a data analytics course taught by assistant professor of information systems Jignya Patel.

For the project, students helped determine the return on investment that Sherwin Williams got through a partnership with Larsen Motorsports. As part of the project, students audited the Sherwin Williams sales process that occurred during the Larsen Motorsports events, analyzed the orders that were generated at the event,

proposed a streamlined process and generated decision-making dashboards for the sales personnel and Larsen Motorsports management. The students presented their solutions and recommendations at the end of the semester to Elaine, and they received practical feedback.

It wasn't just Larsen Motorsports that benefited from the analysis: Students learned key skills from the real-world project.

“Students often work with perfectly clean data in class projects, but that never happens in the real world; they learn to deal with that fluidity,” Patel says. “They also learn to communicate in ways that [align with] the broader context of business. Students are often engrossed in analytical thinking that tends to be more technical, and this project got them to zoom out and think about the work from a business perspective.”

*continued on page 28*

## 4. DEEPENING CONNECTIONS

**HOW IT STARTED:** While Elaine and Chris couldn't have predicted exactly what the LMS-Florida Tech partnership might hold, they knew they didn't want it to be superficial.

"This was not a 'Give us a case of oil; we'll put your sticker on our fender' sponsorship," says Chris. "What we wanted was a true affiliation with a great university that had a reputation of success in the areas that we wanted to focus on."

**HOW IT'S GOING:** It's hard to imagine a better case study of the value of the Florida Tech-LMS partnership than the one offered by the trajectory of **ZACH COSTELLO** '16. As Costello recalls it, he was on his way from class in spring 2015 when he saw a flyer for an unveiling of the Florida Tech jet dragster. On a whim, he decided to check it out, and he was immediately captivated.

"I wanted to be part of that team; I didn't care if I was sweeping floors," he says.

He landed an internship a few months later during the fall of his senior year, during which he helped develop and organize the shop that LMS would eventually call home. In a second internship with the company that spring, Costello started doing metal fabrication.

At one point during his internship, he was at the shop welding afterburners when two managers from Embraer stopped by on a shop tour and started chatting with the young Costello.

"By the time they were done with the tour, I had two business cards and an invitation to send my résumé to them," he recalls.

He did just that. A few weeks later, he had a job offer from Embraer in hand.

"I wouldn't have gotten my first job without Larsen Motorsports," he says.

Even after he took a job at Embraer, his nine-day, 80-hour work schedule meant he could spend every other Friday at the LMS shop, where he continued to hone his skills. He worked on the crew and as lead fabricator. He was promoted to crew chief, and by 2021, he was licensed as a backup driver.

Today, he works across the street from the Larsen Motorsports shop as a performance analyst at L3Harris Technologies. In addition to his official responsibilities, he often talks with interns about their own trajectories, a responsibility he takes seriously.

"It's come full circle, and one of my roles now is to continue that cycle of mentorship at the shop," he says.







## 5. BUSINESS PARTNERSHIPS

### HOW IT STARTED:

When the partnership launched, Elaine says, business engagement and development were as important to them as their work with prospective and current students.

"It was one of our three major pillars," she says.

### HOW IT'S GOING:

Today, students who have completed LMS internships are highly sought after by companies including Northrop Grumman, United Launch Alliance and Lockheed Martin, among many others.

"Florida Tech interns at Larsen Motorsports learn to use the same digital design and analysis tools used throughout industry," says Kirsten Dreggors, vice chair of the Florida Tech board of trustees and vice president of engineering at Northrop Grumman. "They gain hands-on experience integrating their designs directly into the cars. The knowledge and skills they gain at Larsen Motorsports is incredibly valuable for starting careers in engineering. It creates a solid foundation for well-rounded

professionals and really sets them apart from other candidates."

In addition, LMS has built a program to teach other businesses how to run successful internship programs at their own companies.

"We talk with them about onboarding, training processes, milestones and how to teach students how to level up," Elaine says. "We show them what's worked, what hasn't and how we create an environment that keeps students coming back."

It's a process that's designed to help all businesses tap into the deep pool of talent at Florida Tech—and create a pathway for students to land their dream jobs after graduation."

## WHAT'S NEXT

Elaine says they expect the partnership to continue to get stronger: They're eager to do even more with students, internships and business partnerships.

"One of my son's teachers liked to say 'Good, better, best: Never let it rest until your good is better and your better is best.' That's what we believe, too," says Elaine. "We were good the first five years, better the second five years, and in the next five years, we're striving to be the very best. We have new projects that are on the cusp of launching, and our biggest goal is to get all these students into the stratosphere—where they belong."



We were good the first five years, better the second five years, and in the next five years, we're striving to be the very best. We have new projects that are on the cusp of launching, and our biggest goal is to get all these students into the stratosphere—where they belong." —Elaine Larsen

### TOP-TIER

LMS student interns have gone on to work at an array of prestigious companies. A partial list is below.

- |                              |                              |
|------------------------------|------------------------------|
| » Northrop Grumman Corp.     | » General Motors Co.         |
| » Collins Aerospace          | » Tesla                      |
| » L3Harris Technologies Inc. | » General Electric Aerospace |
| » NASA                       | » Pratt & Whitney            |
| » United Launch Alliance     | » Boeing Aerospace           |
| » SpaceX                     | » Lockheed Martin            |
| » Blue Origin                | » Textron Aerospace          |
| » Siemens Digital Industries |                              |



Students Madhu Preethi Kakarla Venkata and Conner Weaver demonstrate research techniques.

# IN THE **BLINK** OF AN **EYE**:

## What blinking can reveal about brain health

BY MARY-LOU WATKINSON

Blinking is a universal experience, but one that we rarely think about. We blink slower when we read and faster when we talk, and the average person blinks about 16,000 times a day.

We do it all the time, so what if we could better understand the condition of our brain based on just a blink? And what if we could monitor brain health without the use of large imaging machines, like CT scanners?

These are the questions Careesa Liu and Sujoy Ghosh Hajra, assistant professors in biomedical engineering and science, are trying to answer.

Liu and Ghosh Hajra recently published three articles on their research with blink-related oscillations (BROs), or the brainwave responses following spontaneous blinking—a new area of neuroscience and biomedical engineering Liu helped establish. Every time you blink, you lose complete visual input for about 100 milliseconds. When you reopen your eyes, your brain processes a brand-new image.

“Your brain then compares this new image with the last one stored in short-term memory,” Liu says. “Did anything change in the

environment? Did any threats appear, like a tiger popping out of the corner of the eye?”

Analyzing this phenomenon can not only tell us information about blink-related processing in the brain, but it can also be used to gauge the underlying cognitive state of the brain.

In one study, Liu and Ghosh Hajra examined pilots as they completed various flight simulations. Using BRO responses to look at the pilots’ brainwaves when blinking, they were able to differentiate between an easy flight task and a harder flight task, as well as examine the effects of aging.

“Aging, especially in the early stages, can have a very subtle impact on brain function, and it’s relatively difficult to assess,” Liu says. “With this, what we’re able to see is that older pilots showed different patterns of blink-related processing relative to younger pilots when comparing between the harder and easier tasks.”

In the second study, they evaluated BRO responses when people completed a NASA-created task. The responses showed that the brain dynamically adapts and prepares for the upcoming blink to store relevant



information when the person is engaged in a complex task, but not when they are doing a simple one.

“Our results show that the brain not only actively processes information with each blink, but it also dynamically adjusts how much brain power and effort it uses depending on what we are doing—all without us ever noticing it consciously,” Ghosh Hajra says.

Together, the findings from the two studies open a brand-new window into brain function, with applications in digital engineering, human-machine interaction, aviation safety, human factors, neuroergonomics, neurology, neuroscience and many others.

“The simplicity of the blink phenomenon as a brain function marker opens a world of opportunity irrespective of someone’s age, gender, race, socioeconomic background and other factors across clinical and non-clinical applications—creating a truly universal measurement of brain function,” Liu says.

In the third study, Liu and Ghosh Hajra examined soccer players who suffered subconcussions, which occur

athlete is considered fit to play again.

“Blinking has traditionally been treated as a nuisance in brainwave measurements,” Ghosh Hajra says. “Previously, brainwave signals that contained blinks would have largely been thrown away, but there is actually very important and key information about what your brain is doing that is contained in these signals.”

Recent evidence indicates that this research can also be used in clinical settings to advance the diagnosis, monitoring and prognosis of certain diseases, such as Alzheimer’s disease. BROs can help detect the underlying brain function changes and neurodegeneration that typically take place years before a patient shows disease symptoms, such as memory loss.

Before working on BROs, Liu and Ghosh Hajra researched traumatic brain injuries caused by events such as a stroke, car accident or cardiac arrest. In these instances, to determine if the patient is still consciously aware, physicians typically use the Glasgow Coma Scale, which requires them to



Students Conner Weaver and Alex Williams review data.

due to the nature of their brain injury.

“As a result, a lot of them end up being misdiagnosed,” she says. “Studies have actually shown that as many as 41%, so almost one in every two patients, who are diagnosed to be in a vegetative state are actually not.”

Alternatively, BRO responses allow physicians to look directly at the brain to extract measures of consciousness, as it looks at key regions of the brain that help drive our consciousness.

large-scale machines like CT and MRI scanners, as those require patients to process sensory information that they may not be able to.

Moving forward, Liu and Ghosh Hajra plan to analyze BRO responses in other scenarios, such as when a person is driving a car, as well as collaborate with other Florida Tech researchers to continue analyzing concussions and other clinical disorders, like autism.

Looking into the future, they envision a world where patients have a tool they can access every day to get a quick measurement of how their brain is doing.

“To get to that future, we need to demonstrate the application in all of these different domains, whether it’s clinical disorders and how we help people get better after a devastating injury, all the way to the other side of it with hyperfunction—to help aviators or astronauts perform at their best,” Ghosh Hajra says.

In parallel with showcasing the many applications of BROs, they are also working on engineering portable, user-friendly hardware so patients can check their brain function at home.

“Ultimately, where this research is headed is developing technologies that we can use in the home. So, when you wake up in the morning, you can put it on and see, ‘How’s my brain doing today?’” Liu says. “Like a smartwatch for the brain.”

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The simplicity of the blink phenomenon as a brain function marker opens a world of opportunity irrespective of someone’s age, gender, race, socioeconomic background and other factors across clinical and non-clinical applications—creating a truly universal measurement of brain function.

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—Careesa Liu, biomedical engineering and science assistant professor

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when they experience a hit to the head, but there are no clinical symptoms. Even though the players are not diagnosed with concussions, their brains are undergoing changes, which can be detected using BROs.

This information can also be used to monitor recovery and determine when an

produce specific behaviors in response to commands, like squeezing a hand or closing and opening their eyes.

Liu says the problem with that approach, however, is that patients may be consciously aware and can understand what a physician is asking them to do, but they cannot produce the behaviors

BRO responses allow us to measure the function of these regions directly, using the simple activity of blinking instead of requiring the patient to produce specific behaviors.

Analyzing BROs also provides a more cost-effective and easier way to monitor brain health in comparison to

## A MESSAGE FROM THE FLORIDA TECH ALUMNI ASSOCIATION

Hi, Panthers!

Spring is here, and with it came another Florida Tech graduation. Congratulations to all our new graduates! We look forward to hearing about your future successes. Please remember to tell the alumni office, so we can share—we love to highlight our alumni!

I am happy to announce that with spring 2024 graduation, we introduced our New Graduate Liaison Program. Each dean nominated at least one candidate to be a Florida Tech Alumni Association (FTAA) board of directors liaison for the college's graduating class. The liaisons will participate in our biannual board meetings and will join committees to work on new student experiences on campus and move our school into the future.

You don't have to be a board member or liaison to get involved. All you need to do is let us know how you would like to contribute. After speaking to some new graduates, I was surprised to find out how many didn't realize that immediately following graduation, you are automatically a member of the Alumni Association. Unlike some universities, Florida Tech doesn't require any dues to be considered an active member of the Alumni Association. The FTAA will never ask you for

money or donations; we look forward to you giving your time and talent to continue improving the student experience and growing our university programs.

Something else new this year: Our FTAA board meetings will be livestreamed and available to view from anywhere in the world. We also welcome you to attend in person! Just RSVP to the alumni affairs office ([alumni@fit.edu](mailto:alumni@fit.edu)). This is a good way to see what we are working on and what our future goals are. You just might find something you would be interested in sharing your time and talent with.

Florida Tech is still a rather young university but with so much to offer our students, community and alumni. By coming together, we can continue to offer an amazing education with a unique student experience that is nationally recognized!

Remember to stay connected with Florida Tech and the Alumni Association by joining or following us on: Florida Tech Connect, Facebook, X, LinkedIn and Instagram. And don't forget, you can always call the alumni office directly at 321-674-7190.

Go Panthers!



### YOUR ALUMNI ASSOCIATION OFFICERS

**Sherry Acanfora-Ruohomaki** '93, '00, '05 M.S.  
President | Melbourne, FL | [sherry@facetscg.com](mailto:sherry@facetscg.com)

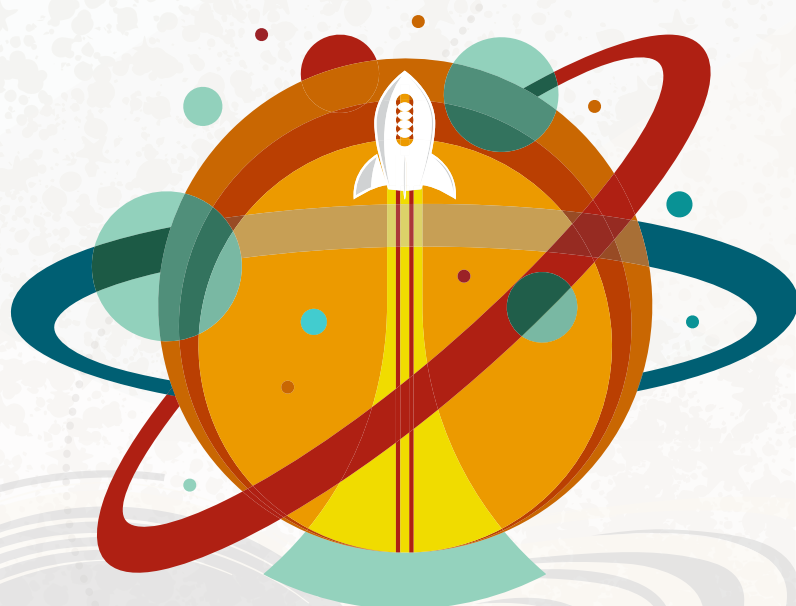
**Ameen Sarkees** '89  
Vice President | Merritt Island, FL | [aysarkees@yahoo.com](mailto:aysarkees@yahoo.com)

**Warren Pittorie** '15, '18 M.S., '22 Ph.D.  
Treasurer | Melbourne, FL | [wpittorie2012@fit.edu](mailto:wpittorie2012@fit.edu)

**John Robertson** '13  
Secretary | San Juan Capistrano, CA | [jrobertson2009@gmail.com](mailto:jrobertson2009@gmail.com)

**Chris Fernando** '02  
Member-at-Large | Raleigh, NC | [cfernando@gmail.com](mailto:cfernando@gmail.com)

**Fin Bonset** '96, '99 MSA  
Past President | Indialantic, FL | [fbonset@vnb.com](mailto:fbonset@vnb.com)



# FLORIDA TECH HOMECOMING 2024

Scan to view photo galleries of all the Homecoming events at [floridatech.edu/alumni-photos](http://floridatech.edu/alumni-photos)





## CONGRATULATIONS TO OUR ALUMNI AWARD RECIPIENTS:



College of Aeronautics  
Outstanding Alumni

**DAVID MECARTNEY**  
'80 A.S., '82 B.S.



Bisk College of Business  
Outstanding Alumni

**MISTY MAROT**  
'99 B.S., '21 MBA



College of Engineering  
and Science Outstanding  
Engineering Alumni

**DAVID NESBITT**  
'87 B.S.



College of Engineering  
and Science Outstanding  
Science Alumni

**MEGAN CRONIN, M.D.**  
'12 B.S.



College of Psychology  
and Liberal Arts  
Outstanding Alumni

**KRISTINE KEANE**  
'01 PSY.D.



Graduate of the Last Decade  
Ad Astra Winner

**ZACHARY EWING**  
'22 B.S.



Jerome P. Keuper  
Distinguished Alumni Winner

**JOE BUSSENGER**  
'13 B.S.

Pilot by day, pageant queen by night, **LEANNI TIBBETTS** '19 is living her dream every day.

Originally from the Cayman Islands, Tibbetts has had a connection to Florida Tech since she was young.

"Florida Tech was one of the only universities that would visit the Cayman Islands who offered a flight program," Tibbetts says. "Due to this, a lot of alumni would come back and work for Cayman Airways after graduation, so I was very familiar with the university."

One of her favorite memories from her time at Florida Tech was being a member of the Caribbean Student Association.

"Moving away from home was very difficult, but when you had a community to go to that you could share your same culture, your food, your dialect, everything, it made the journey away from home a lot easier," Tibbetts says.

After graduating, Tibbetts faced the challenge of entering a post-pandemic workforce.

While Cayman Airways was on a hiring freeze, Tibbetts began working for the Civil Aviation Authority and then transitioned into disaster management working for Hazard Management.

After a few years of working full time and starting her own business, Tibbetts entered the Cayman Islands Coast Guard, where she served for a year.

In May 2022, Cayman Airways began operation once again and hired Tibbetts as a first officer.

"Flying is fun, but the views while doing so are breathtaking," Tibbetts says. "The Cayman Islands have the largest contiguous mangrove system in the entire region and the most epic sunsets."

When she's not flying four times a week, Tibbetts trains to compete in Miss World pageants.

"I have always been a tomboy. While in the Coast Guard, I wore boots every day. So, pageants were never something I thought I would fit into," Tibbetts says.

But after volunteering with the Girl Power organization and meeting a member of the Miss World team at a charity event, Tibbetts realized the pageants were so much more than high heels and dresses.

"I'm very, very passionate about caring for my community, caring for my people and helping others," Tibbetts says.

After working hard and winning local pageants in the Cayman Islands, Tibbetts represented her home country in the 71st Miss World competition March 9 in Mumbai, India.

At this pageant, Tibbetts advocated for two causes that represent her platform and speak to her passions: women's empowerment and sustainability.

"I'm a pilot, I'm a sub-lieutenant with the Cayman Islands Cadet Court and I'm a queen," Tibbetts says. "These different things don't make sense, but here I am. It doesn't matter what box people put you in; you can be anything you want."

—Erin Alvarado



#### SPOTLIGHT ON

## Leanni Tibbetts

**FLORIDA TECH CONNECTION:** '19 B.S. aviation management, flight

**FAVORITE MEAL:** Coconut Dinner, a Caymanian stew/soup made with all coconut milk

**SUPERPOWER:** Being able to speak to someone's heart

**TOP BUCKET LIST ITEM:** See the northern lights

**FUN FACT:** Certified in scuba diving

**SOMEONE WHO INSPIRES YOU:** Jesus

## 1970s

**1 JOSEPH JIMENEZ** '77 has retired from teaching and purchased a bed-and-breakfast called the Magnolia Inn in Mount Dora, Florida. He still proudly wears his Florida Tech college ring.

## 1980s

**DAVID STAGG** '85 has retired after working 27 years as an EHS manager for private sector governmental agencies.

## 1990s

**2 MATTHEW HENDRIAN** '92 A.S., '93, **NICHOLAS CROUCH** '06 and **JOSHUA RICE** '12 had a chance encounter at United Airlines in December 2023.

## 2000s

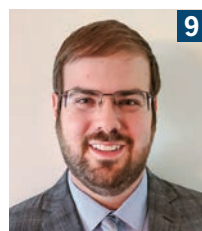
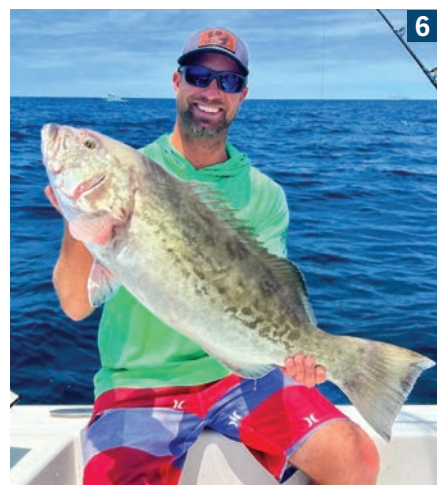
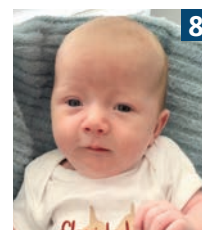
**3 PATRICIA (POCHELON) FAUBERT** '02, '05 M.S., and her husband, Frédéric, welcomed a son named Raphaël in September 2021. Faubert now resides in her home country of Switzerland after finishing her Ph.D. in Portugal in 2011. She works for the European Association for the Study of the Liver and is a scientific program manager.

**4 ZACH NELSON** '07 serves as the director of airport planning for the Southern Region at Ardurra, residing in Indialantic, Florida, with his wife, Krista, and their three children, Zoey, Arlo and Van.

**5 POOJA DALAL** '08 M.S. started as a site coordinator and, within five years, has become a project manager at ICON plc, working with a top-notch pharmaceutical company running tumor clinical trials across the Americas Hub as a member of the global clinical trial team.

**6 MIKE GERLACH JR.** '08, a Melbourne native and life-long fisherman who has been traveling and working in the dredging industry for 15 years,





is back on the Space Coast full time running his fishing charter business. Kraken Down Charters, which Gerlach started years ago as a passion project, has since grown into a multiboat outfit, fishing the inshore and offshore waters surrounding Sebastian, Melbourne and Vero Beach, Florida, seven days a week.

**7 POOJA (BANDEKAR) PATIL** '08 M.S. moved back to the United States for a job opportunity in Pennsylvania for National Resilience as a sterility assurance lead for a global team. She has two "mini Panthers" and would love to one day show them the university where it all started.

## SUBMIT YOUR NEWS TO alumnotes@fit.edu

### 2010s

**8 JENNIFER (HALL) KRYSZCZYNSKI** '10, '13 M.S., and her husband, **BRIAN KRYSZCZYNSKI** '11, '14 MBA, welcomed their son, Blake, in September 2023. Their family, along with big sister Skyla, live in Melbourne, Florida.

**9 JEFF FRISHMAN** '11 would like to thank Florida Tech for giving him a diverse and great

engineering educational experience to help build his foundation for a great career.

**10 ERIK MACKAY** '11 welcomed his second daughter, Marie Regina, in August 2023.

**CHRISTINE (CHATER) ROZZI** '11 works in the gene editing field and started a job at Precision BioSciences, a company developing in vivo gene editing therapies to permanently correct genetic diseases. She resides in North Carolina with her husband,

**JASON ROZZI** '11, and their sweet daughter, Savannah.

**11 BRUNO POGGI CEVALLOS** '14, '15 M.S., accepted an offer for a tenure-track assistant professor position at the University of Pittsburgh. He highly cherishes the education he received from the mathematical sciences and the mechanical and aerospace engineering departments at Florida Tech.

**12 AISHWARYA SUBRAMANIAN** '15 was promoted to program manager with Zoxx, where she works in the autonomous vehicle industry.

*continued on page 36*

Have you ever dreamed of going to Mars? Well, **ANDY GRECO** '10 has already accomplished that goal and didn't even have to leave Earth.

In July 2023, Greco was selected to be the lead engineer for the 15th expedition to the Mars Society's Flashline Mars Arctic Research Station in Devon Island, Nunavut, Canada.

When he first received the email looking for members to join the team, Greco never thought he had a chance of being selected but decided to take a leap of faith.

"At first, I dismissed it because I thought, 'Well, that's something for someone with more experience.' But then, I said, 'Why not? Why not put an application in and see what happens?'" Greco says.

After weeks of interviews, Greco was officially chosen to take the long journey to conduct a two-week simulation in one of the most Mars-like environments on Earth, just 900 miles from the North Pole.

"We used all these analog tools, like spacesuits and rovers, because we want to see what the real challenges are that astronauts are going to face when they're going to be doing this on Mars," Greco says.

The goal, he says, is to develop solutions to such unique problems by encountering the obstacles here, on Earth, before ever encountering them away from the planet.

"We had 24 hours of sunlight, but there still didn't seem to be enough time to get all the work done that we wanted to accomplish," Greco says. "We were putting in 16- or 18-hour days and didn't even realize it because you lose the visual cue of the sun setting and rising to tell you, 'Hey, it's time to go to sleep now.'"

After concluding his expedition at the research station, Greco is even more determined to visit Mars one day.

When he's not dreaming of space, Greco is a 737 Max liaison engineering team lead in Seattle with Boeing Co. Within this role, Greco oversees a group of 22 team members, assisting mechanics and quality inspectors while they build the airplane.

Greco was nominated as a Boeing Designated Expert (BDE) in fuel systems in January.

"My scope of work is the entire airplane, from nose to tail. That allows me access to different technical subjects that pique my interest at the time," Greco says.

Greco's Panther Pride continues to this day, as he works to complete his master's degree in space systems online with Florida Tech. He expects to graduate in spring 2025.

When asked what advice he would give to students about to graduate and join the workforce, Greco says, "Jump into your alumni network. We're out here and want to hear from you!"

—Erin Alvarado



#### SPOTLIGHT ON

## Andy Greco

**FLORIDA TECH CONNECTION:** '10 B.S. aerospace engineering

**DESIRED SKILL:** To play the cello

**GO-TO KARAOKE SONG:** "Don't Look Back in Anger" by Oasis

**LAST SHOW YOU BINGED:** "Community"

**WEEKEND ACTIVITY:** Volunteer for the Mars Society

**MOST-USED PHONE APPS:** EatSleepRIDE (motorcycle GPS), Merlin Bird ID and Google

continued from page 35

#### 13 TYLER HECKMAN

'16, '17 MBA, '19 M.S., was promoted to junior partner at Flavin, Nooney & Person CPA Wealth Advisors, where she started her internship during her time at Florida Tech. Heckman's husband, **RYAN BAILEY** '15, '17 M.S., '18 MBA, was promoted to innovation director at Groundswell Startups in Melbourne, Florida.

**RAFAELA NITA** '16 Ph.D. accepted a new position as a contractor with Booz Allen Hamilton, which allows him to leverage his Ph.D. in chemistry from Florida Tech and MBA in entrepreneurship from the University of Massachusetts, applying his knowledge and skills to facilitate groundbreaking advancements in health and medicine.

#### 14 KEITH CRISMAN

'17 M.S., '20 Ph.D., performed research while living underwater for 24 hours with two excellent graduate students from the University of North Dakota. They are now planning a 48-hour mission for 2025.

#### 15 NICHOLAS CUSHING

'17 was a recipient of a NASA Team award for his efforts on Artemis in 2023. He is an AFT skirt project engineer for the Space Launch System and Booster Obsolescence and Life Extension, working for Northrop Grumman Corp.

#### 16 ZAK KOLODZIEJCZAK

'17 started a new position at L3Harris Technologies Inc. as a posture security analyst on the FAA program. In May 2022, Kolodziejczak married his wife, Jordan, and they welcomed their daughter, Josephine, in April 2023.

#### SHANE CHARBONNET

'19 Ph.D. has self-published 14 books. Charbonnet has also furthered his research-driven studies by successfully attaining 11 certifications in UX Design.





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## 2020s

### 17 TOM WINDERS

'20 and his wife, Nicole Winders, former Florida Tech staff member, welcomed a son named Cassian.

**KRISTEN BRODERICK** '21 started a new position as a glovebox operator at NASA's Marshall Space Flight Center.

**18 HAROLDO MONTERO** '21 MBA was promoted and wanted to thank Florida Tech for giving him the resources to succeed in his career. The

MBA program allowed him to gain the knowledge needed and use it effectively at work.

**19 CHELSEA STALCUP** '21 and **ZACH SEYMOUR** '21 were married in December 2023 in Cocoa Beach, Florida. They both work at Blue Origin, where Seymour is an engineer and Stalcup is a project manager. The couple recently bought their first home.

**ASHLEY TISARANNI** '23 accepted a position at NASA's Johnson Space Center, training to be a flight dynamics officer in mission control for Orion in upcoming Artemis missions.



### Welcomed a Panther Cub?

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

For details: [alumni@fit.edu](mailto:alumni@fit.edu)



### Sun 'n Fun

Alumni Affairs hosted a one-of-a-kind alumni meetup April 13 at the SUN 'n FUN Aerospace Expo, one of the world's largest annual aviation events, at Lakeland Linder International Airport.

Alumni, students, future Panthers and friends mingled and networked while enjoying complimentary food and drinks, playing lawn games, getting up close to the Florida Tech jet dragster, checking out FIT Aviation's aircraft and more.

## IN MEMORIAM

**MICHAEL JOSEPH KALIL** '93 M.S. passed away Jan. 11 in Arab, Alabama, at age 69. After graduating from Florida Tech, Kalil entered the U.S. Army, which he served for 21 years, eventually attaining the rank of major. Following an honorable discharge, Kalil created his own company, MJK Consulting Services, which he continued until retirement.

**CODY CAPPS** passed away Dec. 28, 2023, in Robertson County, Tennessee, at age 37 after battling the flu. Capps was a special education teacher and received a graduate certificate in behavior analysis from Florida Tech.

**KATHLEEN VIOLET CROOKS**, wife of faculty emeritus Kenneth Crooks, peacefully passed away Dec. 22, 2023, at age 93 after a lengthy illness.

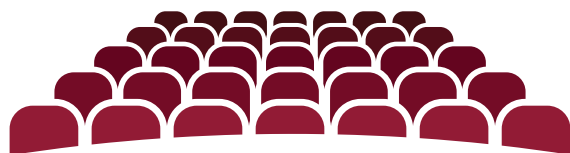
A dedicated wife of 70 years and mother to five sons, Crooks also devoted herself to church activities, families in need, wildlife conservation and youth organizations.

**RAGHVENDRA GIRIRAO "R.G." DESHMUKH**, a distinguished scholar of electrical engineering who spent nearly a quarter-century as a faculty member at Florida Tech, passed away Oct. 8, 2023, at age 86. Born in Chincholi, India, Deshmukh came to the U.S. at age 37. He earned a master's degree and Ph.D. in electrical engineering at Oklahoma State University and in September 1982, was hired at Florida Tech as an associate professor in electrical and computer engineering.

## Sara Catanese

**SARA CATANESE**, a former Florida Tech first lady whose elegance and generosity enriched campus and all of the Space Coast, passed away in her sleep May 2, after a brief illness. Wife of former Florida Tech President Anthony Catanese, she was an effective and attentive philanthropist, active with the Brevard Symphony Orchestra and its South Guild and well known for her involvement with charities including the Health First Foundation, Indialantic Rotary, St. Stephens Way, King Center for the Performing Arts and others.

"Sara's gentle spirit and generosity were keenly felt anytime I was in her company," said Florida Tech President John Nicklow. "The Florida Tech family already misses her."



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# Launching into a New Era

Joe Bussenger, who recently left SpaceX for a new role with Relativity Space, received the 2024 Jerome P. Keuper Distinguished Alumni Award.

By Erin Alvarado

The true measure of a university's greatness is the achievements of its alumni.

**JOE BUSSENGER** '13 was honored with the Jerome P. Keuper Distinguished Alumni Award at the 2024 Annual Homecoming Alumni Awards Gala April 6.

This award recognizes alumni whose career accomplishments honor the university's legacy of excellence and is the highest honor a Panther can receive.

"When I was informed of the award, I was pretty speechless," Bussenger says. "Sometimes, it is easy to get caught up in your work and not take a step back to appreciate the magnitude of what you are doing or how others outside of your workspace appreciate it."

Bussenger is the director of launch operations and Florida site director for the Terran R program with Relativity Space.

"I really do love my work at the launch site because you are subject to a wide variety of different engineering disciplines," Bussenger says.

Before his current role, Bussenger worked for over 10 years at SpaceX, after completing an internship with the company while in his junior year at Florida Tech.

After graduation, he converted to a full-time engineer at SpaceX and was the first launch engineer dedicated to Falcon 9 landing operations. During his time in this role, Bussenger was honored to announce to the world "the Falcon has landed" to the millions watching the historic event.

While growing in the ranks with SpaceX, Bussenger's responsibilities

included being the primary landing controller for over 100 Falcon 9 landings, overseeing cargo and astronaut recovery and managing varying groups, including recovery and launch control.

Growing up in Perkasié, Pennsylvania, Bussenger developed a passion for motor sports and rockets at a young age. By age 10, he was determined to be an aerospace engineer and through the support of his family, he was able to participate in science and industrial fairs to strengthen this passion.

"During the winter of my senior year, I had won an award in high school that brought me down to the Cape to see a shuttle launch," Bussenger recalls. "We happened to be staying in Melbourne, and my Dad and I had time to kill and came across Florida Tech by accident. When I peeked in the Olin building and saw rockets in the lobby, I was sold."

While thinking back on his time at Florida Tech, Bussenger fondly remembers Discovery Day as one of his favorite events to participate in.

"It was a great opportunity to engage with prospective students and show off the work we were doing as undergrads," Bussenger says.

These structured, full-day events are visitors' chance to dive in, learn about and get a true feel for Florida Tech's campus and community. His advice for them then and now:

"Chase opportunities that you are passionate about no matter how young or green you may feel in the field. At the end of the day, you learn a lot, no matter if you are successful or not."



## SPOTLIGHT ON

# Joe Bussenger

### FLORIDA TECH CONNECTION:

'13 B.S. aerospace engineering

### RECENT HONOR:

Winner of the 2024 Jerome P. Keuper Distinguished Alumni Award

### THREE ITEMS YOU'D BRING IF STRANDED ON A DESERT ISLAND:

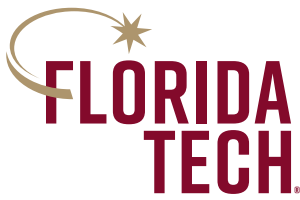
Personal locator beacon, music and a hockey stick with a puck

**IDOL:** Christopher Columbus Kraft Jr., father of the NASA control room

**ACTOR WHO WOULD PLAY YOU IN A MOVIE:** Tom Hanks

**MORNING PERSON OR NIGHT OWL?:** Night owl

**HOBBY:** I love motor sports. So, you can usually catch me at a track or watching some sort of racing. My goal is to hit every F1 track before I retire.



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## LIBRARY DEDICATION

On Jan. 23, 1965, Florida Tech hosted the dedication of the William August Bartholomae Library (pictured here), a two-story building with room for 40,000 books and study space for 250 students. The library remained here, in what is today the Jerome P. Keuper Administration building, for 20 years until John Evans, who along with his wife, Flossie, played a critical role in building Melbourne's first library, donated \$5 million for construction of the four-story, 66,500-square-foot Evans Library. Panthers still use today.

The tortuous tale of how the original "debt-free" Bartholomae Library came to be is detailed in *Missiles, Mischief, and Mayhem: The Secret History of Countdown College*, university historian and professor Gordon Patterson's book recently released in honor of the university's 65th anniversary. All royalties from the book support the endowment for the Joy and Gordon Patterson Botanical Garden.

**CELEBRATE WITH US!**  
[floridatech.edu/65](http://floridatech.edu/65)



**65**  
YEARS

**FORWARD TOGETHER  
BOUNDLESS POTENTIAL**

On Jan. 23, 1965, the library was renamed the Jerome P. Keuper Administration building, in honor of Werner von Braun, and Jerome P. Keuper, courtesy of the Harry P. Weber Foundation.



Installment 9

## A BLOND BOMBSHELL, A MURDER, A BROKEN PROMISE

"The only thing you absolutely have to know, is the location of the library."  
—Albert Einstein

The small woman moved with precision as she rearranged shelf. She seemed to know what she was doing, but Jerry Keuper had no idea who she was.

Years later, Keuper recalled his first encounter with Eileen in May 1961. Four months earlier, the trustees for the University of Melbourne had transferred ownership of its 35-acre campus from Club Road to Brevard Engineering College (BEC). In April, workers poured the foundations for the administrative buildings in what would become the Academic Center.