CREOL

THE COLLEGE OF OPTICS AND PHOTONICS
UNIVERSITY OF CENTRAL FLORIDA

2025-2026 ANNUAL REPORT



UCF

Annual Report Period:
July 2025 - June 2026

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Annual Report Compilation:
Arin Partington
Director of Partnerships, Marketing, and Communications

COLLEGE LEADERSHIP

2025-2026 EXECUTIVE COMMITTEE



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Associate Dean for Academic Programs, Professor of Optics & Photonics and Electrical & Computer Engineering



Eric Johnson
Interim Associate Dean for Research, Professor and Florida Photonics Center of Excellence Nanophotonics Chair



Stephen Eikenberry
Professor, Optics & Photonics and Physics



Andrea Blanco-Redondo
Florida Photonics Center of Excellence Endowed Professor of Optics and Photonics



Konstantin Vodopyanov
21st Century Scholar Chair Professor, Optics & Photonics and Electrical & Computer Engineering



Mark Wagenhauser
Finance Director

DEAN'S EXTERNAL ADVISORY COUNCIL

Chair:
Clara Rivero-Baleine '01, '03MS, '05PhD
Lockheed Martin Missiles and Fire Control

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L3Harris Technologies

Zhibing Ge '04MS, '07PhD

Alexei Glebov
OptiGrate – IPG Photonics

Carl Kutsche '98PhD
Idaho National Laboratory

Jim McNally
StratTHNK Associates

Brian Lawrence '97PhD
Vapotherm

Ty Olmstead '11PhD
Ocean Optics

Teresa Pace
L3Harris Technologies

Alan Symmons
iRhythm Technologies, Inc.

Terry Barchfeld
Physics teacher, Orange County Schools

Rick Plympton
Corporate Fellow at Optimax Systems, Inc.

Marc Himel
Colorfulsky Corp.

Michael Davis
Northrop Grumman Mission Systems

DEAN'S INTERNAL ADVISORY COUNCIL

Debasmita Banerjee
Graduate Student

Andrea Blanco-Redondo
Professor

Katie Connolly
HR Coordinator

Ivan Divliansky
Research Associate Professor

Joshua Hendry
Undergraduate Student

Jasen Szekeley
Undergraduate Student

Christopher Kosan
Graduate Student

Lawrence Lipe
Graduate Admissions Specialist

Abbas Shir
Postdoctoral Researcher

MESSAGE FROM THE DEAN



It is my pleasure to introduce the 2025–2026 CREOL Annual Report. This past year was another period of continued growth and achievement for our college at a time when optics and photonics are becoming increasingly important to the global economy.

SPIE's 2025 Global Industry Report estimates that photonics-enabled products generated more than $2.5 trillion in global revenue and supported over 5 million jobs in 2024. As light-based technologies advance fields including artificial intelligence, communications, healthcare, manufacturing, defense, and quantum science, CREOL continues to prepare the scientists and engineers who will lead this growing industry.

Enrollment at CREOL has now surpassed 400 students between our undergraduate and graduate programs. We also celebrated our largest-ever bachelor's graduating class, with 44 students earning degrees in Photonic Science and Engineering.

These graduates are entering a field with strong professional opportunities. SPIE's 2025 Global Salary Report found a median salary of $103,250 among professionals with optical engineering degrees, while U.S. professionals with less than one year of experience reported a median salary of $97,410. In North America, professionals with multiple advanced degrees earn 66% more than those with only a bachelor's degree. As demand for skilled optics and photonics professionals continues to grow, CREOL must also expand its capacity to educate and prepare them.

To support our growing programs, we welcomed two outstanding faculty members. **Paul Leisher** joined CREOL as a professor following a distinguished career spanning industry, government research and academia. His expertise will strengthen our capabilities in high-power semiconductor lasers. I am also pleased to announce that **Maryam Mahmoodi** joined us as CREOL's first instructional faculty member. As a lecturer specializing in space photonics, she will teach within our existing programs while developing a new curriculum in this rapidly expanding field.

Despite uncertainty in the federal funding landscape, our faculty secured more than $18.6 million in research funding, slightly more than the previous year. Among this year's achievements, **Alexander Khanikaev** received a $3 million NSF-AFRL award to lead a multi-institutional effort developing a new class of quantum devices.

This progress is strengthened by the generosity of our Industrial Affiliates, alumni, faculty and friends, who helped CREOL raise nearly $600,000 in philanthropic support this year. **Jim and Lynn Moharam** established another *Founding Faculty Graduate Fellowship*, and recent alumna **Hannah Pierson** created the *Whimsical Engineer Endowed Scholarship* to support future undergraduate students. Together, these public, private and philanthropic investments help CREOL advance research while creating opportunities for the next generation of optics and photonics leaders.

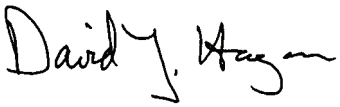
Our faculty, students and alumni also received significant recognition this past year. **Bahaa Saleh, Peter Delfyett** and **Shin-Tson Wu** received prestigious SPIE Society Awards for their contributions to education, high-speed optics and diffractive optics. Alumna **Linghui Rao** received the Society for Information Display's Peter Brody Prize, while **Clara Rivero-Baleine** was inducted into the Florida Inventors Hall of Fame. **Gisele Bennett** was elected president of Optica and honored as CREOL's 2026 Distinguished Alumna.

We also congratulate **Swati Bhargava**, who was named CREOL Student of the Year and received UCF's highest student honor, the Order of Pegasus, as well as **Mike McKee**, who received a UCF Employee Excellence Award.

Our commitment to developing the future workforce extends beyond our current students. CREOL continued its Laser and Photonics Summer Camp and Teacher Ambassador Program, while **Alexander Khanikaev** led the second Science for Ukraine program. Supported by the Simons Foundation and the Office of Naval Research, the program provided 30 Ukrainian high school students with an immersive research experience.

As you explore this Annual Report, please join me in celebrating the accomplishments of our faculty, students, alumni, staff and partners. Together, we are advancing discovery, preparing the workforce and strengthening the partnerships that will move optics and photonics forward.

Thank you for your continued support as we Light the Way Forward!



David J. Hagan, Ph.D.
Dean and Director
Pegasus Professor of Optics and Photonics

Sources: SPIE, *2025 Optics & Photonics Global Industry Report*, https://spie.org/community-support/industry-resources/global-industry-report
SPIE, *2025 Optics & Photonics Global Salary Report*, https://spie.org/news/2025-global-optics-and-photonics-salary-survey

2025-26 AWARDS



EXTERNAL AWARDS & HONORS

FACULTY

Bahaa E. A. Saleh
- *2026 SPIE María J. Yzuel Educator Award*
- *2025 BACUS Prize, SPIE*

Miguel A. Bandres
- *2025 Rising Star, Academy of Science, Engineering and Medicine of Florida*

Garima Bawa
- *2026 Optica Ambassador*

Peter Delfyett
- *2026 SPIE Harold E. Edgerton Award in High-Speed Optics*

Sasan Fathpour
- *2026 SPIE Fellow*

Kathleen Richardson
- *2026 Otto Schott Research Award, Ernst Abbe Fund*

Leland Nordin
- *2026 Air Force Office of Scientific Research Young Investigator Program Award*

Shin-Tson Wu
- *2026 SPIE Dennis Gabor Award in Diffractive Optics*
- *2026 IEEE Photonics Society Aron Kressel Award*

STUDENTS

Debasmita Banerjee
- *McMurtry Paper Prize, Optica Siegman International School on Lasers*
- *2025 Rising Technical Contributor Award, Society of Women Engineers*
- *STEM Category Winner, Adobe Digital Edge Awards*
- *2026 SPIE Optics and Photonics Scholarship*

Swati Bhargava
- *McMurtry Paper Prize Honorable Mention, Optica Siegman International School on Lasers*

Yuqiang Ding
- *IEEE Orlando Section Outstanding Graduate Scholarship*
- *Third Place, SPIE AR/VR/MR Optical Design Contest*
- *SPIE Optics and Photonics Scholarship*

Francisco Hernandez
- *National Defense Science and Engineering Graduate Fellowship*

Zhenyi Luo
- *IEEE Orlando Section Outstanding Graduate Scholarship*
- *SPIE Optics and Photonics Scholarship*

Yizhou Qian
- *IEEE Orlando Section Outstanding Graduate Scholarship*
- *SPIE Optics and Photonics Scholarship*

Qian Yang
- *Best Student Paper, Society for Information Display*

Vinzenz Zimmermann
- *2026 SPIE Optics and Photonics Scholarship*

ALUMNI

Linghui Rao ’12PhD
- *Peter Brody Prize, Society for Information Display*

Clara Rivero Baleine ’01, ’03MS, ’05PhD
- *2026 Florida Inventors Hall of Fame Inductee*

Layton Hall ’22MS, ’23PhD
- *Frederick Reines Distinguished Postdoctoral Fellowship, Los Alamos National Laboratory*

UCF AWARDS & HONORS

FACULTY

Peter Delfyett
- *2025 UCF SpaceU Life Achievement Award*

STUDENTS

Swati Bhargava ’25MS
- *2026 Order of Pegasus*

Tara Crowe ’25MS
- *2025 UCF SpaceU Student Space Research Award*

Dimitri Konov
- *First Place, UCF Postdoc 4MAT Competition*

Jacob Silver
- *2026 College Founders’ Award*
- *Member of the Burnett Honors College*

SERVICE TO UCF

David Hagan
- *40 years of service*

Shin-Tson Wu
- *25 years of service*

Lawrence Lipe
- *5 years of service*

Mike McKee
- *2026 Employee Excellence Award for Student Success*

Otto Argibay
- *2026 Employee Excellence Award Nominee*

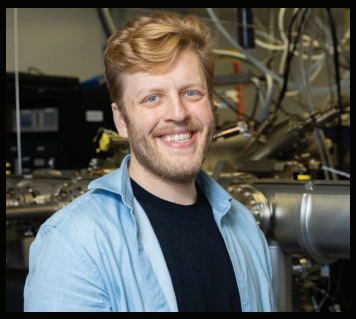
Denise Whiteside
- *2026 Employee Excellence Award Nominee*

Amy Perry
- *2026 Employee Leadership Excellence Award Nominee*



Kathleen Richardson, Otto Schott Research Award

READ MORE



Leland Nordin, Young Investigator Program (YIP) Award

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CREOL AWARDS & RECOGNITION

FACULTY

Sasan Fathpour

- *Excellence in Graduate Teaching, College Awardee*

Romain Gaume

- *Excellence in Research, College Awardee*

Peter Delfyett

- *Excellence in Undergraduate Teaching, College Awardee*

Miguel Bandres

- *Teaching Incentive Program Award (TIP)*

Romain Gaume

- *Research Incentive Award (RIA)*

STUDENTS

Swati Bhargava

- *CREOL Student of the Year*

Pooja Kulkarni

- *CREOL Student of the Year Finalist*

Hosna Tajvidi Safa

- *CREOL Student of the Year Finalist*

Gabriel "Gabe" Skowronek

- *Industrial Affiliates Symposium Best Elevator Pitch Award*

ALUMNI

Gisele Bennett '87BS, '89MS

- *2026 CREOL Distinguished Alumna*

CREOL SCHOLARSHIPS

SOILEAU FAMILY-SPIE OPTICS AND PHOTONICS UNDERGRADUATE SCHOLARSHIP

- *Khamari Codner*
- *Logan Dain*
- *Jeremy Goodenough*
- *Leilani Jones*
- *Edward Perez*
- *Celine Rondon*
- *Brendan Wilson*
- *James Young*

NORTHROP GRUMMAN UNDERGRADUATE SCHOLARSHIP

- *Sophia Adams*
- *Gage Anderson*
- *Chad Jordan*

THE GE AND WU SCHOLARSHIP FOR CREOL

- *Edward Perez*

LUMENTUM ENDOWED SCHOLARSHIP

- *Alejandro Rodriguez*

CREOL FELLOWSHIPS

SPIE-GLEBOV FAMILY OPTICS AND PHOTONICS GRADUATE FELLOWSHIP

- *David Patenaude*
- *Ziyang Shen*
- *Youngeon Lee*

GEORGE STEGEMAN MEMORIAL ENDOWED FELLOWSHIP

- *Jake Klucinec*
- *Jeremy Grove*

WILLIAM C. SCHWARTZ ENDOWED GRADUATE FELLOWSHIP

- *Peter Crisileo*
- *Stephan Nigohosian*

INDUSTRIAL AFFILIATES GRADUATE FELLOWSHIP

- *Vincent Miller*

NORTHROP GRUMMAN GRADUATE FELLOWSHIP

- *Nicholas Raden*
- *Charles Hardin*



MIGUEL A. BANDRES NAMED 2025 ASEMFL RISING STAR

The honor recognizes early-career researchers whose innovation and scholarly achievements are advancing science, engineering, and medicine in Florida.

CREOL Assistant Professor Miguel A. Bandres has been named a 2025 Rising Star by the Academy of Science, Engineering and Medicine of Florida (ASEMFL), joining just 22 scholars and professionals statewide, and one of only two UCF faculty members, to receive the distinction this year.

Bandres' research explores new ways to control light and apply those discoveries to next-generation photonic technologies, including lasers, waveguides, optical fibers, imaging systems, and optoelectronic devices. His pioneering contributions to topological photonics, laser resonators, and structured light have helped create more robust optical devices while opening new possibilities for faster communications, advanced imaging, and future photonic systems.

The ASEMFL Rising Stars program recognizes outstanding early-career faculty and professionals across Florida whose research demonstrates exceptional promise in addressing critical scientific, engineering, and medical challenges. This year, a panel of experts evaluated 168 nominees before selecting the 22 honorees.

"I'm honored by this recognition and grateful to my students and collaborators," Bandres says. "We're driven by curiosity about how to control light in new ways and by the promise that these discoveries can enable the next generation of optical technologies in Florida and beyond."



UCF'S OPTICS PROGRAM *RANKED AMONG THE NATION'S BEST*

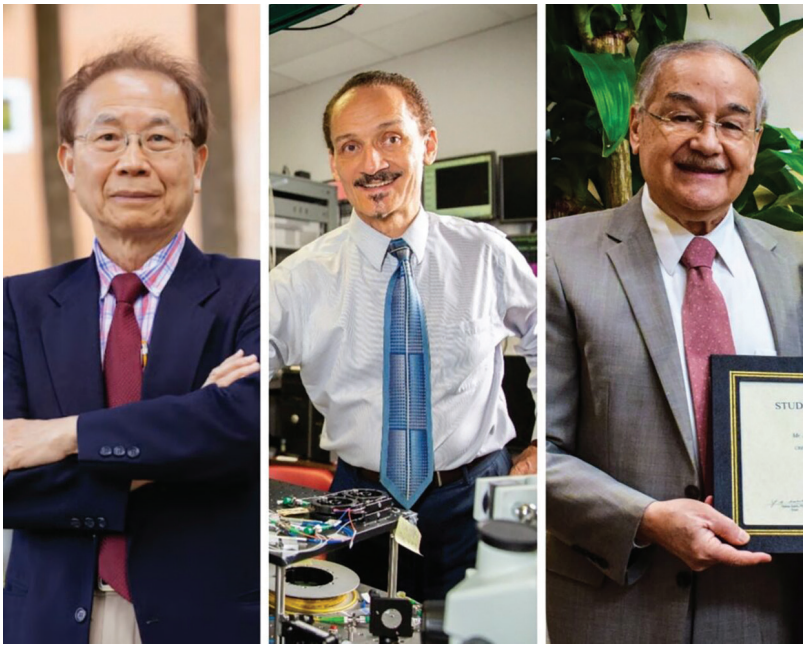
U.S. News & World Report continues to recognize CREOL, The College of Optics and Photonics, as one of the nation's premier optics programs. In the latest rankings, CREOL was named as a Top 5 public university for optics and within the Top 9 overall among all U.S. universities.

U.S. News & World Report also ranked the University of Central Florida as the No. 15 Most Innovative University in the nation, reflecting UCF's continued leadership in advancing research, technology, and student success.

CREOL plays a central role in that innovation. During FY 2026, the college secured more than $18.6 million in external research funding, supporting pioneering research across areas including quantum technologies, advanced lasers, integrated photonics, optical materials, imaging, and space technologies. The Bachelor of Science in Photonic Science and Engineering remains the only program of its kind in Florida and one of only a handful of accredited programs in the nation.

"I'm proud that CREOL continues to set the standard for excellence in optics and photonics," said Dean David Hagan. "Among U.S. universities that grant degrees in optics, UCF ranks first—a reflection of the exceptional work of our faculty, students, researchers, and alumni. As we continue to expand our faculty and grow our research programs, we are creating new opportunities for discovery, innovation, and impact while preparing the next generation of optics and photonics leaders."

Shin-Tson Wu, Peter Delfyett, and Bahaa Saleh



THREE CREOL PROFESSORS RECEIVE PRESTIGIOUS SPIE HONORS

Three CREOL faculty members were recognized with 2026 Society Awards from SPIE, one of the world's leading professional organizations for optics and photonics. The awards honor significant technical achievements and outstanding service that advance the science and application of light-based technologies.

Shin-Tson Wu received the **SPIE Dennis Gabor Award in Diffractive Optics** for pioneering contributions to liquid crystal polarization volume gratings that have enabled advances in augmented and virtual reality displays.

Peter J. Delfyett received the **SPIE Harold E. Edgerton Award in High-Speed Optics** for his pioneering work in low-noise, high-power ultrafast semiconductor lasers and their commercial applications.

Bahaa Saleh received the **SPIE María J. Yzuel Educator Award** in recognition of his lifelong contributions to education in optics, photonics, and image science through his teaching, mentorship, and widely used textbooks.

Together, the honors underscore CREOL's continued leadership in research, innovation, and education while reflecting the global impact of its faculty across the optics and photonics community.

NEW PROFESSOR BRINGS INDUSTRY LEADERSHIP TO CREOL



CREOL welcomed **Paul Leisher** as Professor of Optics and Photonics in 2025, bringing more than 20 years of experience spanning industry, government research, and academia.

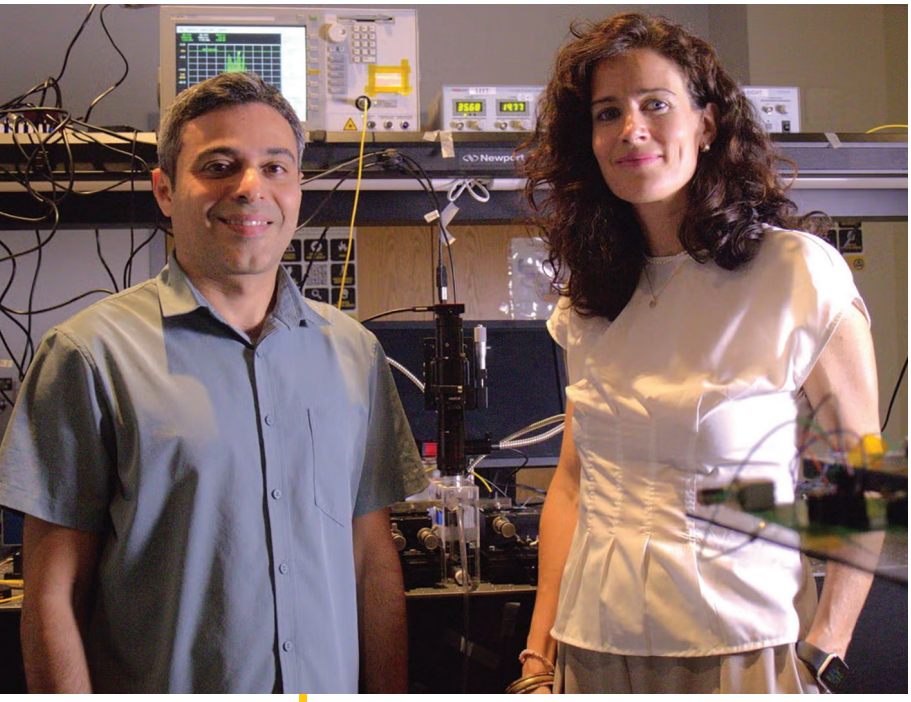
Before joining CREOL, Leisher held leadership roles at Luminar Technologies, Freedom Photonics, Lawrence Livermore National Laboratory, and nLight, where he led groundbreaking work in high-power semiconductor lasers and secured more than $30 million in research funding. At CREOL, he now teaches the undergraduate Senior Design sequence while leading research focused on the design, fabrication, and characterization of high-power semiconductor lasers.

CREOL WELCOMES FIRST DEDICATED LECTURER



Maryam Mahmoodi joined CREOL in December 2025 as the college's first lecturer, a new role dedicated primarily to teaching and supporting student learning. She brings a strong background in photonics, optical engineering, and biomedical imaging, including more than three years as a postdoctoral research associate at Purdue University. Mahmoodi earned her Ph.D. in photonics from Shahid Beheshti University, where she was recognized as a Distinguished Doctoral Graduate.

CREOL RESEARCHERS ADVANCE ROBUST, SCALABLE QUANTUM TECHNOLOGIES



Amin Hashemi Shahraki '24MS, Andrea Blanco-Redondo

Quantum computers promise to revolutionize fields ranging from medicine and cybersecurity to finance and artificial intelligence by solving problems beyond the capabilities of today's most powerful computers. One of the greatest obstacles, however, is the fragile nature of quantum information. Even the smallest imperfections can cause quantum states to break down, limiting the development of practical quantum technologies.

Researchers at CREOL are helping overcome that challenge. Led by Associate Professor **Andrea Blanco-Redondo**, the Quantum Silicon Photonics research group is exploring new ways to generate, manipulate, and protect quantum states of light, paving the way for more reliable and scalable quantum systems.

In 2025, the team demonstrated that optical loss, traditionally considered one of the biggest challenges in photonic devices, could instead be carefully engineered to make quantum states of light more robust. By harnessing principles of topological photonics, the researchers showed that quantum information could remain protected even in the presence of imperfections, challenging long-held assumptions about how light behaves in quantum systems.

Building on that breakthrough, the team achieved another milestone in 2026 with the publication of research in *Science* demonstrating a new method for creating scalable, high-dimensional quantum entanglement using photonic structures. Their approach enables multiple quantum states to be generated and protected simultaneously, an important step toward practical quantum computers, ultra-secure communication networks, and next-generation quantum sensors.

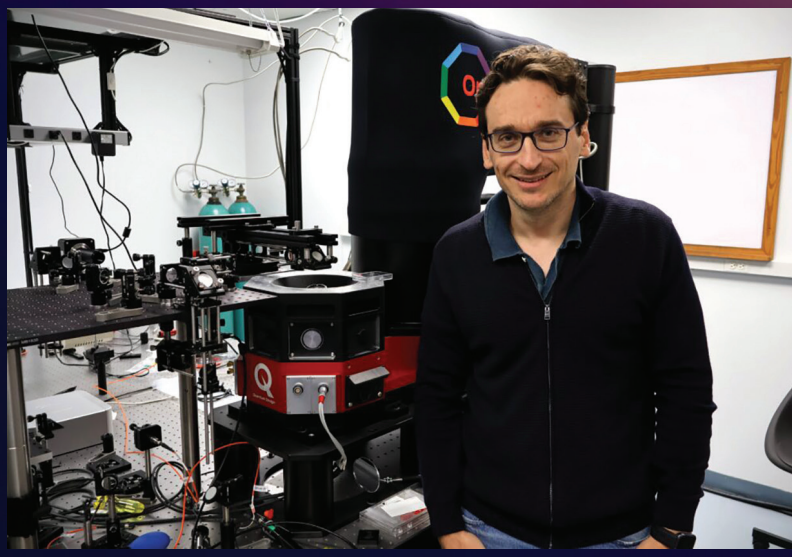
"We had shown the fundamental piece, but we didn't know how to scale up," Blanco-Redondo says. "What we have shown with this new method is a scalable way to generate more and more complex entangled states, maintaining topological protection of those entangled states."

Together, these discoveries represent significant progress toward practical quantum technologies while reinforcing CREOL's growing leadership in quantum photonics. Through continued innovation and collaboration, researchers are helping unlock new possibilities for computing, communications, sensing, and other transformative technologies powered by light.

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UCF LEADS $3M CHARGE INTO A NEW QUANTUM FRONTIER



CREOL is helping shape the future of quantum technology through a groundbreaking, multi-institutional research initiative aimed at creating an entirely new class of quantum devices.

Led by Professor **Alex Khanikaev**, the **$3 million NSF–AFRL REFLEQTS project** brings together researchers from UCF, the University of Rochester, the University of Pennsylvania, and the City University of New York to explore how materials that evolve over time can unlock new possibilities for quantum computing, communication, and sensing. By introducing the dimension of time into photonic materials, researchers hope to generate and manipulate complex quantum states of light in ways that are impossible with conventional materials.

The project builds on CREOL's growing portfolio of quantum research and strengthens UCF's position as a leader in quantum photonics. Working alongside faculty across the college, Khanikaev's team is advancing technologies that could one day enable quantum communication networks, lightweight quantum sensors, and more practical quantum devices for real-world applications.

"This is a combination of really exciting new science and emergent applications," Khanikaev says. "It will allow CREOL to strengthen our position as leaders in quantum photonics and quantum optical sciences in Florida, and it will be a tremendous addition to the ongoing efforts and investments made by UCF in quantum in recent years."

Beyond its scientific impact, the REFLEQTS initiative supports the growth of CREOL's broader quantum ecosystem by expanding collaborative research, attracting new funding opportunities, and providing students with hands-on experience at the forefront of quantum science and engineering. As CREOL continues to invest in quantum research, projects like REFLEQTS are helping lay the foundation for the next generation of transformative technologies.

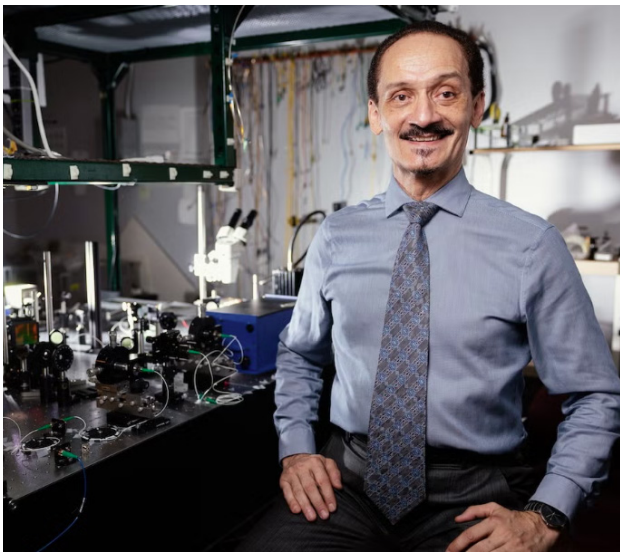
"This is a combination of really exciting new science and emergent applications. It will allow CREOL to strengthen our position as leaders in quantum photonics and quantum optical sciences in Florida..."

— Alex Khanikaev

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MAKING NEWS

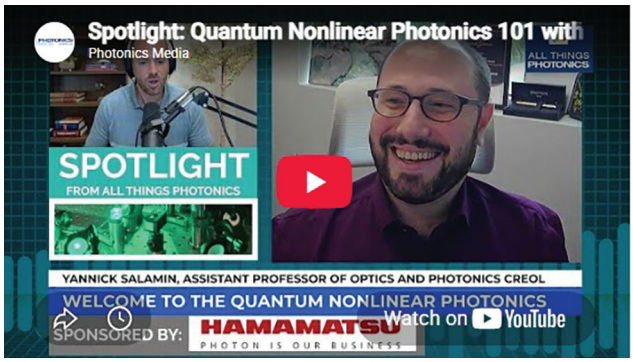
WITH EVERYTHING HAPPENING AT CREOL, IT'S NO SURPRISE FACULTY AND STUDENTS ARE OFTEN FEATURED IN NEWS ARTICLES, PODCASTS, AND TV SEGMENTS. FOR MORE IN-DEPTH COVERAGE ON EACH STORY, VISIT CREOL.UCF.EDU/NEWS



Professor **Peter Delfyett** was featured in a pregame radio interview with Marc Daniels on 96.9FM The Game and 740AM WYGM.



WUCF's Florida Road Trip visited CREOL to interview Professor **Peter Delfyett** and tour the Advanced Photonic Devices lab run by Assistant Professor **Leland Nordin** and his research group.

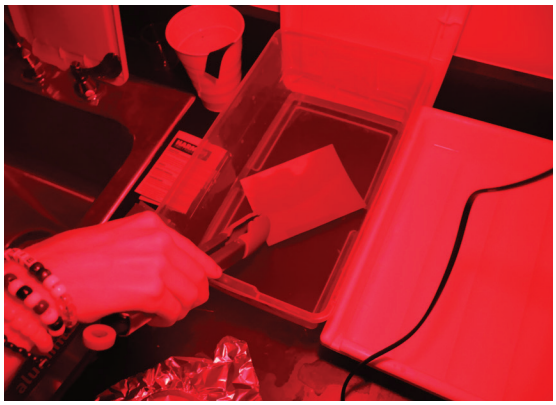


Associate Professor Yannick Salamin joined the "All Things Photonics"® podcast to give a crash course on quantum nonlinear photonics and discuss how his newly formed research group aims to advance it.



Mike McKee, Associate Director, Academic Support Services, and high school student Griffin Whiteside discussed UCF CREOL's Laser and Photonics Summer Camp on the "All Things Photonics"® podcast.







PHOTONICS SUMMER CAMP CONTINUES TO GROW THE NEXT GENERATION OF OPTICS LEADERS

CREOL's Laser and Photonics Summer Camp returned for its third year in 2025, welcoming approximately 50 high school students from Central Florida and around the world to explore the science of light through hands-on learning. Building on the success of the program's expansion in 2024, students once again participated in three week-long sessions featuring laboratory activities, faculty presentations, and student-led demonstrations.

Throughout the camp, students built telescopes and pinhole cameras, learned soldering techniques, toured CREOL laboratories and Valencia College's photonics program, and discovered the wide range of careers available in optics and photonics. The program also introduced participants to Florida's only bachelor's degree in Photonic Science and Engineering, helping raise awareness of a rapidly growing field with strong workforce demand.

Under the leadership of Undergraduate Associate Director **Mike McKee**, senior **Kiva McCracken**, and Orange County Public Schools teachers **Bill Young** and **Jorge Vallin**, the camp continues to strengthen CREOL's outreach efforts while inspiring future engineers and scientists. The program also built upon CREOL's inaugural Teacher Ambassador Program, expanding opportunities for educators to bring photonics concepts back to their classrooms and introduce even more students to careers in optics and photonics.

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SCIENCE FOR UKRAINE PROVIDES HOPE THROUGH EDUCATION

CREOL Professor **Alex Khanikaev** helped lead the second Science for Ukraine program in summer 2025, bringing 30 high school students from the Ukraine Physics and Mathematics Lyceum to the United States for an immersive research experience after years of disruption caused by the war.

Supported by the Simons Foundation and the Office of Naval Research, the program gives talented STEM students the opportunity to work alongside researchers, conduct hands-on experiments, and experience university life in the United States. Participants explored topics including wave phenomena, polarization, interferometry, and two-dimensional materials before presenting their research findings at the conclusion of the program.

The initiative also provided valuable leadership experience for CREOL graduate students, who served as mentors while helping organize laboratories, supervise research projects, and guide students through the scientific process. Beyond the laboratory, the program introduced participants to the U.S. higher education system and encouraged them to pursue future opportunities in science and engineering.

"This is a way to give kids hope for the future," Khanikaev says.

Through programs like Science for Ukraine, CREOL continues to demonstrate its commitment to advancing science while fostering global collaboration, mentorship, and educational opportunity.

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INDUSTRIAL AFFILIATES SYMPOSIUM CONNECTS RESEARCH, INDUSTRY, AND THE FUTURE OF PHOTONICS

Nearly 300 attendees from around the world gathered at CREOL for the 2026 Industrial Affiliates Symposium, the college's premier annual event bringing together leaders from academia, industry, and government to explore emerging opportunities in optics and photonics. This year's symposium highlighted two rapidly growing fields, biomedical photonics and quantum technologies, while showcasing Florida's expanding role as a hub for photonics innovation.

Over three days, attendees participated in technical presentations, networking events, lab tours, and student research activities designed to strengthen collaboration between CREOL and its Industrial Affiliates. More than 150 students connected with employers during the Spring Optics and Photonics Career Fair, toured research laboratories, and attended a distinguished lecture by Mikhail Lukin of Harvard University and QuEra Computing before networking with industry representatives at the annual Affiliate-Student Mixer.

The technical program featured keynote presentations from Bruce Tromberg, Director of the National Institute of Biomedical Imaging and Bioengineering at the National Institutes of Health, alongside presentations from CREOL faculty and industry leaders. Dean David Hagan shared updates on the college's continued growth, while Professor Aristide Dogariu highlighted advances in biomedical photonics, and Professor Andrea Blanco-Redondo presented CREOL's expanding Quantum Leap Initiative. CREOL alumnus Jason Eichenholz '95MS '98PhD, founder and CEO of Relativity Networks, returned to discuss the future of advanced optical networking, while Gisele Bennett '87 '89MS, 2026 Optica President, provided an industry update during the symposium.

The symposium also celebrated the achievements of the CREOL community. Graduate students participated in the inaugural Student Poster Elevator Pitch Competition, delivering 45-second presentations of their research to conference attendees. The event concluded with recognition of Gabriel Skowronek, winner of the poster competition, Swati Bhargava, named 2025–2026 Student of the Year, and Gisele Bennett, who was honored as CREOL's 2026 Distinguished Alumna. Together, the symposium demonstrated the strength of CREOL's partnerships and its commitment to preparing the next generation of leaders in optics and photonics.

INDUSTRY

SYMPOSIUM BY THE NUMBERS

~300
ATTENDEES

150+
STUDENTS AT THE CAREER FAIR

29
STUDENT POSTER ELEVATOR PITCH PRESENTERS

3
DAYS OF TECHNICAL SESSIONS & NETWORKING

INDUSTRY, GOVERNMENT & ACADEMIC LEADERS FROM AROUND THE WORLD



Winston Schoenfeld, Professor, Optics & Photonics; Vice President for Research UCF; Jason Mahon, Deputy Secretary of Economic Development & Chief Manufacturing Officer at Florida Department of Commerce; Jason Eichenholz, Founder & CEO, Relativity Networks

DISTINGUISHED SPEAKER

New Frontier of Quantum Computing
Mikhail Lukin, Harvard University; QuEra Computing, Inc.

BIOMEDICAL OPTICS

Optical Technologies: New opportunities for accelerating innovation in biomedical research
Bruce Tromberg, Director, National Institute of Biomedical Imaging and Bioengineering, National Institutes of Health

Biophotonics: from effective diagnostics to untraditional biomarkers
Aristide Dogariu, UCF Trustee Chair / Pegasus Professor of Optics and Photonics at CREOL

INDUSTRY FOCUS

Optica Industry Update
Gisele Bennett, President, Optica and 2026 CREOL Distinguished Alumnus Award Honoree

SPIE Industry Update
John Yoon, Director of Technology Outreach, SPIE

Light, Speed, and Scale: How Hollow Core Fiber Solves the AI Infrastructure Crisis
Jason Eichenholz, Founder and CEO, Relativity Networks

Company Spotlight Presentations
Optikos, The Optical Engineering Experts Keysight

STUDENT OF THE YEAR TALK

Observation of Topological Flat Band States in Photonic Lattices
Swati Bhargava, CREOL Doctoral Student

FLORIDA QUANTUM INITIATIVE (FAQT)

FAQT Overview
Jason Mahon, Deputy Secretary of Economic Development & Chief Manufacturing Officer, Florida Department of Commerce

CREOL's Quantum Leap Initiative
Andrea Blanco-Redondo, FPCE Endowed Professor of Optics and Photonics at CREOL

Unlocking the Value of Quantum Computing
Paul Parazzoli, Public Sector Business Development, IBM Quantum

Building Quantum Networks to Connect Innovators
Noel Goddard, CEO, Qunnect, Inc

Constructing the Quantum Platform
Daniel Pompa, Quantum Field Engineer, IonQ



CREOL ALUM LAUNCHES **AI-POWERED HIRING PLATFORM**

After graduating from CREOL with a degree in Photonic Science and Engineering, **Justin Press '24** turned a common challenge into an entrepreneurial opportunity. His startup, Hire Match AI, is designed to help employers make more informed hiring decisions while improving the job application process for candidates.

The platform works alongside existing applicant tracking systems to provide deeper insights into hiring data, helping companies identify candidates based on long-term fit rather than simple keyword matches. By making the hiring process more transparent and data-driven, Hire Match AI aims to improve outcomes for both employers and job seekers.



Press credits his engineering education with helping him approach real-world challenges through innovation and problem-solving.

"For engineering students especially, having a wide range of experiences is a huge advantage," Press says. "A lot of the best ideas come from understanding how technical problems connect to business problems, user behavior or broken systems in the real world."

His entrepreneurial journey demonstrates how the analytical thinking and problem-solving skills developed at CREOL can be applied far beyond the laboratory to create technologies that address everyday challenges.

ALUMNI

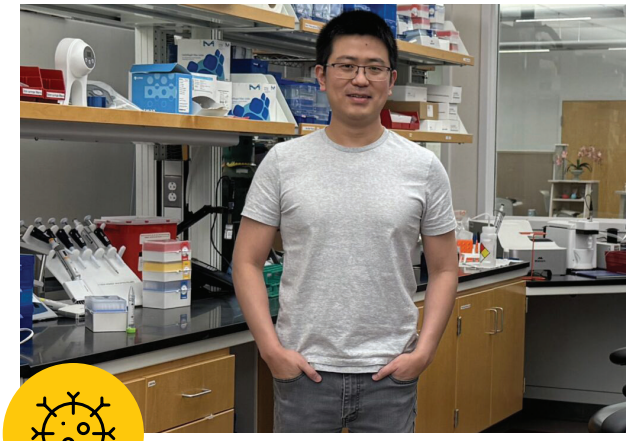
GISELE BENNETT NAMED CREOL'S 2026 DISTINGUISHED ALUMNA



As one of the earliest graduates of what was then the Center for Research in Electro-Optics and Lasers, **Gisele Bennett '87 '89MS** has spent nearly four decades advancing optics and photonics through research, innovation, and leadership.

A founding and managing member of MEPSS LLC, Bennett has led major research initiatives spanning electro-optical imaging systems, LIDAR, sensing technologies, and defense applications. Throughout her career, she has authored more than 130 publications, earned multiple patents, and held leadership positions in academia, government, and industry, including the Georgia Institute of Technology, the Georgia Tech Research Institute, and the Florida Institute of Technology.

Today, Bennett serves as 2026 President of Optica and is a Fellow of both SPIE and Optica, continuing to shape the future of the global optics and photonics community. She credits her time at CREOL with providing a strong foundation in research, mentorship, and industry collaboration—principles that have guided her distinguished career and continue to inspire the next generation of scientists and engineers.



CREOL ALUM ADVANCES **BIOMEDICAL IMAGING TO IMPROVE DISEASE TREATMENT**

CREOL alumnus **Jian Zhao '14MS '19PhD** is applying his expertise in optics and photonics to develop next-generation biomedical imaging technologies that could improve the diagnosis and treatment of cancer and neurodegenerative diseases.

Now an Assistant Professor at the University of Oklahoma, Zhao leads research focused on creating advanced optical imaging systems capable of visualizing disease at the molecular and single-cell levels. By combining fluorescence imaging, computational imaging, and optical engineering, his work aims to help researchers better understand disease mechanisms and accelerate the development of more effective therapies.

Zhao credits his education at CREOL with providing the strong foundation in optics, photonics, and hands-on research that made his interdisciplinary career possible.

"My time at CREOL laid a very strong foundation for everything I have accomplished today," Zhao says.

His work reflects the growing impact of biophotonics and demonstrates how CREOL alumni are applying light-based technologies to address some of today's most pressing healthcare challenges.

FOUNDING FACULTY FELLOWSHIP HONORS DR. JIM MOHARAM



Lynn and Jim Moharam.

A new graduate fellowship has been established in honor of longtime CREOL faculty member **Dr. Jim Moharam**, recognizing his extraordinary contributions to optics, photonics, and graduate education.

Throughout his distinguished career, Moharam has been internationally recognized for his pioneering work in electromagnetic theory and computational optics. He is best known for developing Rigorous Coupled-Wave Analysis (RCWA), a groundbreaking computational method for modeling diffraction in optical structures that continues to influence research and industry applications around the world.

Beyond his research accomplishments, Moharam has mentored generations of graduate students and helped shape CREOL's reputation as a global leader in optics and photonics education.

The fellowship is part of the CREOL Founding Faculty Graduate Fellowship initiative, made possible through the transformational 4:1 matching pledge established by Emeritus Dean Eric Van Stryland and his wife, Barbara. The fund will provide lasting support to outstanding graduate students pursuing advanced degrees at CREOL.

ALUMNA GIVES BACK THROUGH NEW STUDENT SCHOLARSHIP



CREOL alumna **Hannah Pierson '19** has established the Whimsical Engineer Endowed Scholarship, creating a lasting legacy for future students.

As a non-traditional student, Pierson found both encouragement and a strong sense of belonging within the CREOL community. Her scholarship reflects her gratitude for the support she received and her desire to help future students pursue their own educational journeys in optics and photonics.

The endowed scholarship will provide financial assistance to students while celebrating the creativity, curiosity, and innovative spirit that define the engineering profession.

PHILANTHROPY

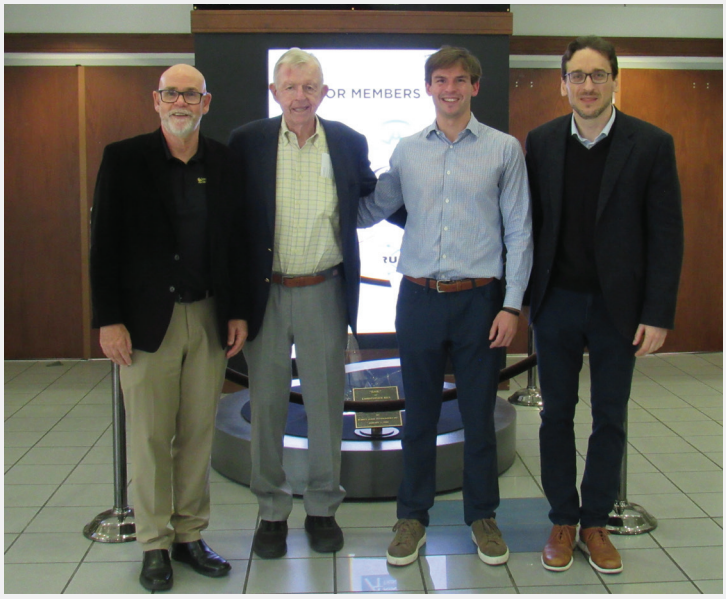


DAY OF GIVING SETS NEW RECORD FOR ENGAGEMENT

The CREOL community came together once again during UCF's 2026 Day of Giving, raising $18,647 from 82 donors in support of student scholarships, outreach programs, and other college priorities.

This year's campaign also earned university-wide recognition as CREOL won the "Beat Your Best Challenge," awarded to the UCF unit with the greatest percentage increase in donors compared to the previous year.

The successful campaign was spearheaded by Dean David Hagan and Katie Connolly, with support from alumni, faculty, students, staff, and friends whose generosity continues to strengthen opportunities for future generations of optics and photonics students.



COBB FAMILY'S LEGACY CONTINUES TO SHAPE CREOL

CREOL was honored to welcome Ambassador Chuck Cobb and Luis Cobb back to campus this year.

Decades ago, the Cobb family made a transformational gift establishing the Cobb Family Eminent Scholar Endowed Chair, an investment that has had a lasting impact on the college. The endowed chair has helped CREOL recruit internationally recognized faculty members, including **George Stegeman** and **Demetrios Christodoulides**, and most recently **Alexander Khanikaev**, strengthening the college's research excellence and global reputation.

During their visit, Ambassador Cobb and Luis toured the college, met with faculty, and saw firsthand how their family's generosity continues to advance groundbreaking research and educate future leaders in photonics.

ANNUAL CREOL SENIOR DESIGN SHOWCASE





CREOL Dean David Hagan with the first-place winners of the Senior Design 2 Competition, including Collin Barber, Luc Therrien, Omar Castro, and Josef Woodhouse

Throughout the 2025–2026 academic year, CREOL's Senior Design Showcase highlighted the creativity, technical expertise, and collaborative spirit of Photonic Science and Engineering students as they tackled real-world engineering challenges.

The Fall 2025 Showcase featured projects focused on improving the accessibility and affordability of existing technologies. Taking first place was Laser-Scope, a low-cost confocal laser scanning microscope developed by **Luc Therrien (PSE), Collin Barber (PSE), Josef Woodhouse (EE),** and **Omar Castro (CPE)**. Built using 3D-printed components and open-source hardware for approximately $800, the project demonstrated how advanced scientific instrumentation can become more accessible for researchers with limited resources.

Second place was awarded to SkinLumina, developed by **Ryan Rodriguez (PSE), Tatiana Cutrone (PSE), Tiffany Thani (CPE),** and **Abdullah Al-Gharabally (EE).** The team created a dermatological imaging system designed to improve diagnostic accuracy across diverse skin tones. The project also earned Best in Show at the College of Engineering and Computer Science Senior Design Showcase. Third place went to S.T.E.P.S. (Style Tracking Expressive Pad System), an interactive motion-tracking game that combined pose recognition with dance gameplay.

The Spring 2026 Showcase continued that tradition of innovation with projects addressing applications in imaging, automation, and optical systems. First place was awarded to S.T.A.R. (Spotlight Tracking with Automated Recognition), developed by **Gage Anderson (PSE), Travis Nguyen (PSE), Jerison Lau (EE), and Lucio Villena (CPE)**. Second place went to TSUNAMI – Hyperspectral Imager for Chlorophyll Detection, created by **Emilio Armas (PSE & EE), Jacob Silver (PSE)**, and **Xander Kin (EE)** and sponsored by BEAM Engineering for Advanced Measurements Co. Third place was awarded to Fast Polarization Switch, developed by **Michelle Nguyen, David "Austin" Rich**, and **Joshua Hendry**, with sponsorship from ASML.

The showcases were made possible through the support of CREOL Industrial Affiliates, faculty mentors, and industry sponsors. Special thanks to the fall Showcase judges including Ty Olmstead (Ocean Optics), Ed Foote (LightPath Technologies), Wilfredo Ortiz (MKS), and David Roberts (BEAM co.). The Showcase was coordinated by CREOL Professor Aravinda Kar, with support from the SPIE, Optica, and Society of Optics Students chapters.

STUDENTS

FOR FULL-LENGTH ARTICLES,
SCAN OR VISIT CREOL.UCF.EDU/NEWS



CREOL STUDENT OF THE YEAR
HONORED WITH UCF'S ORDER OF PEGASUS

Following her presentation on *"Observation of Topological Flat-Band States in Photonic Lattices,"* **Swati Bhargava** was named CREOL's 2025–2026 Student of the Year. Advised by Professor **Miguel Bandres**, Bhargava was recognized for her innovative research on controlling light propagation through photonic lattices, as well as her leadership and service within the CREOL community through SPIE, Optica, IEEE, and the CREOL Student Ambassador Program.

Bhargava's achievements were also recognized at the university level when she was inducted into the Order of Pegasus, UCF's highest student honor. Awarded to a select group of students who exemplify excellence in scholarship, leadership, and service, the Order of Pegasus recognizes those who have made exceptional contributions both on campus and in their communities.

CREOL DOCTORAL STUDENT HONORED BY SOCIETY OF WOMEN ENGINEERS

CREOL doctoral student **Debasmita Banerjee** received the Society of Women Engineers Rising Technical Contributor Award, a national honor presented to fewer than 20 early-career engineers each year. Recognized for her leadership and technical achievements, Banerjee conducts research in nonlinear and quantum optics, advancing ultra-precise optical measurement and sensing technologies.





STUDENT POSTER ELEVATOR PITCH WINNER

Gabriel Skowronek was the winner of the 2026 Industrial Affiliates Symposium Student Poster Elevator Pitch Competition for his presentation, "*Non-linear and Dispersive Dynamics of Ultrafast Megawatt Pulses in Hollow-Core Fiber: Air vs. Vacuum*." Skowronek's research explores how ultrafast, megawatt-intensity laser pulses propagate through hollow-core optical fiber under different atmospheric conditions. By combining experimental measurements with numerical simulations, the team investigated how pulse behavior evolves at increasing power levels and identified the threshold at which light–glass interactions begin to cause fiber damage and pulse distortion.

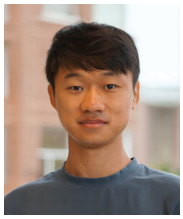
DOCTORAL DEGREE GRADUATES



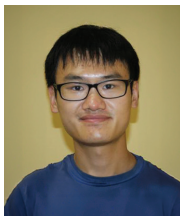
Alejandro Villalobos Meza ’24MS ’25PhD
Dissertation: Characterization, imaging, and modeling of thermal dynamics and failure mechanisms of quantum cascade lasers
Advisor: Arkadiy Lyakh
Employer: IRGLARE, LLC.
Title: Senior Scientist



Shaghayegh Yaraghi ’21MS ’25PhD
Dissertation: Holographic optical element for complex beam transformation
Advisor: Ivan Divliansky
Employer: University of Central Florida
Title: Postdoctoral Researcher



Yizhou Qian ’25PhD
Dissertation: High-efficiency micro-display light engines
Advisor: Shin-Tson Wu
Employer: Apple
Title: Display Engineer



Di Huang '25PhD
Dissertation: Three-section multi quantum well mode locked laser for optical frequency comb generation and space applications
Advisor: Peter Delfyett
Employer: Coherent Corp
Title: Senior Silicon Photonics Test Engineer



Yuqiang Ding ’24MS ’25PhD
Dissertation: Visual experience enhancement in augmented reality waveguide displays
Advisor: Shin-Tson Wu
Employer: Meta Platforms, Inc.
Title: Research Scientist



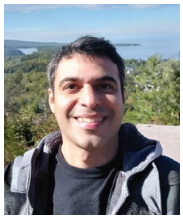
Md Abu Sufian ’25PhD
Dissertation: Specialty optical fibers: design, fabrication, and characterization
Advisor: Axel Schulzgen
Employer: Corning Inc.
Title: Development Co-op



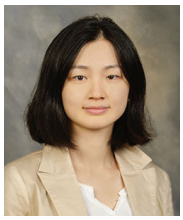
Andrew Klein ’24MS ’25PhD
Dissertation: Methods and applications of coherent analog photonic processing
Advisor: Sean Pang
Employer: University of Central Florida
Title: Postdoctoral Researcher



Joseph Haefner ’25PhD
Dissertation: Advancements in slow-wave thin film lithium niobate for opto-electronic communications
Advisor: Sasan Fathpour
Employer: US Air Force
Title: AFOSR SOARD Project Manager



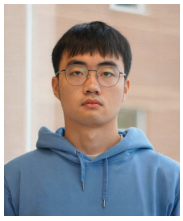
Amin Hashemi Shahraki ’24MS ’25PhD
Dissertation: Programmable integrated topological photonics
Advisor: Andrea Blanco-Redondo
Employer: University of Central Florida
Title: Postdoctoral Researcher



Li Zhang ’21MS ’26PhD
Dissertation: Infrared system designs and their application on target detection and geolocation
Advisor: C. Kyle Renshaw
Employer: The Selection Group
Title: Computer Vision Developer



Owen Thome ’23MS ’26PhD
Dissertation: High intensity laser ablation by filaments at standoff distances
Advisor: Martin C. Richardson



Zhenyi Luo ’25MS ’26PhD
Dissertation: High-efficiency and compact virtual reality displays
Advisor: Shin-Tson Wu
Employer: ByteDance Inc.

FAST FACTS

U.S. NEWS AND WORLD REPORT

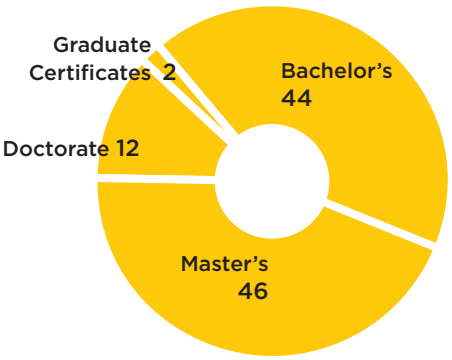
#9
BEST U.S. UNIVERSITIES FOR OPTICS (OVERALL)

#5
BEST U.S. PUBLIC UNIVERSITIES FOR OPTICS

#15
MOST INNOVATIVE UNIVERSITY

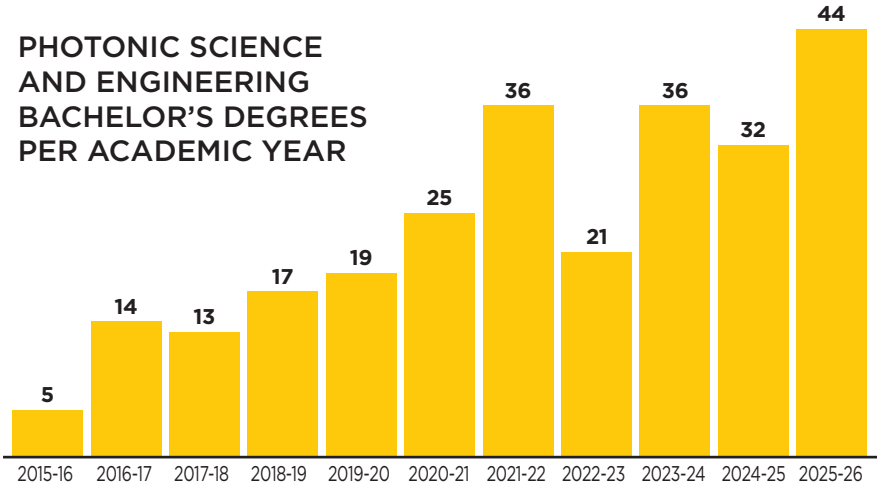
UCF IS A FEDERALLY DESIGNATED HISPANIC SERVING INSTITUTION

DEGREES AWARDED



(summer & fall 2025 + spring 2026)

PHOTONIC SCIENCE AND ENGINEERING BACHELOR'S DEGREES PER ACADEMIC YEAR



TOP ALUMNI EMPLOYERS

- Amazon
- Apple
- ASML
- Bruker
- CACI
- Corning
- Fibertek
- Google
- Infinera/Nokia
- Intel
- KLA
- L3Harris
- Lockheed Martin
- Meta
- Microsoft
- Northrop Grumman
- Academia (Postdoc Research)
- National Research Labs

(in alpha order; via UCF first destination survey)

FACULTY

35
CORE FACULTY

17
JOINT FACULTY

PATENTS & PUBLISHING

157
PUBLICATIONS*

27
PATENTS

(March 2025 – April 2026)

MOST PUBLISHED FACULTY

Ayman Abouraddy
Shin-Tson Wu
Rodrigo Amezcua Correa
Kathleen Richardson
Andrea Blanco Redondo

$18,649,026
RESEARCH FUNDING FY26

HIGHEST FUNDED PRINCIPAL INVESTIGATORS

Alexander Khanikaev
Guifang Li
Paul Leisher
Yehuda Braiman
Sasan Fathpour

$575,683
PHILANTHROPIC SUPPORT

125
DONORS

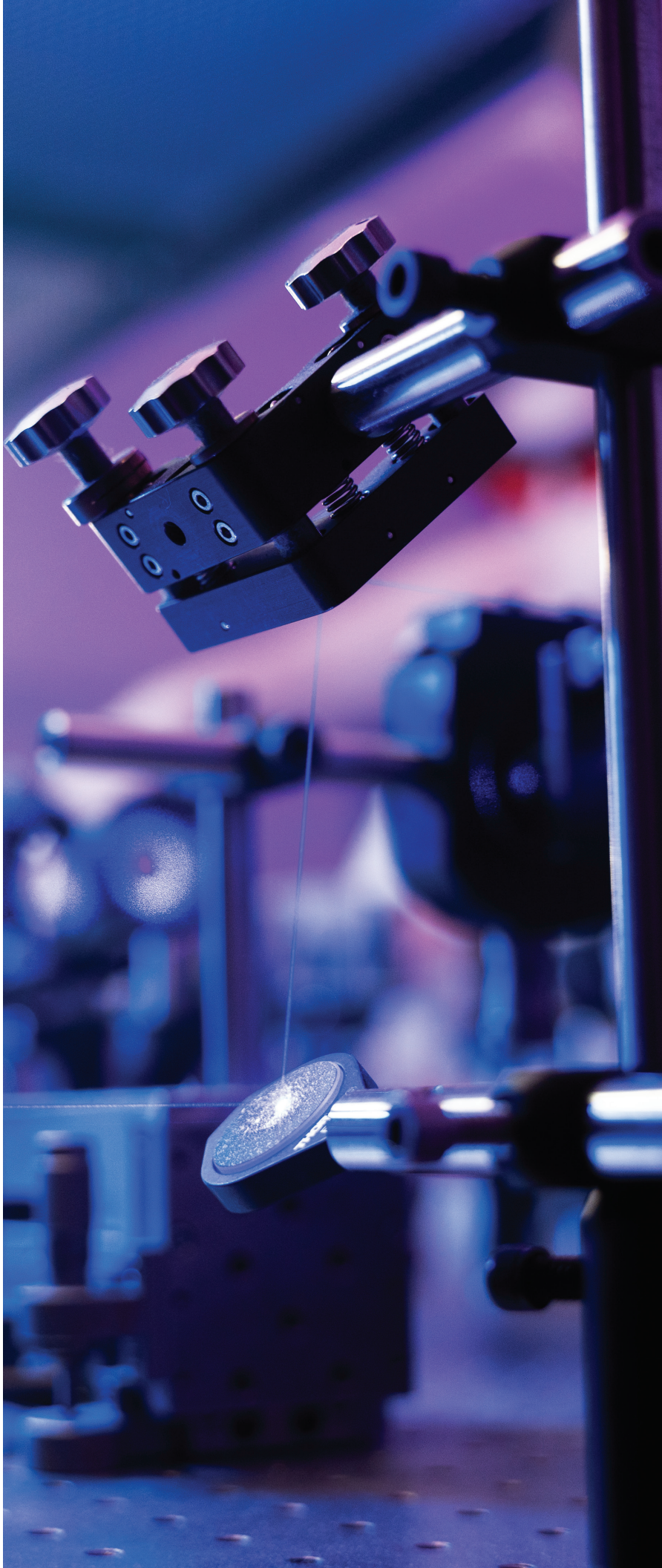
INDUSTRIAL AFFILIATES

Membership in the Industrial Affiliates (IA) program provides corporations, organizations, and individuals many benefits including regular communication and contact with CREOL's research faculty and students and other IA members who are developing new technologies and products for their businesses. Our faculty and students play leading roles in both local and international professional associations and can provide effective introductions to the extensive network of industry and expertise to which CREOL connects. Through the IA program, companies can also readily connect with other optics, photonics, and industrial organizations through local Florida organizations in which the College maintains active participation.

MEDALLION MEMBERS:
CACI International
Nokia of America
Northrop Grumman Mission Systems

CORPORATE MEMBERS:
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Fibertek
IonQ
JENOPTIK Optical Systems, Inc.
KLA
Lockheed Martin Missiles and Fire Control
MKS-Newport
Optica
SPIE - The International Society for Optics and Photonics
Yokogawa
Zygo

SENIOR MEMBERS:
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Arden Photonics
Avalanche Thinking
AVO Photonics
Beam
Bruker RMR
Corning
DataRay
DSI Optronics (Safran)
Edmund Optics
Ficontec
Google
Industrial Laser Machines
Lawrence Livermore National Labs
LightPath Technologies
MegaWatt Lasers
Ocean Optics
Optikos
Optimax
PowerLight Technologies
Situs Light
Thorlabs
VIGO Photonics



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