

**GO FOR
LAUNCH**
THE CAMPAIGN FOR UCF'S NEXT MISSION

CASE FOR SUPPORT



College of Engineering
and Computer Science

**CREATING A WORLD
THAT HAS NEVER BEEN**





When we have a problem, engineers solve it. They make our life easier. Without engineers, our society would not function and survive. Think about it. Every critical concern we face today — from making clean water accessible and curing disease to advancing artificial intelligence and building resilient energy systems — demands engineering innovation and scientific discovery.

The University of Central Florida has never backed away from a challenge. Our College of Engineering and Computer Science students and faculty have the expertise, the drive and the vision to tackle today's complex issues. What we need is the capacity to seize opportunities and empower our faculty, students and private/public partners. You can help.

We invite you to join us on a historic mission. Go for Launch is more than a UCF philanthropic campaign — it's our commitment to shape what's possible. Be the engine that propels the College of Engineering and Computer Science. Come aboard as we prepare for liftoff. The trajectory is clear: innovation, impact and opportunity. **Our future. Your move.**

WHY GIVING MATTERS

Think of the way education changed the trajectory of your life and how the assistance of others helped you to obtain your goals. If your career has been in the aerospace, defense, digital arts and other engineering and technology industries, there's a good chance you've worked alongside UCF graduates.

About 16,000 students are enrolled annually in the College of Engineering and Computer Science. Our students learn from some of the top faculty in the country, educators whose teaching and research are advancing industry priorities, strengthening Florida's workforce and elevating U.S. competitiveness.

The College of Engineering and Computer Science offers many meaningful ways to make a difference. From establishing a named scholarship to funding interdisciplinary programs and research facilities, you can create life-changing opportunities for the next generation of dreamers, doers and innovators who will shape our nation and define our future.

**DID YOU
KNOW?**



You can peek into the future, each semester, when as many as 200 graduating students turn classroom knowledge into real, working prototypes at UCF's Senior Design Showcase.

Supported by corporate and alumni donors, this exhibition highlights students, who build everything from autonomous drones and sustainable clean energy solutions to advanced, smart medical technology.



GREAT PLACES TO GIVE

STUDENTS AND FACULTY



Endowed Professorships

Born in a small village in India, **Subith Vasu** walked barefoot through paddy fields to reach school. Today, that little boy is dubbed by the United Nations as “The Combustion Man” for developing ways to safely destroy chemical weapons like sarin gas. With his appointment to a UCF trustee chair professorship, Dr. Vasu brings international attention to the College of Engineering and Computer Science.

“Developing a safe hydrogen engine and ensuring efficient storage is challenging,” says Vasu, an expert in optics and spectroscopy in the aerospace and energy sectors. “But I’m optimistic that (our) projects will revolutionize energy sustainability.”



Endowed Scholarships

He was a lead engineer on NASA’s Space Shuttle Program, where he worked for seven years on 13 successful missions, including frequent trips to the International Space Station and the last journey to the Hubble Space Telescope. But these days, **Corey Frazier ’04 ’07MS** has a hard time calling himself a rocket scientist. He’s more focused on stoking the ambitions of others than discovering cosmic mysteries.

“I see myself as a philanthropist who wants to do a lot of good, impactful things with technology to make the world a better and cooler place,” says Frazier, who established the Dr. Corey A. Frazier First Generation Endowed Scholarship Fund for engineering students who are the first in their family to attend college. I am thrilled to create an opportunity to enable people to have the education to live the life they want to live.”



Graduate Fellowships

Through the UCF Graduate Dean’s Fellowship, an award that includes one year of tuition support for a graduate education and a \$5,000 stipend, **Amanda Bernard ’22** is pursuing a doctoral degree in material science and engineering. As a member of the KM Group, led by Assistant Professor Kausik Mukhopadhyay, her goal is to one day start a biomaterials business to advance patient care and improve lives.

“My work focuses on developing polymer-based biomaterials that can promote wound healing and could eventually be applied in tissue engineering,” says Bernard. “I work on creating hydrogels and films that mimic the body’s natural environment to help wounds heal faster and better.”

INFRASTRUCTURE

Advanced Manufacturing



Think of UCF's new \$4 million Thermo Fisher Talos F200X as an atomic-level window into the foundation of modern technology. This state-of-the-art analytical transmission electron microscope equips researchers with advanced nano analysis tools to peer deep inside next-generation microchips.

By enabling direct observation of elemental, chemical, electrical and magnetic states, the instrument dramatically expands what faculty, students and industry partners can measure and build. Its impact spans critical sectors – from aerospace and defense to biotechnology, semiconductors and energy – accelerating innovation and cementing UCF's role in powering Florida's advanced manufacturing and semiconductor workforce.

Artificial Intelligence

Seizing on an enormous opportunity to lead, improve human well-being and strengthen America's competitiveness, the Institute of Artificial Intelligence is engaging UCF faculty, students and industry partners within the College of Engineering and Computer Science in groundbreaking work that benefits our communities, state and nation.

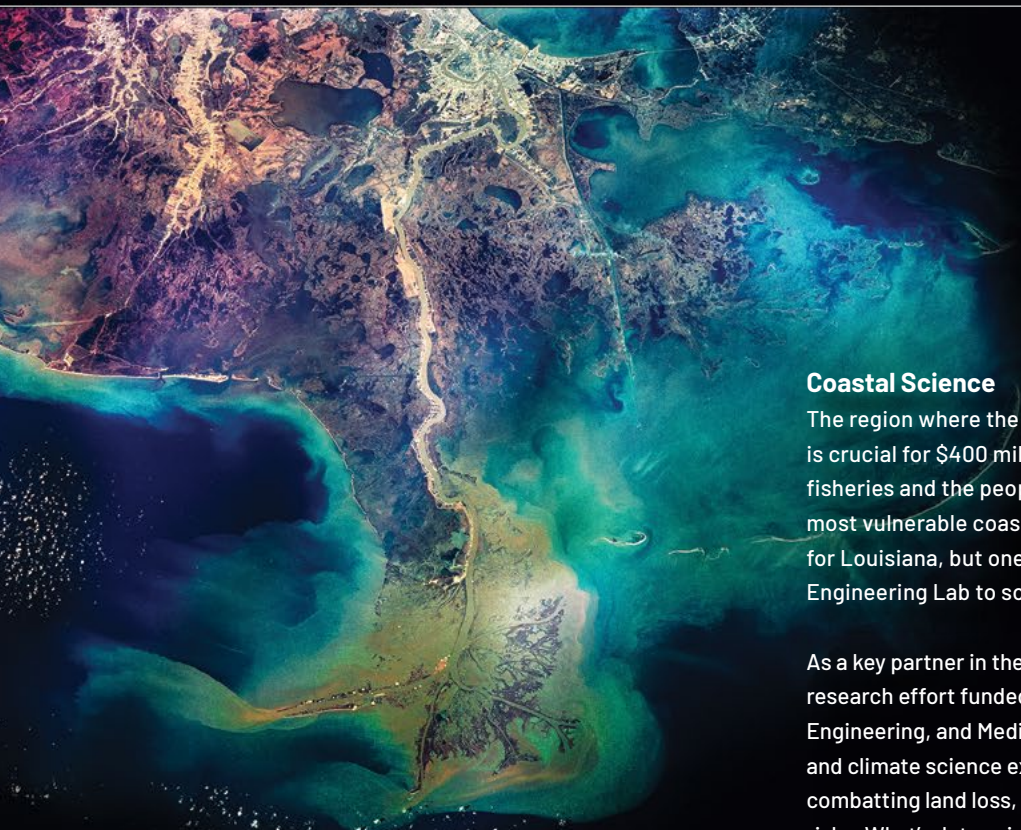
From developing autonomous systems that increase agricultural productivity and models that advance drug discovery to making self-driving cars a reality, UCF faculty and research centers collaborate with a growing network of connections across disciplines to accelerate machine intelligence and prepare the next-generation workforce with the AI fluency that employers need.



Biomedical Engineering

One millimeter can decide between life and death for a newborn with a complex heart defect. While pediatric cardiac surgery has traditionally relied on steady hands and flat, two-dimensional scans to treat these fragile patients, UCF's Computational Mechanics Lab is engineering a higher standard of care. Under the direction of Dr. Alain Kassab, the lab partners with Orlando Health Arnold Palmer Hospital for Children to pioneer patient-specific virtual hearts. By simulating intricate blood flows in real time, this lifesaving technology allows surgeons to digitally master complex procedures and eliminate guesswork long before the first incision is ever made.





Coastal Science

The region where the Mississippi River meets the Gulf of Mexico is crucial for \$400 million in U.S. commerce, energy, wildlife, fisheries and the people who live there, but it's also one of the most vulnerable coastal areas in the world. It's a problem not just for Louisiana, but one for researchers at UCF's Coastal Risks and Engineering Lab to solve.

As a key partner in the "MissDelta" initiative, a \$22 million, five-year research effort funded by the National Academies of Sciences, Engineering, and Medicine, the lab is offering coastal engineering and climate science expertise to develop adaptation strategies for combatting land loss, ecological decline and increased storm surge risks. What's determined will have far-reaching implications. About one in 14 people around the world live on populated river deltas that are under threat.



Digital Twins

What if we could peer into a computer screen and witness a mirror of reality itself; a sharp, vibrant color counterpart fed by real-time data streams, allowing us to monitor any part of our physical world: the place we work, the town we live in, a hospital, a school system or our university. Through the UCF Knights Digital Twin initiative, we can.

Supported by federal grants and a new academic credential, the digital twin initiative advances research in AI-enabled simulation beyond "what if" scenarios to improve efficiency and predictive modeling for industry, including manufacturing, defense, healthcare, entertainment and urban infrastructure.



Cybersecurity and Programming

With their time as members of the UCF Collegiate Cyber Defense Club, behind them, identical twins **Martin '20 '22MS** and **Michael Roberts '19 '21MS** are doubling down on their affinity for the internationally renowned UCF student organization. Martin, who leads the security engineering program at workforce management company Fountain, and Micheal, who oversees cybersecurity at Abbott Diabetes Care, are deeply embedded in supporting, mentoring and training UCF computer science talent.

"It's important to stay involved in this way, and I recommend this to more alumni," says Martin. "I'm only where I am today because of technical mentors who took the time to help train me up at the high school and collegiate level."



Dean's Excellence Fund

Coming off a stint in the Army Reserves, **Kristan Koopman '25** was determined to be all that he could be when he began his pursuit of a mechanical engineering degree. On his way to graduation, he took advantage of the Engineering Leadership and Innovation Institute, eli2.

"That included mentoring project leaders, managing technical resources and fostering cross-disciplinary collaboration," says Koopman, who is on his way to fulfilling his dream of building advanced robotics as he begins his career at Northrop Grumman.

Gifts to the Deans Excellence Fund provide a dependable source of support for programs like eli2, which enables engineering students to develop soft skills beyond their degrees.

Hypersonics

Increasing the speed of air travel to five to ten times the speed of sound could one day make the world feel faster and astonishingly more connected. It's a national priority and one of the goals of UCF's HyperSpace Center, where a team of researchers is working to enhance defense systems and intercontinental travel and open new frontiers in space exploration.

"High-hypersonic propulsion technology is being born here, similar to how new technology was developed at Kennedy Space Center during the space era," says **Kareem Ahmed**, a professor in the Department of Mechanical and Aerospace Engineering who directs the Propulsion and Energy Research Lab. "Now it's happening at UCF."



WHY COLLEGE OF ENGINEERING AND COMPUTER SCIENCE

#1

SUPPLIER OF GRADUATES
TO U.S. AEROSPACE AND
DEFENSE INDUSTRIES

(Aviation Week Network)

#1

CHOICE FOR MODELING AND
SIMULATION ADVANCED
TRAINING FOR DOD

4

NATIONAL ACADEMY OF
ENGINEERING FACULTY

6

CONSECUTIVE NATIONAL
COLLEGIATE DEFENSE
COMPETITION CHAMPIONS

8

GRADUATE SCHOOL
RANKINGS IN TOP 75
(U.S. News & World Report)

#2

PREFERRED SUPPLIER OF
GRADUATES TO THE AEROSPACE
AND DEFENSE INDUSTRIES
(Aviation Week Network)

40+

DEGREE PROGRAMS

332

FACULTY AND STAFF

\$60.2M

RESEARCH FUNDING
FOR FY2024

WHY UCF NOW

TOP 15

MOST INNOVATIVE
UNIVERSITY IN U.S.
(U.S. News & World Report)

#1

EMERGENCY
MANAGEMENT PROGRAM
(U.S. News & World Report)

#1

GRADUATE VIDEO
GAME DESIGN PROGRAM
IN THE WORLD
*(The Princeton Review and
PC Gamer Magazine)*

#1

COLLEGE FOR HOSPITALITY
IN THE WORLD
(CEO World Magazine)

\$229M

RESEARCH
EXPENDITURES

70K

STUDENTS ENROLLED

436,588

DEGREES CONFERRED

384,500+

ALUMNI

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**Advancement
and Partnerships**