



A UNIVERSITY FOR THE FUTURE

AEROSPACE AND DEFENSE



UCF's Lockheed Martin Cyber Innovation Lab is a high-tech space that serves as a learning hub where students can develop their cybersecurity and engineering skills.

Innovative technologies and renowned research at UCF are shaping the future of aerospace and defense. Our faculty's vast experience and collaborative efforts with industry are helping engineer future aircraft and aeronautical vehicles, strengthen global security, develop sustainable solutions, and explore ways to improve air and space transportation.

Strong partnerships with industry help align programs to meet demand and advance research to solve the world's greatest problems right here at UCF.

And by providing the necessary talent and brainpower to fuel industry partners such as Lockheed Martin, Siemens and NASA, the university is fulfilling a demand for critical, high-value jobs across the state.

While others adapt to the changing environment, UCF is building a university for the future that paves the way for academic innovation and inclusive excellence that will support the economic diversity of our state for generations to come.

“Many people don't realize it, but Lockheed Martin employs more UCF graduates nationwide than alumni of any other university.”

Amy Gowder,
former Vice President of Lockheed Martin

UNIVERSITY OF CENTRAL FLORIDA

#1

► **Supplier of graduates to the aerospace and defense industries for six years in a row**
Aviation Week Network

#2

► **Homeland security and emergency management graduate program in the nation**
U.S. News & World Report

27%

► **Of Lockheed Martin employees in Orlando that are UCF grads**

29%

► **Of Kennedy Space Center employees are UCF alumni**

#81



► **Best Undergraduate Engineering Programs in the nation**
U.S. News & World Report

\$2.9M

► **From the National Science Foundation to train the next generation of cybersecurity defenders**

\$26.1M

► **Awarded by the Department of Defense in 2020 for research projects**



NY to LA in Under 30 Minutes

A UCF-developed propulsion system is changing the paradigm of what's possible in aerospace and defense. Associate Professor of UCF's Department of Mechanical and Aerospace Engineering, Kareem Ahmed, says the technology has the potential to revolutionize hypersonic propulsion and energy systems. In addition to faster air travel — with flight speeds of Mach 6 to 17. The technology could also be used in rockets for space missions to make them weigh less, travel farther and burn more cleanly.



Cybersecurity Research Helps Reduce Fraud

Paul Gazzillo, an assistant professor in UCF's Department of Computer Science, will lead a new project to make investigations into corporate relationships easier and quicker by creating automated tools that help investigators track complex corporate relationships. This automated assistance could help prevent organizations from making fraudulent claims that don't get caught, as well as help root out potential breach avenues. The three-year project is funded by a nearly \$1 million Defense Advanced Research Projects Agency (DARPA) Young Faculty award.



No. 1 Cybersecurity Team in the Nation

UCF's Collegiate Cybersecurity Competition team thwarted a simulated cyber attack and beat out 119 other teams to win the 2021 U.S. Department of Energy CyberForce Competition. The team, which has placed in multiple national competitions over the past decade, gives students real-world training in safeguarding the nation's critical infrastructure from cyberattacks. Hands-on opportunities at UCF provide the quality experience needed to develop a talented engineering workforce that will help Florida continue to be a leader in aerospace and defense.



Where UCF Graduates Work



UCF Institutes, Associations and Affiliations



Explore more about UCF's impact on healthcare at ucf.edu/aerospace-defense or [scan here](#)





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SPACE SCIENCE & RESEARCH



UCF plays a big role in educating future engineers, administrators and space explorers — something we'll continue doing over the next 50 years and beyond.

Founded in 1963, our university was established at the start of the race to land humankind on the moon. In fact, many UCF researchers and educators are NASA veterans and hail from some of the biggest, most important programs in U.S. space history.

We're helping discover and shape humankind's footprint in space. Rather than be satisfied with incremental change, we're bold. Our space researchers and educators innovate, plan, and deliver high-quality solutions for the most pressing engineering challenges.

UCF's renowned faculty are global thought leaders who have conducted research into microgravity environments and how planets form. Our experiments have flown to the International Space Station and aboard Blue Origin and Virgin Galactic space flights. In addition to studying scientific questions such as the origins of planets, UCF's research changes course for the future.

And now, as we look to return to the moon and set foot on Mars and other worlds, one thing is for certain — UCF researchers are turning possibilities into reality.

“UCF's relationship with NASA is really providing a reservoir of scientific talent that enables the goals of our space program. That kind of talent is not found in most universities in the country.

Dan Britt,
UCF Pegasus Professor

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5

► Space-related graduate programs in the top 100
U.S. News & World Report

8

► Experiments sent to space aboard Blue Origin, SpaceX and Virgin Galactic rockets since 2019

17

► UCF researchers have asteroids named after them in recognition of their work

27%

► Of Orlando-based Lockheed Martin employees are UCF graduates

29%

► Of Kennedy Space Center employees are UCF alumni

222

► Faculty, researchers and students working on NASA projects
U.S. News & World Report

674

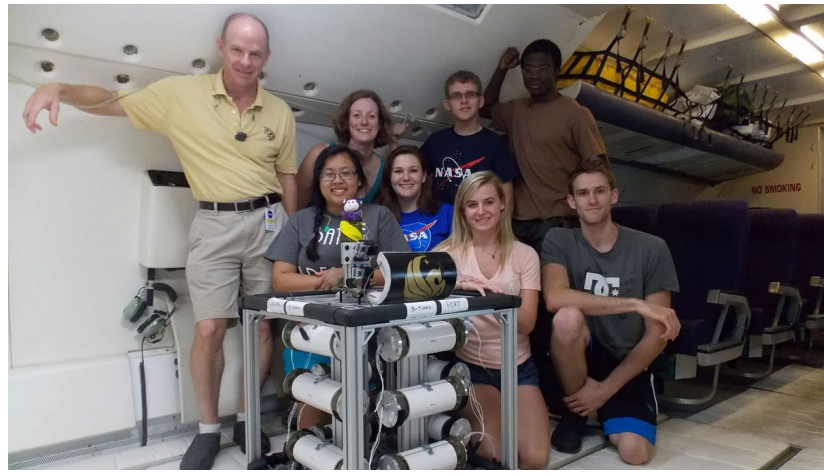
► NASA projects with UCF involvement (as of Dec. 2021)

\$193.5M

► In NASA awards since 1991 (as of Dec. 2021)

America's First Stephen W. Hawking Center

Like the late legendary physicist, Stephen Hawking, UCF researchers are probing the cosmos to explain its greatest mysteries. The university's Stephen W. Hawking Center for Microgravity Research and Education — the first American research center to bear his name — builds on Hawking's groundbreaking discoveries about how the universe formed and fulfills his wishes to advance microgravity research. It will also explore ways of making space travel safer and inhabiting Mars or the moon.



Physics Professor Named Jefferson Science Fellow

Professor Humberto Campins, an expert on asteroids, is the fourth UCF professor to receive the national honor that builds STEM expertise within the U.S. Department of State and U.S. Agency for International Development. During his year advising the U.S. Department of State, he'll make significant contributions to our nation and bring that STEM expertise back to the classroom. During his time in D.C., he'll also continue his research involving collecting data from the OSIRIS-REx mission that's sample is due back to Earth in 2023.



Getting the U.S. Back to the Moon

Among the university's extensive space research, more than a dozen projects are aimed at safely returning to the moon — and many directly support NASA's Artemis mission and other lunar operations. The projects range from reducing the harmful effects of lunar dust on equipment and astronauts to developing robotics, flying and landing space craft, and mining fuel to run it all. They'll also help support future research initiatives.



Where UCF Graduates Work



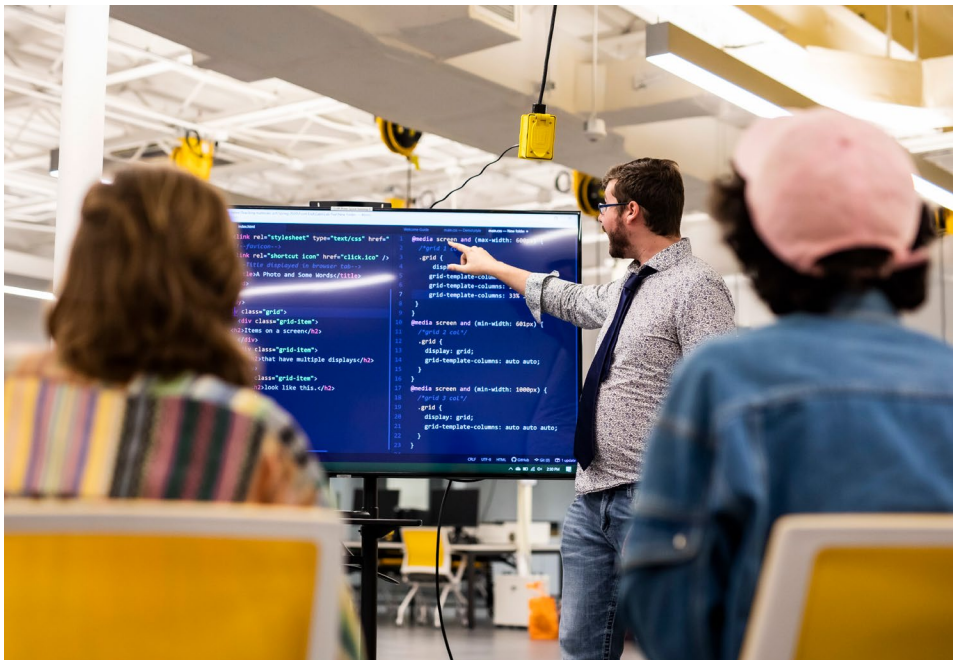
UCF Institutes, Associations and Affiliations





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DIGITAL ARTS AND ENTERTAINMENT



With interactive media on the rise across the nation, UCF's digital arts and entertainment researchers and educators are developing the latest tech to launch new products and immersive experiences.

From creative scholars to renowned researchers, UCF is reshaping the way people consume advanced technology and interact with the world. Our top-ranked digital arts and entertainment programs have gained global recognition. With robust studios, labs and classrooms, faculty and students come together to ideate and create discoveries that will transform the future landscape of digital arts.

UCF's Communication and Media Building — home to one of the largest motion capture studios and soundstages on the east coast and the latest technology — serves as the hub of innovation where our forward-thinking artists can learn new skills through hands-on experiences. Plus, with premier digital media and entertainment companies right in our backyard, the university's close ties with industry help us drive the creative economy in Florida and across the nation.

“FIEA is a major source of talent for our EA Sports development studio in Orlando, resulting in one of every two new graduates hired over the last 2 years.”

Daryl Holt,
EA Sports vice president

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#1

► Graduate game development program in the world

The Princeton Review and PC Gamer

1st

► To offer a master's in themed experience

#2

► Among the nation's top public animation schools and colleges

Animation Career Review

#2

► Public game design school in the U.S.

Animation Career Review



► UCF animation alumni have worked on some of the biggest movies from the last decade, including *Avengers: Infinity War*, *Frozen II*, *Avatar 2*, *Moana*, *Onward*, *Soul*, among others.



Enhancing AR and VR Tech

UCF Assistant Professor Maria Harrington received a grant from Epic Games — maker of Fortnite — to develop immersive technology that takes virtual experiences to new levels of reality. Harrington used the grant to complete a virtual experience through UCF's arboretum, which is home to 247 acres of unspoiled Florida habitat. The project pulls from field observations, photos, measurements, drone footage and historical geographic information system (GIS) data — showcasing data visualization of the botanical and ecological information.



Top Graduate Video Design Program

UCF's graduate video game design program has been recognized as the top graduate game design program in the world — garnering the top spot for the third time in six years. The undergraduate game design program also ranks highly at No. 14. The university's game design programs have state-of-the-art equipment and facilities, talented and experienced faculty, and the advantage of being in physical proximity to top gaming companies in the nation.



Creating Immersive Experiences

Themed experience instructor **Patrick Brailard '14MA** brings a wealth of industry knowledge with him to the classroom. Brailard brings state-of-the-art events and experiences to life — most recently serving as the creative director for Howl-O-Scream at SeaWorld. His first-hand work in the industry gives students a hands-on opportunity to develop and create their own immersive events. They learn to apply various aspects of storytelling and work collaboratively as part of an interdisciplinary team.



Photo courtesy of SeaWorld Orlando

Where UCF Graduates Work



UCF Institutes, Associations and Affiliations





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HEALTHCARE



As a leader in advanced medical research and education, UCF is developing solutions to the most pressing challenges — from advancements in cancer to battling Alzheimer's to understanding how best to treat chronic conditions.

The work conducted by renowned healthcare faculty researchers and educators at UCF drives change and improves patient outcomes. These visionaries and mentors are driven to be part of something greater than themselves. They come from around the world to conduct advanced research and train future healthcare leaders — making UCF a model for medical education in the 21st century.

Located in the medical hub of Central Florida, we're part of a growing biosciences cluster that paves

the future for healthcare education, research, and patient care. This atmosphere of innovation creates new scientific knowledge and breathes curiosity into our approach. UCF's strong industry connections allow us to work together with communities around Florida to promote health equity, collaboration, and to address and eliminate healthcare disparities through our research. This wealth of knowledge and expertise helps in continuing to advance medical research and treatments that will improve patient care across the state, nation, and globe.

“

Our students are scoring in the top quartile and above nationally in all measurements. We are gaining a national and worldwide reputation for innovation and academic excellence. The best part is we are just getting started.

Deborah German,
vice president for medical affairs and
founding dean of the College of Medicine

1ST

► UCF was the first medical school in the U.S. to provide full scholarships to an entire class

TOP 8%

► Physical therapy in the nation on first-attempt licensure pass rates

#20



► In Best Online Graduate Nursing Programs in the nation

U.S. News & World Report

#46

► Best Healthcare Management school in the nation

U.S. News & World Report

95.9%

► Match rate of UCF medical students in areas such as primary care, emergency medicine, surgery, psychiatry, among others

440

► Residents and fellows currently training with UCF and HCA to help alleviate the state's physician shortage

855+

► Clinical site affiliations where UCF students earn clinical experiences

11,000+

► UCF nursing alumni across the state, nation and world

UCF Faculty Include Top Doctors

Eight College of Medicine faculty physicians were named Top and Premier Doctors by *Orlando Magazine* for 2021. Physician awardees cover multiple specialty areas such as nephrology, rheumatology, pathology, general surgery, internal medicine, and dermatology. The list, which includes peer nominations, is a testament to UCF's extraordinary patient care while training the next generation of healthcare leaders and creating scientific discoveries to improve health.

\$300K Gift Supports Healthcare Innovation

To support interdisciplinary healthcare innovation at UCF, the Elizabeth Morse Genius Foundation gifted \$300,000 to the university. The donation is the first major programmatic gift to the Academic Health Sciences Center since it was created in 2018 and will support the UCF Genius Innovation Challenge, a new initiative designed to promote synergy through interdisciplinary approaches and solutions. The work will bring together researchers, clinicians, and students to foster innovation and holistic healthcare.

Getting Real

UCF's College of Health Professions and Sciences is leading the way in using hologram technology to train future healthcare professionals with a new device that allows students to interact live with holograms or through prerecorded content. Nicknamed Dr. Hologram — the patient simulation tool created by PORTL — students receive lifelike patient interactions, without a patient ever actually being present. UCF was able to acquire the device thanks to a gift from Brooks Rehabilitation.



Where UCF Graduates Work



UCF Institutes, Associations and Affiliations



Explore more about UCF's impact on healthcare at ucf.edu/healthcare or [scan here](#)





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HOSPITALITY AND TOURISM



The internationally renowned Rosen College of Hospitality Management is consistently ranked as a top 5 program in the world. Known for innovative academic programs, cutting-edge research and strong industry and community partnerships, we're serving up the future of hospitality and tourism.

Uniquely positioned in the center of world-class attractions, top hotels and restaurants, and a massive convention center, UCF's Rosen College of Hospitality provides an unrivaled opportunity to learn and work in the industry's leading market. Our internationally recognized faculty create a culture of global hospitality education that encompasses innovative research, integrated curriculum, and industry partnerships. The influential and cutting-edge work by Rosen College faculty researchers

has been included in top-tier journal publications, conference presentations, and industry consulting.

As one of the top 5 best colleges for hospitality and tourism in the world, we're the largest hospitality educator across the globe that's established a well-earned reputation for producing exceptional graduates and industry leaders. Our top-caliber learning environment inspires innovation and fuels the hospitality talent pipeline across the state.

“Great people are at the heart of hospitality and Rosen College has been an exceptional partner and training ground for our industry. The academic programs, research capabilities, renowned faculty, the deep partnerships in the industry — all of these elements make Rosen College a unique institution that we are pleased to have here in Orlando.”

Thomas Mazloum,
President, Disney Signature Experiences

TOP 5

► Best colleges for hospitality and tourism in the world

CEOWorld magazine

1ST

► In Florida to create a stand-alone PhD program in hospitality management

97%

► Placement rate among Rosen College of Hospitality Management graduates

3,000+

► Undergraduate students, making our program one of the largest and fastest-growing hospitality programs in the nation

\$225K

► In scholarships awarded annually to provide students with access to affordable hospitality education



Top 5 Hospitality Program in the World

UCF's Rosen College of Hospitality Management is ranked among the top five best hospitality and hotel management schools in the world. The college, which is less than 20 years old, ranked fifth for 2021, among colleges and universities that have been in existence for more than 50 years. As a premiere hospitality and tourism program, the recognition demonstrates the dedication of our faculty and staff in conducting quality and impactful research and educating the future leaders.



Modeling Hospitality in Telemedicine

Two Rosen College faculty researchers, Wei Wei and Yun Ying Zhong, recently conducted research on the effects of incorporating hospitality factors to facilitate positive telemedicine outcomes. The results affirmed the importance of hospitality factors in the emotional outcomes of users of telemedicine. Patients felt more empowered and less isolated and anxious. The model can help develop training and other innovative programs, as well as be used for future research on human-technology interactions across many different industries.



The Power of E-Commerce

With continuous development in information technology, the hotel industry is under pressure to invest in e-commerce capabilities. A team of Rosen College faculty researchers examined the issue further and found a significant value-added synergy between e-commerce investment and loyalty programs. The findings have important implications for strategic decision-making in the hotel industry and can apply to other fields. Adopting technology is a key factor for growth in hospitality and an important way to gain sustainable advantage over competitors.



Where UCF Graduates Work



UCF Institutes, Associations and Affiliations



Explore more about UCF's impact on hospitality and tourism: ucf.edu/hospitality-tourism





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MODELING AND SIMULATION



Located in the heart of the modeling, simulation and training capital of the world, UCF serves as a hub for industry research — deploying novel solutions that drive the future of simulation.

As a global leader in modeling and simulation education, UCF builds a foundation for a high-performing workforce that will help shape the industry's future. Our expert faculty and researchers bring years of experience to the classroom and have been involved in programs that yield transformative results, including virtual reality technology that helps treat PTSD and a software that transforms the production of floating offshore wind turbines.

UCF is also home to the Institute for Simulation and Training which is one

of the nation's leading research centers for modeling, simulation, training, virtual and mixed reality research for both defense and commercial applications. Plus, our location in Central Florida — the modeling, simulation and training capital of the world — provides us with unparalleled opportunities to work alongside top industry leaders in their initiatives, from implementing national security measures to improving healthcare. University researchers, educators and scholars harness the power of this multidisciplinary research to address society's greatest challenges and drive positive change.

“We are second in the nation for simulation. Lockheed Martin Corp. and others see Central Florida as fertile ground for that partnership. UCF was the first to offer graduate degrees — master's and doctorates — in modeling and simulation.

Tom Baptiste,
former president and CEO for the National Center for Simulation

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Top 10



► **Best Online Bachelor's Programs for Veterans**

U.S. News & World Report

38+

► **Years that the Institute for Simulation and Training has served as the modeling and simulation research arm for UCF**

#71

► **Undergraduate computer science program in the nation**

U.S. News & World Report

#79

► **Best Undergraduate Engineering Programs in the nation**

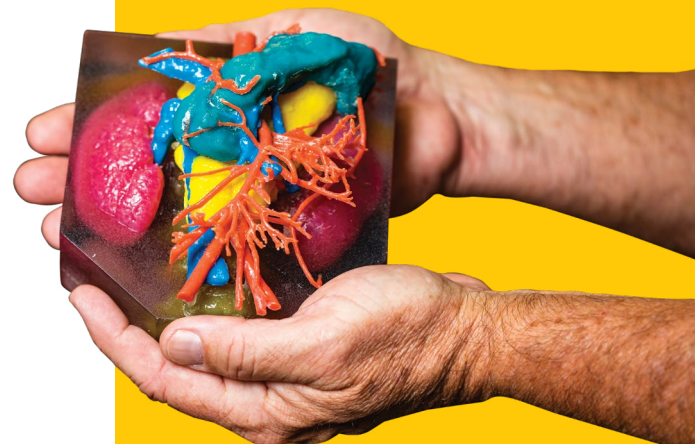
U.S. News & World Report

\$13.5M+

► **In research funding awarded to UCF's Institute for Simulation and Training in 2020**

\$6B

► **Contributed to Florida's regional GDP from the businesses in Central Florida Research Park — adjacent to UCF's main campus**



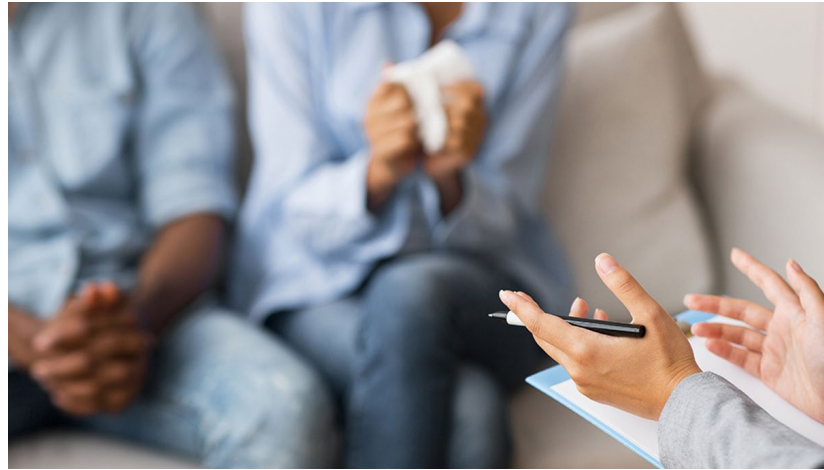
UCF and Army Team Up Together

The Cooperative Research and Development Agreement (CRADA) — between UCF and the U.S. Army's Development Command Soldier Center in Orlando — will provide Army with innovative science and technology solutions. Additionally, UCF students will have the opportunity to intern with the Army where they'll contribute to the development of real-world solutions. This vital collaboration will mentor the next generation of scientists and engineers while fueling innovative ideas that benefit our nation's warfighters.



Renewing Hope Through VR

UCF RESTORES, a nonprofit trauma research center and treatment clinic at UCF, has developed a state-of-the-art VR treatment tool that can be used to dynamically recreate each patient's traumatic experience. By re-introducing these sensory elements that now serve as "triggers" of fear and panic while undergoing therapy, the patient learns to no longer react fearfully or avoid the sights, sounds and places that used to generate their fear and are able to recover from PTSD.



Renowned Simulation Expert

Syretta Spears, assistant director of the UCF Simulation, Technology, Innovation and Modeling Center in the College of Nursing, is among the first to receive the advanced certified healthcare simulation operations specialist designation from the Society for Simulation in Healthcare. The certification recognizes those who are certified healthcare simulation operations specialists who have demonstrated leadership and advanced simulation capabilities at their institution and beyond — highlighting Spears' dedication to simulation pedagogy.



Modeling and Simulation Companies Employing UCF Graduates





A UNIVERSITY FOR THE FUTURE

SOCIAL MOBILITY



UCF is a campus that invites all students to pursue their passions and provides them the opportunity to succeed.

At UCF, one of our top priorities is ensuring that every student has an opportunity to earn a high-quality education at an affordable cost. A college degree improves lives. It paves the way to a stable career and financial stability.

Eliminating achievement gaps and reducing barriers for students of all backgrounds and incomes has been a decade-long focus for UCF. As a result, the university has

made significant strides in reducing achievement gaps among student populations, dramatically outperforming the national average in key areas. UCF has received national recognition for its social mobility efforts. Education Reform Now ranks the university as No. 2 in the nation for social mobility impact and U.S. News & World Report places us among the top public universities for social mobility, graduate indebtedness, and graduation and retention.

“

UCF is this combination of an institution that has a tremendous number of first-generation and Pell [Grant]-eligible students — I was both of those — and includes a diverse mixture of people. It puts us in a strong position to be a role model.

UCF President Alexander N. Cartwright

#2

► In the nation for social mobility impact
Education Reform Now

20.6%

► Of the UCF student body is comprised of first-generation college students

49.1%

► Of UCF students are minorities

57%

► Of first-time-in-college students graduate without any educational debt from UCF

7,900+

► Pell Grant students completed their bachelor's degree at UCF in 2020-21

\$105M+

► In Pell Grant aid is awarded to UCF students on average. This amount covers 76 percent of UCF tuition and fees



Top Institution for Latino Students

UCF is one of just 10 institutions nationwide to earn the Seal of Excelencia this year, and one of just 24 institutions in total that have earned the certification. Excelencia in Education is the nation's premier authority on efforts accelerating Latino student success in higher education. The award illustrates UCF's longstanding commitment to student success and our efforts to intentionally serve Latina/o/x student — creating a powerful and lasting impact at UCF and for our community.



\$40 Million Transformational Investment

Philanthropist and author MacKenzie Scott and her husband, Dan Jewett, gave a \$40 million unrestricted gift to UCF in June 2021 — the largest in school history. It validates the work our faculty and staff do to foster student success and we are thankful these funds will enable us to increase our impact for generations of students. The gift will strengthen the university's focus on fostering social mobility while developing the skilled talent needed to advance industry across our state and beyond.



First-Generation Student Pursues Dreams

Studio art student Eileen Zelaya credits the chance to pursue her degree to her immigrant parents' emphasis on higher education and generous donors who have funded scholarships at UCF. The first-generation student is grateful for scholarships that allow her the opportunity to put her energy towards school and a quality education rather than struggling to make ends meet. When she crosses the stage in 2022 with her degree, Zelaya says the moment will be one of her greatest accomplishments.



UCF Awards and Recognitions



Explore more about UCF's impact on social mobility at ucf.edu/social-mobility or [scan here](#)

