

FRONTERS

2024 - 2025 ANNUAL REPORT



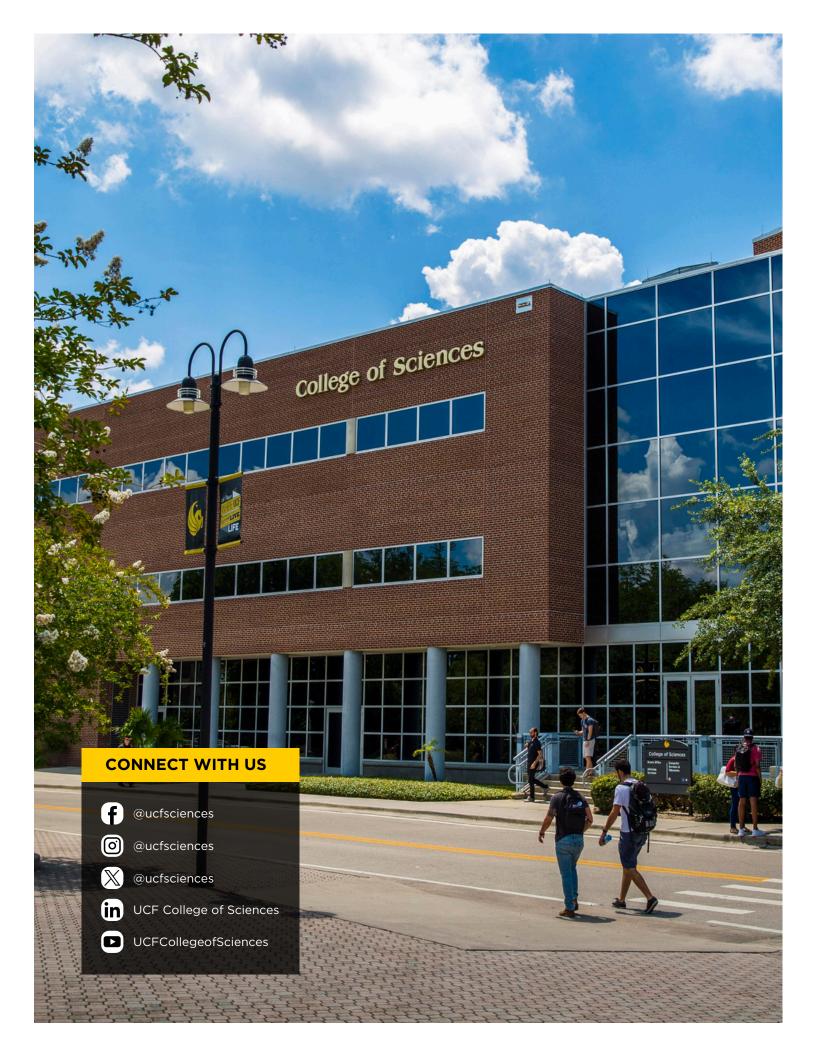




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Where Exploration Meets Impact.

MISSION STATEMENT



As the **University for the Future**, we aspire to be **innovative** in higher education and among the most **impactful** universities in the country.

- UCF Strategic Plan (2022-2027)

The College of Sciences (COS) is committed to providing a world-class education in an environment where faculty, staff, and students thrive, research flourishes, and our community prospers while building a reputation for its commitment to discovery, rigorous experimentation, creative exploration, and accessibility. As the university's largest college, COS is essential to achieving UCF's strategic vision of *Unleashing Potential: Becoming the University of the Future*.

BY THE NUMBERS

COLLEGE PROFILE















STUDENTS

1,047
GRADUATE
15,042
UNDERGRADUATE







FOUR-YEAR GRADUATION RATE

RESEARCH











FROM THE INTERIM DEAN

LEADING THE FUTURE



We are just beginning to imagine the potential of what we can accomplish when we work together.

Joshua Colwell, Ph.D. Interim Dean, College of Sciences I'm humbled and optimistic as I take the reins as Interim Dean of the College of Sciences. Joining the University of Central Florida in 2006 as faculty in the Department of Physics was the first step on an exciting path in the proving ground of space exploration.

During my time here at UCF, I've enjoyed working with fellow faculty and students and engaging in opportunities that enhance our reputation as SpaceU. Educating and preparing our students is at the core of our mission and I'm committed to continuing the college's remarkable progress in supporting student success. As the former Assistant Director of the Florida Space Institute and Chair of the Department of Physics, I've developed a profound appreciation for the innovation, creativity, and talent of our faculty, students, and staff and our collective impact on Central Florida and beyond.

This past year, as the Associate Dean of Research, I worked alongside fellow faculty to launch a new Interdisciplinary Seminar Series at the College of Sciences. We brought faculty together across the

sciences to discuss topics ranging from experimental research on novel materials to quantum science. We'll continue to develop new ways to support our faculty in their scholarly endeavors. We are just beginning to imagine the potential of what we can accomplish when we work together. I'm grateful to Dean Maggy Tomova and colleagues for your investment in this incredible university where dreams become reality.

I look forward to engaging faculty, staff, students, partners, and donors to push the frontiers of imagination and foster connection in our COS community in the months ahead.

With appreciation,

Joshua Colwell, Ph.D.

Interim Dean of the College of Sciences

Shull

FROM THE FORMER DEAN LEGACY & VISION

As I wind down my tenure as Dean of the College of Sciences, I am filled with gratitude. Over the past four years serving as Dean, I've had the opportunity to witness remarkable achievements and interact with incredible people within our campus and in our communities. This year has been no exception.

In 2024, I also took on the role of Vice Provost of Strategic Initiatives at UCF, helping to leverage opportunities to catapult student success and share the approaches that are driving results within the College across the university.

I'm so pleased to share that thanks to the tremendous work of our faculty and staff and the support of partners and donors, we have seen our four-year undergraduate student graduation rate at the College of Sciences rise to nearly 70% (up from 54% in 2021). This metric is a critical indicator on the path for UCF to achieve Florida Preeminence, a program that acknowledges the state's highest-performing public research universities.



Success doesn't come overnight but it takes the time and care of many people.

Maggy Tomova, Ph.D.Dean, College of Sciences

Success doesn't happen overnight but takes the time and care of many people. We conducted a thoughtful evaluation of our STEM classes, looking for ways to close gaps where students were struggling and where faculty needed support. We fostered a learner-centered design initiative, encouraging best practices that create a less stressful learning environment and help students better meet faculty expectations. Moreover, we embraced ways to improve our culture and build connections with the larger community of College stakeholders.

I hope as you read the stories of excellence in this annual report, you are inspired by the ways our students, faculty, staff, and partners are working together to solve our world's most pressing and complex problems. I'm deeply grateful for the time I've spent leading the College of Sciences and I look forward to cheering on our future research, innovation, and success.

Charge on!

Maggy Tomova, Ph.D.

Dean of the College of Sciences & Vice Provost of Strategic Development



UNDERGRADUATE

UCF Film Students Named Finalists in Coca-Cola Refreshing Films Program

Nicholson School of Communication and Media

For the first time, UCF film students were named national finalists for their short film, *Screening Love*, in the Coca-Cola Refreshing Films Program, a competitive opportunity that gives college students the chance to create branded content for Coca-Cola and gain industry experience. Professor and Associate Director of the Film and Mass Media program Lisa Mills says the



intersection of technology and creativity plays a vital role in filmmaking, which is highlighted in UCF's innovation-driven film program. Written and directed by Grace Tompkins '24, the film tells a heartfelt, imaginative story inspired by the magic of moviegoing. Tompkins, who grew up in the foster care system, says stories were her refuge—and now she's creating them to inspire others. The production team included Kenny Sanon '24, who served as a producer while balancing full-time work and classes. For him, the experience taught him the power of collaboration and perseverance.

ANTHROPOLOGY



Using Stories of the Past to Educate Current and Future Generations

UCF graduate Griffon Binkowski's interest in anthropology stemmed at an early age and has led him to a career in public education, where he serves as the resident archaeology specialist at the Orange County Regional History Center. During his undergraduate studies, he worked on the Cape Canaveral Archaeological Mitigation Project, a collaboration between the UCF Department of Anthropology and the 45th Space Wing of the U.S. Space Force, to further understand the cultural significance of various sites located within the Cape Canaveral Space Force Station. Binkowski says the opportunity was especially meaningful, as it made field school more accessible and provided invaluable hands-on experience.

CHEMISTRY



Breaking Barriers in Global Healthcare

UCF junior Andrea Hernandez Gomez became UCF's first recipient of the 2024 Voyager Scholarship, awarded to just 100 students nationwide. Created by the Obamas and Airbnb co-founder Brian Chesky, the scholarship supports future public service leaders with financial aid, international travel opportunities, and long-term career support. Double majoring in biochemistry and biomedical sciences, Gomez's experiences, including helping hurricane-impacted communities in Puerto Rico, continue to fuel her passion for making healthcare more accessible across the globe.



Being a Voyager is about using these experiences to foster innovation, to drive change, and advocate for what you really believe and the change you want to see.

- Andrea Hernandez Gomez

COMMUNICATION & MEDIA



Nicholson Student Earns Prestigious New York Times Internship

English literature and journalism double major Kendal Asbury was selected for the highly competitive DOW Jones News Fund (DJNF) internship program—one of just 81 students chosen nationwide out of nearly 1,050 applicants. Through the internship, Asbury is working alongside recent graduates and seasoned editors in the national newsroom. Asbury credits her success to the mentorship and academic support she received at UCF.



I am thrilled to represent the University of Central Florida in a national program and at one of the most renowned newsrooms in the world.

- Kendal Asbury

PSYCHOLOGY



Cultural Immersion Fuels Students' Creative Ambitions

Fifteen UCF students, including two from the College of Sciences, were awarded the Benjamin A. Gilman International Scholarship, which supports study abroad experiences that enhance academic and professional growth. Psychology major Micaela Tolentino and digital media major Waldemar Morales spent a semester in Barcelona, Spain. The experience sparked new insights and ambitions for both students. Tolentino returned inspired to pursue a career in clinical psychology, with a focus on holistic approaches like art therapy. Morales received a broadened global outlook and fresh ideas for video game design.

GRADUATE

Improving Scientific Instruments for Lunar Missions

Department of Physics

Physics doctoral student Jared Long-Fox is advancing lunar excavation research as a NASA Space Technology Graduate Research Opportunities fellow. His work focuses on optimizing scientific instruments, such as rover wheels, and their interaction with the lunar regolith surface. As a former lead developer of the UCF Exolith Lab, now used by NASA and other institutions, his findings highlight the need for new technologies and testing



methods to support the effective design of equipment for resource extraction and infrastructure on the moon. He credits his UCF education and faculty mentors for opening the door to NASA collaborations.

ANTHROPOLOGY



Combining Archeology with AI to Explore Ancient Landscapes

Doctoral student Bryce Peacher is combining anthropology with artificial intelligence to understand how ancient societies shaped the world around them. As a fellow with Harvard University's Spatial Data Lab, Peacher says using Geospatial Artificial Intelligence as a research assistant to analyze archaeological landscapes can create more timely, efficient, and cost-effective depictions.

BIOLOGY



Studying Seagrass, Protecting Oceans

Biology graduate student Carla Perscky, a U.S. Navy veteran and executive director of Anglers for

Conservation, received the Susan L. Williams Memorial Graduate Marine Conservation Scholarship, named after the late scientist known for her work in coastal ecosystem conservation. The award will support Perscky's research on how ocean temperature changes affect a Florida tropical seagrass species, a vital habitat for biodiversity, shoreline protection and carbon capture.



Researching Snakes, Preserving Ecosystems

Biology doctoral student Jenna Palmisano is studying the impact of *Raillietiella orientalis*, an invasive lung parasite

introduced by Burmese pythons in South Florida. Her research focuses on the dusky pygmy rattlesnake, a venomous but ecologically important mesopredator at increased risk from the disease. Supported by multiple grants, Palmisano is generating data to inform conservation strategies for Florida's native snakes and ecosystems.



Conserving Oyster Reefs With Prestigious Scholarship

UCF biology graduate student Luciana Banquero, a first-generation college student, was awarded the prestigious Aylesworth Scholarship. This scholarship from Florida Sea Grant recognizes top marine science students across Florida. Banquero gained hands-on experience through fieldwork with the UCF Coastal and Estuarine Ecology Lab, where she contributes to oyster reef restoration and studies the human impact on coastal ecosystems.

CHEMISTRY

Can Small Molecules Shape our Climate?

Alec DeCecco, a doctoral student in UCF's Department of Chemistry, has been selected for the U.S. Department of Energy's Office of Science Graduate Student Research Program—one of 62 students nationwide to earn the honor. His research focuses on Criegee intermediates (CIs), small but highly reactive molecules formed in the atmosphere when ozone reacts with unsaturated compounds emitted from natural or manmade sources. By studying these complex reactions, DeCecco aims to better understand their impact on the climate.





Exploring Nuclear Waste Storage

Zachary Murphy, a doctoral chemistry student at UCF, was awarded the National Nuclear Security Administration's Program Award for Technical and Higher-Education (PATH) in recognition of his research on nuclear waste management during an internship at Lawrence Livermore National Laboratory (LLNL). There, he studied the geological conditions best suited for long-term nuclear waste storage, applying insights to his UCF research on how uranium minerals interact with organic molecules and waste.

PHYSICS



Advancing Renewable Energy Research

Kaige Shi, a doctoral physics student at UCF, received the prestigious Russell and Sigurd Varian Award from the American Vacuum Society for his research on how electrolyte cations influence electrocatalytic reactions to produce chemicals and fuels using renewable energy sources. His work advances understanding of how electrolyte composition affects reaction efficiency, supporting efforts to reduce fossil fuel dependence in sectors like transportation.



COS Alumna Awarded Honorary Doctorate Degree

Department of Mathematics

The College of Sciences Spring 2025 commencement ceremony featured special guest speaker alumna Yvette Kanouff, who received one of the highest honors bestowed by UCF, an honorary doctoral degree. Kanouff earned both her bachelor's and master's degrees in mathematics from UCF and has remained engaged with UCF, currently serving on the College of Sciences Dean's Advisory Board. As a JC2 Ventures partner and winner of prestigious awards, Kanouff is helping address global



challenges. She has made an impact in numerous industries, contributing to and spearheading technology found in most households today. In her commencement speech, she expressed gratitude to her family and friends, emphasizing the importance of mentorship in her life and encouraging graduates to give back, particularly to their alma mater.

COMMUNICATION & MEDIA



COS Alum Named Editor-In-Chief of Orlando Business Journal

Richard Bilbao, a journalism graduate of UCF's Nicholson School of Communication and Media, was named editor-in-chief of the Orlando Business Journal (OBJ). Bilbao began his career at OBJ as a reporter in 2008 and has since served in roles including digital producer and associate managing editor. Over his 16-year tenure, he has earned recognition, including from the Florida Press Club and the Society of Professional Journalists.



I was supported by professors and fellow students to be confident in myself and the training I got from UCF. If I had to do it all over again, I would choose to be a Knight every single time.

- Richard Bilbao

2025 College of Sciences Distinguished AlumKnight Awards

This annual awards ceremony recognizes notable alumni from the College of Sciences for their outstanding personal, professional, and philanthropic achievements.



Tamar Yuval Yishay, Biology, BADistinguished Young AlumKnight Award

Tamar Yuval Yishay is a biomedical engineering doctoral student driven by a passion for biomedical research and its clinical applications. Committed to advancing the field of neuroimmunology, she aims to bridge the gap between scientific discovery and medical practice.



Gina Berko Solomon, Political Science, BA *Distinguished Noble Knight Award*

Gina Berko Solomon joined the Adult Literacy League of Central Florida in 2005 and now serves as executive director. A former U.S. Peace Corps volunteer, she holds an executive MBA and is a dedicated nonprofit leader making a meaningful impact in Central Florida.



Joe Funderburke, Security Studies, PhD
Distinguished Social Sciences AlumKnight Award

Joe Funderburke is a senior military fellow at the Institute for National Strategic Studies and an adjunct professor at Syracuse University and Georgetown University. A West Point graduate with over 25 years of experience, he is a recognized leader in national security, strategic policy, and U.S. defense.



Shengwei Xu, Statistics, MSDistinguished Physical Sciences AlumKnight Award

Shengwei Xu serves as Research and Accountability Administrator for Seminole County Public Schools. She plays a key role in evaluating the district's strategic plan and providing data-driven insights to leadership. She is also passionate about expanding community access to STEM education and opportunities.



Charles Richardson-Gongora, Forensic Science, BS
Distinguished Natural Sciences AlumKnight Award

Charles Richardson-Gongora is a Senior Chemist at Kennedy Space Center as part of a contractor-run chemical analysis laboratory in support of its Space Port operations. He serves as Past Chair of the UCF Alumni Association's College of Sciences Alumni Chapter and was recognized in UCF's 30 Under 30 Awards.



Heather Fagan, Advertising and Public Relations, BA *Nicholson School of Communication and Media Hall of Fame Award*

Heather Fagan is chief of staff to Orlando Mayor Buddy Dyer, where she plays a key role in shaping and executing the mayor's strategic vision for the city. Fagan leads major initiatives, advises on emerging issues, champions legislative priorities, and strengthens community partnerships. She was named Public Relations Professional of the Year by the Florida Public Relations Association's Orlando Chapter.

Meet the College of Sciences

30 UNDER 30 AWARDEES



Jacob Ballard '19 '22MS Political Science, BA Urban Planning, MS



Aly Derksen '19 '21MAPsychology, BS
Educational Leadership, MA



Dashiell Desravines '20 Biology, BS



Paul Gill '18 Political Science, BA Burnett Honors College

The College of Sciences celebrated eight outstanding alumni who were named to UCF's 30 Under 30 list. These AlumKnights have achieved early career success while giving back through mentorship, community impact, and ongoing engagement with UCF.

As associate director of Varsity Knights and doctoral student in educational leadership, Aly Derksen is strengthening the connection between UCF and its former athletes. She says that thanks to her tenure at UCF Athletics, She has gained extensive experience across departments various departments, allowing her to develop a well-rounded understanding of the university. Through Varsity Knights membership program, Derksen is reconnecting them with UCF Athletics and celebrating their achievements through football season gatherings, reunions, and mentoring opportunities.

Dashiell Desravines, a biology graduate student, says participating in UCF organizations helped him develop valuable leadership, interpersonal, and professional skills that have been essential in his growth as a young professional. this experience also allowed him to stay connected to the Central Florida community and understand how to create a meaningful impact locally and beyond. Through his nonprofit FleriLab, he aims to build agricultural labs in Haiti to support local farmers through soil testing, crop improvement, and sustainable agricultural practices.



My goal is to use science to deliver real-world solutions where they're needed most.

Dashiell Desravines

Paul Gill received a bachelor's degree in political science in 2018. With both of his parents having graduated from UCF in 1986, he says his roots with the university run deep. "When it came time to choose a college, UCF was the only option that felt right in both my heart and head," Gill says. He expressed his gratitude for being selected as an awardee, noting that the recognition is another meaningful way to stay connected to UCF and honor the impact it has had on him and his family.





Angelina Leary '19 '21MS
Psychology, BS
Clinical Psychology, MA
Burnett Honors College



Aly Derksen '19 '21MAPsychology, BS
Educational Leadership, MA



Rossana Woodford '18
'20MNM '20MPA
Psychology, BS
Nonprofit Management, MNM
Public Administration, MPA



Tamar Yishay '20 '21MS Biology, BA Nonotechnology, MS Burnett Honors College

Angelina Leary, a doctoral clinical psychology student, defied the odds of a multiple sclerosis diagnosis and pursued her dream of becoming a Knight. After being diagnosed with MS in high school, she shared her fears about attending college with a therapist who suggested she reconsider attending college. Instead of discouraging her, Leary says the conversation fueled her determination to succeed.

Katy Sullivan, who earned her master's in political science in 2019, says UCF had a profound impact on her career. As the daughter of an immigrant parent, she gained a unique perspective on American politics. She finds the most rewarding part of her career is finalizing complex, years-long bilateral international treaty agreements that advance U.S. space cooperation and industry.

UCF's 30 Under 30 awardees exemplify what it means to be Knight from beyond their journeys as students. In multiple career fields they have shown how dedication, leadership and service can imprint a difference in the world at the beginning of their careers.



FACULTY EXCELLENCE



Political Science Professors Retires After 53 Years

School of Politics, Security, & International Affairs

Roger Handberg, Ph.D., professor of political science in the School of Politics, Security, and International Affairs, retired after more than five decades of teaching, research, and leadership at UCF. Handberg, a U.S. Army veteran and expert in space policy, joined the university in 1972 when it was still Florida Technological University. He played a key role in developing programs like the Lou Frey Institute, Kurdish Political Studies Program and The India Center. In addition, he mentored generations of students, founded UCF's Pre-Law Day, and was recognized with a scholarship fund bearing his name. Honored at a special lecture this spring, colleagues praised his prolific scholarship—including 170 publications and nine books—and his lasting impact on UCF's academic community. In his final lecture, Handberg reflected on the awe of space exploration, a topic that defined much of his career, and emphasized the enduring human quest for discovery.

COMMUNICATION & MEDIA



Film Professor Receives Inaugural Cinematic Legacy Award

Barry Sandler, associate professor of Film and Mass Media, was honored with the inaugural UCF Cinematic Legacy Award for his decades-long contributions to the film industry and commitment to student mentorship. A veteran screenwriter known for groundbreaking films like Making Love, Sandler has taught at UCF for 20 years, inspiring students through personal storytelling and real-world experience. Recognized with numerous industry awards, Sandler continues to shape the next generation of filmmakers with passion, wisdom, and a focus on socially impactful storytelling. Noticing the shift in storytelling when he started teaching screenwriting in 2003 until now, he says that the movies we embrace reveal who we are as a society.



When I started teaching screenwriting in 2003, my students wrote about aliens from other planets, zombies, and the supernatural. Today, they're writing about more serious issues. I think the world has shaped students in a way that they want to express themselves through their writing.

- Barry Sandler

PSYCHOLOGY





Blending Art and Psychology to Help Breast Cancer Survivors

Dr. Jeffrey Cassisi, professor of psychology in the College of Sciences, received the 2024 Elizabeth Hurlock Beckman Award for mentoring MFA student Stacie Becker on pioneering research into the psychological benefits of medical tattooing for breast cancer survivors. Their collaboration led to multiple peer-reviewed publications, tattoo treatments for over 600 survivors, awareness of the lack of research for the impacts of this treatment for breast cancer survivors, and advocacy for insurance coverage of the procedure. The prestigious national award recognizes professors whose guidance has led students to make a significant impact in their communities.



Improving Grant Access and Advancing Cognitive Aging Research

Nichole Lighthall, associate professor of psychology, lab director of UCF's Adult Development and Decision Lab, and associate program director of UCF's Human Factors and Cognitive Psychology Ph.D. Program, was one of three recipients to receive the UCF Office of Research faculty fellowship. From fall 2024 to summer 2025, the three fellows helped strengthen university research initiatives by implementing programs that can improve faculty grant access and accelerate the growth of the research enterprise. As a cognitive neuroscientist working on cognitive aging, Lighthall enhanced UCF's success by securing funding from the National Institutes of Health and expanding its health-related research profile to support her work.



My research explored how decision-making changes with healthy aging and neurodegenerative diseases, with a focus on identifying risk factors for financial exploitation in older adults. Using behavioral and neuroimaging methods, we also examined social and health factors that may increase vulnerability to scams and fraud.

- Nichole Lighthall



RESEARCH & INNOVATION

BIOLOGY

UCF Researchers Advance Critical Coastal Work

UCF biology researchers received two NOAA awards totaling more than \$2.3 million for innovative research on plastic-free restored habitats in coastal shorelines and oyster reefs. Led by UCF Pegasus Professor of Biology and Director of the Coastal and Estuarine Ecology Lab, Linda Walters, and Associate Professor Lisa Chambers, the team will assess how non-plastic substrates perform in promoting reef development while minimizing marine debris, including micro- and nanoplastics, which pose a growing threat to ecosystems and human health.





Through this grant, we're providing opportunities for many students to gain field experience that has the mutual benefit of restoring vital habitats in Florida. A lot of the graduate students whose work is funded through awards like this go on to become our coastal restoration leaders at the state or federal level.

- Linda Walters



UCF Biologist Continues Unraveling Mystery of Magnetic Bacteria

UCF biology professor Robert Fitak developed a DNA database containing hundreds of millions of sequences revealing the presence of a variety of magnetic bacteria in animals. He and his colleagues are using the data to identify potential hosts and explore how the bacteria may affect navigation in species like sea turtles. In collaboration with UCF's Marine Turtle Research Group, Fitak and doctoral student Julianna Martin are collecting sea turtle tear samples to determine the bacteria's broader role in their host.



To date, our results across projects show that these magnetic bacteria seem to be a regular component of many species microbiomes.nHopefully our future work will show whether they are just incidentally gathered from the environment, a functional component of magnetic sensing for a host animal, or for some other unknown reason.

- Robert Fitak



UCF Researchers Develop Nano-Treatment to Protect Mangroves

UCF researchers developed "MagSun," a magnesium and sulfur nanoparticle formula that helps mangroves resist a rising fungal threat. Created by undergraduate Melissa Deinys and graduate assistant Jorge Pereira through UCF professor Swadeshmukul Santra's Materials Innovation for Sustainable Agriculture (MISA) center at UCF, the treatment has inhibited fungal growth by up to 95%. While the disease's cause remains unknown, MagSun offers a promising step toward protecting these crucial coastal ecosystems.

Advancing Juvenile Sea Turtle Knowledge and Conservation Efforts

UCF Marine Turtle Research Group director Kate Mansfield, UCF alumna Katrina Phillips, and LGL Ecological Research Associates senior scientist Nathan Putman studied the dispersal movements of 131 juvenile sea turtles from four species during their early life stage, known as the "lost years." Findings suggest these turtles are active swimmers, not passive drifters, challenging existing hypotheses and providing key insights for conservation. The study is the largest satellite tracking dataset of wildcaught juvenile sea turtles in the Gulf of Mexico from 2011 to 2022.





If sea turtles are occurring on the continental shelf, we suggest renaming this life stage to 'dispersal stage' to account for their behavior. This is an important nuance in their life history, and the new terminology reflects a better understanding of sea turtle behavior, revealing more about these lost years.

- Kate Mansfield



MATHEMATICS



STEM Students Hone Research Skills Through Notable Research Program

Sixty-seven undergraduate STEM students nationwide participated in UCF's Research Experience for Undergraduates (REU) program. UCF's Center for Research in Computer Vision, led by Professor Mubarak Shah, hosts the nation's longest-running REU site, operating continuously for 37 years. College of Sciences students joined cohorts focused on materials for energy applications, conservation, restoration and communication, and applied computational mathematics. The 10- to 12week program offers hands-on lab experience and workshops culminating in final presentations.



As a novice scientist, I learned a huge amount. It's a time for you to get messy and make mistakes. You're doing research, doing workshops and you're learning how the science world works. My advice? Volunteer as much as possible and don't doubt yourself.

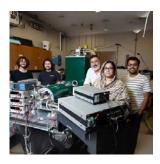
- Otis Woolfolk, COS undergraduate student

PHYSICS



Exploring Martian Terraforming with Nanoparticles

UCF planetary scientist Ramses Ramirez, in collaboration with researchers at the University of Chicago and Northwestern University, analyzed Martian climate models to study the possibility of using Marsbased nanoparticles to warm the atmosphere and make Mars habitable. The cost-effective strategy avoids transporting materials from Earth and could inform future Mars settlement technologies. Ramirez says exploring and terraforming other potentially habitable planets has value beyond settlement, including providing valuable insights into science that could benefit everyday life on Earth.



UCF Researchers Receive Award to Advance Spintronics Technology

A team of researchers led by UCF Pegasus Professor of physics Enrique Del Barco received a \$1.3 million award from the W.M. Keck Foundation to develop materials that allow electricity to move through devices without creating heat, potentially transforming how technology is built and powered. By exploring intrinsic magnetic topological insulator materials, researchers aim to fix the longstanding problem of energy inefficiency in today's electronics and improve their performance.



Keck funds projects that are inherently very high risk, but if successful, could represent a scientific or technological breakthrough of the utmost impact in society. This is certainly the case, as we aim at validating a theoretical proposal by one of our team members that promises a new way of processing information without energy waste.

- Enrique Del Barco

UCF Researchers Develop Rapid Test to Detect Dopamine in Blood



UCF researchers, led by NanoScience Technology Center professor of physics Debashis Chanda, have developed an integrated optical sensor that detects dopamine from unprocessed blood samples. The device could offer a low-cost,

UCF researchers, led by NanoScience Technology Center professor of physics Debashis Chanda, have developed an integrated optical sensor that detects dopamine from unprocessed blood samples. The device could offer a low-cost, efficient screening tool for cancers and neurological conditions such as Parkinson's and Alzheimer's disease, ultimately improving patient outcomes. Building on earlier work, the team replaced cerium oxide nanoparticles with DNA-based aptamers, boosting the sensor's selectivity and enabling direct detection in various biological samples without prior preparation. Chanda says this approach could detect biomolecules, such as proteins, viruses, or DNA, directly from blood, which could be especially valuable in developing countries with limited laboratory access.

Studying Starship Launchpad to Prepare for Lunar Missions

UCF researchers are studying the aftermath of SpaceX's first Starship launch to improve launchpad design on Earth and the Moon. Physics doctoral candidate Brandon Dotson and Florida Space Institute planetary scientist Phil Metzger examined debris from the April 2023 launch, which destroyed the concrete pad. They collected samples from residents affected by the blast and found

that it resembled volcanic cap rock explosion. Their findings will guide future designs by assessing factors like vehicle size, pad materials, and venting systems.



That launch tells us a lot about launching a large vehicle of that class on Earth. Eventually, we're hoping to get to the point where we're launching those super heavy class rockets all the time, and eventually on more complicated planetary surfaces like the moon.

- Brandon Dotson



- H 11-4

SCHOOL OF POLITICS, SECURITY, & INTERNATIONAL AFFAIRS



Inaugural Kurdish Studies Conference Unites Global Experts

The Kurdish Political Studies Program at the School of Politics, Security and International Affairs hosted its first conference on Kurdish studies. The two-day event welcomed national and international guests, including scholars, former diplomats, and U.S. Army generals. College of Sciences Dean Maggy Tomova opened the conference, highlighting UCF's Kurdish Political Studies Program's commitment to advancing research, raising public awareness of Kurdish politics, fostering partnerships with Kurdish communities and universities, and prioritizing student success. The event provided a platform for attendees to gain new knowledge, build connections, and engage in dialogue on complex issues related to Kurdistan.



The conference highlighted the complexities of Kurdish identity, Kurds' relations with their respective states. and their increasing importance in regional and global politics. Engaging in discussions with experts and fellow researchers expanded my knowledge and sparked new ideas.

- Ayşe Betül Çelik, Professor of **Political Science, Sabanci University**



STATISTICS & DATA SCIENCE





Winning the ASA Florida Chapter Meeting 2025 Student Presentation Award is incredibly rewarding. I've been working on my research under the supervision of Dr. Huang for just over a year now, and it was the first opportunity I had to present our methods outside of my dissertation committee.

- Joshua White, big data analytics doctoral student

COS Students Awarded at the American Statistical Association Florida Chapter Meeting

Five statistics and data science students from the College of Sciences earned the Student Presentation Award at the annual American Statistical Association (ASA) Florida Chapter Meeting. Organized by statistics and data science professors Hsin-Hsiung and Suyeon Kang, the event highlighted student research on topics including improved medical technology for disease detection, early-onset Alzheimer's detection, and more. It was also an opportunity for students to network with industry professionals, exchange research insights, and celebrate their achievements.





Leading with Vision: Dean Maggy Tomova's Legacy at COS

Maggy Tomova, UCF's dean of the College of Sciences and vice provost for strategic initiatives, played a pivotal role in advancing student success, research, and faculty excellence while elevating UCF's status as Florida's premier engineering and technology university. During her four-year tenure, the College of Sciences increased its four-year graduation rate from 54% to nearly 70% and research expenditures grew from \$18 to \$33 million. As vice provost, she contributed to university-wide efforts that raised



UCF's overall four-year graduation rate to 60%, up from 54% in 2023. As she begins a new chapter as executive vice president for academic affairs and provost at Augusta University in Georgia, Tomova says she looks forward to UCF's continued innovation, success, and progress toward earning the state's prestigious preeminence designation.



I'm grateful for Dr. Tomova's collaborative spirit and strategic insights that have elevated the College of Sciences and our academic enterprise. We wish her much success on this wellearned next chapter.

- Michael D. Johnson, UCF provost and executive vice president for Academic Affairs

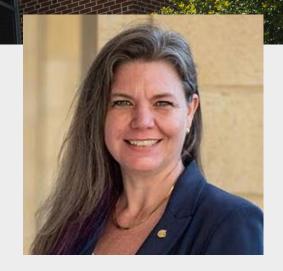


James McCully Reflects on 35 Years at UCF

Over the course of his 35-year career at the University of Central Florida, broadcast technician James McCully has been a force behind the innovation that has enhanced the work and lives of faculty, students, and staff. From his service in the U.S. Air Force to helping build the broadcast studio for the College of Sciences' Nicholson School of Communication and Media. McCullv's career reflects a deep commitment to innovation and student success. As he retires, McCully looks forward to new experiences with his wife, Joanne, and embraces the next chapter of his life with an open mind.

A Career of Impact: Celebrating Associate Dean Teresa Dorman's Contributions to COS

After 29 years of service, the College of Sciences bids farewell to Associate Dean of Undergraduate and Student Affairs, Teresa Dorman. She joined UCF in 1996 where she played a pivotal role reshaping the student experience, creating initiatives, and mentoring advisors, faculty, staff, and students. Her work spanned program development, academic performance, student retention, and overseeing assessment efforts for the dean's office. She also led UCF's Curriculum Alignment Initiative, a faculty-led effort



ensuring academic consistency and smooth transfers for students between UCF and partner institutions. Through her leadership, she helped position countless students for academic and career success. In July 2025, COS recognized her contributions and career success during a retirement celebration.



In kindergarten, I drew a picture of a school crossing guard for 'what do you want to be when you grow up,' I had no idea then that my career really would revolve around helping others find their way.

- Teresa Dorman

STAFF AWARDS

The College of Sciences is dedicated to delivering a world-class education and advancing research and creative work at UCF. Central to this mission is recognizing the outstanding staff whose support makes this success possible.

From September 2024 to June 2025, 41 staff members were honored with the Everyday Excellence Award for their outstanding service and positive impact on colleagues and project outcomes. Between July 2024 and June 2025, 12 staff members received the ACE Award for consistently taking initiative and fostering collaboration across the college.



The college's highest staff honor, the Pinnacle Award, was presented to Jonathan Hendricker, Web Applications Developer II, in recognition of his exceptional performance and 13 years of dedicated service. Hendricker has played a key role in enhancing the college's digital presence by supporting websites across departments, schools, and centers, as well as managing digital signage and helping lead a college-wide transition to a new content management system, expanding access to web publishing throughout COS.



Winning the COS Pinnacle Award has meant so much to me. For most of my time at UCF, I've been the entire web department. This award has fostered a deeper sense of belonging within the college and at UCF.

- Jonathan Hendricker

PARTNERSHIPS & COMMUNITY IMPACT

UCF RESTORES Unveils New Resiliency Command Center to Support Florida's First Responders

UCF RESTORES unveiled its first-of-its-kind Resiliency Command Center, a mobile unit designed to deliver evidence-based behavioral health care to first responders during crises, like natural disasters, mass casualty events, and line-of-duty tragedies. Supported by the Florida Legislature, State Fire Marshal, Lockheed Martin, and UCF, the mobile unit includes private consultation rooms and staff quarters, enabling clinicians to provide trauma-informed care directly at emergency sites. Previously limited to makeshift spaces,



the new unit offers a secure, confidential setting to meet the urgent mental health needs of first responders on the frontlines. "With the UCF RESTORES Resiliency Command Center, we're ensuring that when disaster strikes, the men and women who run toward danger have the resources they need for optimal physical and mental wellness," says Deborah Beidel, Pegasus Professor & UCF RESTORES Director.



2025 Big Data Symposium: Bridging Academia and Industry

The College of Sciences and Department of Statistics and Data Science hosted the Big Data Analytics Symposium 2025, a dynamic, day-long event that brought together students, faculty, and top industry professionals to explore the evolving role of big data in today's marketplace. Attendees learned from and networked with industry experts while exploring career opportunities and real-world applications of data science.



Celebrating 5 Years of UCF Downtown

Since opening in 2019, UCF Downtown has awarded more than 10,300 degrees, strengthening Orlando's community, talent pipeline, and economic vitality. The campus is home to over 20 academic programs, including the Florida Interactive Entertainment Academy, which ranked first in the world among graduate gaming design programs. Philanthropic support from Dr. Phillips Charities, City of Orlando, Orange County Government, and other organizations has played a crucial role in the campus's growth, providing students with invaluable learning, research, and internship opportunities.



Connecting with Central Florida Community at Spark STEM Fest

The UCF College of Sciences showcased its commitment to community outreach, innovation, and STEM education at the Spark STEM Fest, hosted at the Orlando Science Center, in collaboration with the UCF Office of Research. Over three action-packed days, faculty and students came together to present hands-on demos, sparking curiosity and excitement about science for children and adults. This event also provided alumni and future Knights the opportunity to learn more about the COS and its initiatives.



UCF's FIEA Named Among World's Best Game-Design Programs

The Florida Interactive Entertainment Academy (FIEA) at UCF, part of the Nicholson School of Communication and Media, was once again ranked among the world's top graduate game design programs by The Princeton Review and PC Gamer magazine. This honor marks the fifth of the past six years that UCF has received such recognition, reflecting both academic excellence and industry impact. FIEA's world-class programs have helped craft some of the best-selling video games in the world, fueling a \$400 billion industry.



UCF Hosts 2025 FCNC on Cognitive Aging

UCF hosted the annual meeting of the Florida Consortium on the Neurobiology of Cognition (FCNC) on May 8-9, 2025. Themed "Cognitive Aging," the event featured keynote speaker Dr. Carol Barnes from the University of Arizona and showcased research trainees and faculty from across Florida. Over two days, attendees exchanged cutting-edge findings through panel sessions, learned latest discoveries and advancements in neuroscience, and built connections with professionals and researchers from diverse backgrounds—highlighting UCF's leadership in advancing brain health research.



India Center Celebrates Inaugural Endowed Chair and Director

The India Center crested a milestone moment, establishing its inaugural Indian Community Endowed Chair and Director, Yogesh Joshi, Ph.D., in a celebratory Investiture Ceremony. The India Center was established in 2012 with a vision to be the nation's preeminent location for the study of contemporary India's role in the world, providing educational programs, research, and outreach to the Indian community in Florida and beyond.



As we embark on this journey together, my vision for the India Center is ambitious yet clear. We seek to explore and understand contemporary India's role in the world from science and technology to medicine, business, economics, and its role in global affairs.

- Yogesh Joshi

PHILANTHROPY



Day of Giving Milestone Highlights COS Impact

The College of Sciences set a new record during UCF's Day of Giving this year. In just one day, alumni, faculty, staff, students, and friends of the college came together to raise more than \$5.6 million—earning the top spot among all colleges for total dollars raised and accounting for 39% of the university's overall contributions. This generous support will fund academic programs, scholarships, research, student initiatives, and other key priorities—demonstrating the college's strong commitment to helping students excel in their educational and career journeys while driving meaningful impact in the world.

Faculty Member Pays Gratitude Forward Through Endowed Scholarship

Inspired by her students, Senior Lecturer of Communication Michelle Dusseau seized the opportunity to give back by establishing the Dr. Michelle Dusseau Communication and Community Impact Scholarship. Recognizing the financial challenges students face, Dusseau seeks to support those pursuing an education and encourage them to leverage the benefits for meaningful change. The scholarship supports



undergraduate students in the Nicholson School of Communication and Media who are in good academic standing and actively engaged in volunteerism or service learning.



It's in my DNA to give back. My father—Dr. Ray Dusseau—was one of my greatest mentors," says Dusseau. "He encouraged me to think about my career in three 10-to-15-year segments, and this next step for me is that third phase of my career, how I mentor and prepare the next generation of students and teachers.

- Michelle Dusseau

College of Sciences Hosts Annual Scholarship Dinner

The College of Sciences celebrated more than 90 student scholarship recipients and the donors who make their success possible at its annual Scholarship Dinner. Provost Michael D. Johnson congratulated the students for their remarkable dedication, resilience, and ambition in seeking to unleash their potential and pursue their dreams. He also thanked the donors for easing financial burdens and empowering students to achieve their goals. Four scholarship recipients shared remarks, expressing gratitude and reflecting on how the support will help them advance their future careers.



This scholarship has done so much for me—affording me time to prioritize my classes as a biology student here at UCF rather than at work. I will take this gift and continue to give my all towards my education, passions, and working to make a difference for Florida's wildlife.

- Rebecca Hallanan, biology student & Walter K. Taylor scholarship recipient

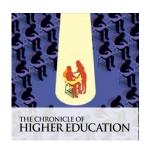






The Best Digital Picture Frames to Bring Your Photos to Life

Digital picture frames have evolved significantly, and physics professor Debashis Chanda offered expert insight into how human eyes interact with screens and what to consider when choosing a frame. He explains that bigger isn't always better. While 2K frames (2,048 x 1,536 pixels) may sound ideal, they often exceed what the human eye can resolve, offering little improvement over 1,600-pixel frames.



The Students Who Help Teach Their Peers

At UCF, where the student-faculty ratio is 28-to-1, large classes can make engagement difficult. To bridge that gap, faculty like chemistry professor Julie Donnelly use undergraduate learning assistants (LAs) to provide a more personalized experience. In her 400-student Chemistry Fundamentals II course, LAs answer questions, guide problem-solving, facilitate activities, and hold office hours. While not new, this approach is gaining traction nationwide as colleges grapple with the demands of large gateway courses.



"Influencer Studies" Break Into the Ivy League

The Hollywood Reporter highlighted UCF's "Social Media as Mass Communication" course as one of several classes nationwide designed for communication students who want to work with or become creators. Taught by senior lecturer Christine Hanlon, the online elective helps students improve LinkedIn profiles, conduct team-based SWOT analyses, and create a target persona and video for a nonprofit organization. Hanlon notes the popular course often has a waitlist and enrolls up to 120 students per section.



Previously Unusable DNA Sample Now Evidence in the Quadruple Murder Trial of N.J. Uncle

UCF chemistry professor and National Center for Forensic Science associate director of research Jack Ballantyne provided expert insights during a pretrial hearing on the use of STRmix software in the case of a New Jersey man accused of murdering four relatives. The software uses "probabilistic genotyping," a method that enables forensic analysts to interpret complex or small DNA samples from up to four individuals—a major advancement that is transforming forensic labs across the U.S.





Why It's So Challenging to Land Upright on the Moon

Philip Metzger, a UCF planetary scientist and former NASA engineer, explained the physics behind the difficulty of keeping lunar landers upright in a post on X. "I've actually gone through calculations, and it's really scary," Metzger said. "The side motion that can tip a lander of that size is only a few meters per second in lunar gravity." One meter per second equals a little more than two miles per hour in American units.



Florida Panthers Deemed Unaffected by Emerging Fatal Genetic **Condition in New Research**

UCF researchers led a study that found Florida panthers are not particularly susceptible to a potentially transmissible disease that causes cognitive decline, leading to death in their prey. The findings abate concerns that this fatal disease, known as chronic wasting disease, is threatening the species. According to Robert Fitak, UCF assistant professor of biology and study co-author, pumas—the common name for panthers in western North America—were introduced to Florida from Texas in the 1990s to help restore the dwindling panther population.



With the Economy Cooling, Companies are Hiring Less and Asking **Employees to do More**

Mindy Shoss, a UCF industrial and organizational psychology professor, gave insights on the widespread burnout—a problem that surged during the pandemic as many Americans left the labor force. She highlighted the mental and physical toll on employees asked to take on additional responsibilities. "When your work increases beyond the point where you have the resources to succeed and successfully do the work...you do get burnout, fatigue, and workers looking for other jobs," she says. "It's a wellbeing crisis, it's a public health crisis, and it's an economic crisis."



UNDERGRADUATE DEGREES

Actuarial Science (BS)

Advertising / Public Relations (BA)

Anthropology

- Anthropological Methods and Practice Track (BA)
- General Track (BA)

Biology

- Ecology, Evolutionary and Conservation Biology Track (BS)
- General Biology Track (BS)
- Marine and Aquatic Biology Track (BS)
- Plant Sciences Track (BS)
- Pre-Health Professional Track (BS)
- Zoology and Pre-Veterinarian Science Track (BS)

Chemistry

- Education Track (BA)
- Industry Track (BA)
- Preprofessional Track (BA)
- Chemistry (BS)
- Biochemistry Track (BS)

Communication

- Business & Professional Track (BA)
- General Communication Track (BA)
- Visual Communication Track (BA)

Communication and Conflict (BA)

Data Science (BS)

Digital Media

- Game Design Track (BA)
- Web and Interactive Media Track (BA)

Film (BA)

Film (BFA)

Forensic Science

- Biochemistry Track (BS)
- Chemistry Track (BS)

Integrated Sciences and Technology

- Integrated Science Education Track (BS)
- Integrated Sciences Track (BS)

International and Global Studies (BA)

Journalism (BA)

Mathematics General (BS)

Media Production and Management

- Media Management and Operations Track (BA)
- Production Track (BA)
- Sports Production Track (BA)

Physics

- Biophysics Track (BA)
- Education Track (BA)
- Information Technology/ Data Science Track (BA)
- Technical Writing Track (BA)
- Astronomy Track (BS)
- Computational Physics Track (BS)
- General Physics Track (BS)
- Materials Physics Track (BS)
- Optics and Lasers Track (BS)

Political Science

- American Politics track (BA)
- Comparative Politics & International Relations track (BA)
- Prelaw Track (BA)
- Intelligence & National Security Track (BA)

Psychology

- Clinical Psychology Track (BS)
- Experimental Track (BS)
- General Track (BS)
- Human Factors Psychology Track (BS)
- Industrial/Organizational Psychology Track (BS)
- Neuroscience Track (BS)

Social Sciences (BS)

Sociology (BA)/(BS)

Statistics (BS)

MINORS

Actuarial Science

Anthropological Archaeology

Anthropology in Multicultural Studies

Anthropology

Anthropology of Pop Culture

Astronomy

Biological Anthropology

Biology

Chemistry

Communication

Crime, Law, and Deviance

Cultural Anthropology

Data Science

Digital Media

Diplomacy

European Studies

Film - Cinema Studies

Geosciences

Global Peace and Security Studies

Global Sociology

Intelligence and National Security

Intercultural Communication

International and Global Studies

Journalism Studies

Magazine Journalism

Mass Culture and Collective Behavior

Mass Media

Mathematical Biology

Mathematics

Medical Anthropology

Medical Sociology

Native American Studies

Physics

Political Science

Political Science / Prelaw

Psychology

Social Structures and Opportunity

Sociology

Spatial Sociology

Statistics

Strategic Communication

Terrorism Studies

UNDERGRADUATE CERTIFICATES

Anthropology of Global Health

Behavioral Forensics

Civics Teaching

Diplomacy

Health Communication

Hispanic/Latino Media

Human Biology

Intelligence and National Security

Kurdish Studies

Native American Studies

Politics of Race, Ethnicity, Gender, and Identity

Public Relations in Sport

Strategic Communication

GRADUATE DEGREES

MA / MS / MFA

Anthropology (MA)

Biology (MS)

Chemistry (MS)

• Forensic Science Track

Clinical Psychology (MA)

- Applied Pre-Licensure Non-Thesis Track
- Research Thesis Track

Communication (MA)

Digital Media (MA)

Feature Film Production (MFA)

Industrial and Organizational Psychology (MS)

Interactive Entertainment (MS)

Mathematical Science (MS)

- Financial Mathematics Track
- Industrial Mathematics Track

Physics (MS)

• Planetary Sciences Track

Political Science (MA)

Sociology, Applied (MA)

- Domestic Violence Track
- Medical Sociology Track

Statistics and Data Science (MS)

• Data Science Track

PhD

Big Data Analytics (PhD)

Statistics Track

Chemistry (PhD)

Clinical Psychology (PhD)

Human Factors and Cognitive Psychology (PhD)

Industrial and Organizational Psychology (PhD)

Integrative and Conservation Biology (PhD)

Integrative Anthropological Sciences (PhD)

Mathematics (PhD)

• Financial Mathematics Track

Physics (PhD)

Planetary and Space Sciences (PhD)

Security Studies (PhD)

Sociology (PhD)

Strategic Communication (PhD)

GRADUATE CERTIFICATES

Corporate Communication

Data Modeling

Financial Mathematics

Intelligence and National Security

Mathematical Science

Network Analysis and Applications

Research Smarts

SAS Data Mining

Survey Research

LEADERSHIP

Joshua Colwell

Interim Dean & Pegasus Professor

Maggy Tomova*

Dean & Vice Provost for Strategic Initiatives

Kerstin Hamann

Senior Associate Dean & Pegasus Professor

Teresa Dorman*

Associate Dean

Nichole Lighthall

Interim Associate Dean, Research & Facilities

Sandra Wheeler

Assistant Dean, Undergraduate Programs & Student Affairs

Sultana Ali

Director, Marketing & Communications II

Seresa Cruz

Finance/Budget Director III

Stephanie Heron

Director, Human Resources

ADVANCEMENT

Anthony Pomonis*

Executive Director, Advancement

Chelsea Piner

Director, Advancement

UNDERGRADUATE SERVICES

Lee Anne Kirkpatrick

Director, Undergraduate Services

SCHOOLS & DEPARTMENTS

Nan Yu

Interim Director, Nicholson School of Communication & Media

Bruce Wilson

Director, School of Politics, Security, & International Affairs

Tv Mateiowsky

Chair, Department of Anthropology

*Served on leadership team during the 2024-25 academic year

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Chair, Department of Biology

Shengli Zou

Interim Chair, Department of Chemistry

Zixia Song*

Chair, Department of Mathematics

F. Eloy Hernandez

Director, Departments of Mathematics, Statistics, & Data Science

Addie Dove

Chair, Department of Physics

Florian Jentsch*

Chair, Department of Psychology

Mark Neider

Interim Chair, Department of Psychology

Jason Ford

Chair, Department of Sociology

Shunpu Zhang*

Chair, Department of Statistics & Data Science

CENTERS, INSTITUTES & INITIATIVES

James Bacchus

Director, Center for Global Economic & Environmental Opportunity

Yogesh Joshi

Director, India Center

Thomas Dolan

Director, Intelligence Community Center for Academic Excellence

Melissa Dagley

Director, iSTEM

Mehmet Gurses

Director, Kurdish Political Studies Program

Stephen Masyada

Director, Lou Frey Institute

Jake Ballentvne

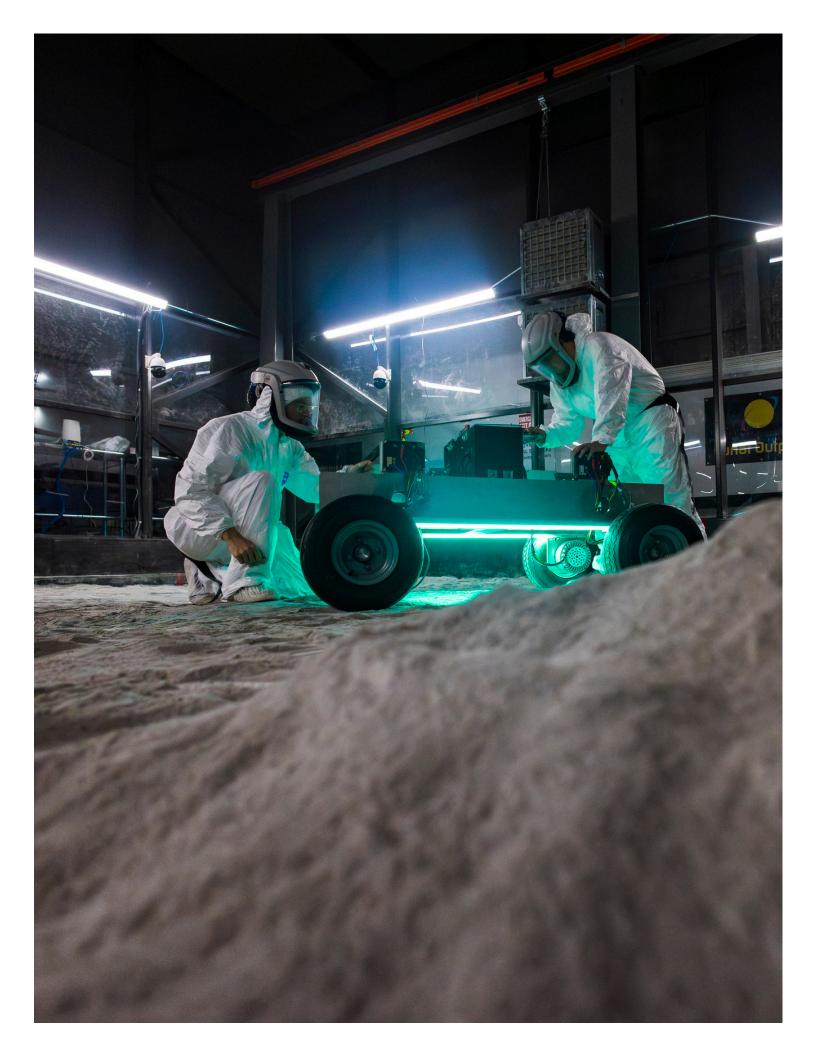
Interim Director, National Center for Forensic Science

Richard Jerousek

Director, The Robinson Observatory

Deborah Beidel

Director, UCF RESTORES







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