FLORIDA ATLANTIC UNIVERSITY









2023 ANNUAL REPORT

CHARLES E. SCHMIDT COLLEGE OF SCIENCE

Message from the Dean

Twenty twenty-three was a transformative year for the Schmidt College of Science. We embarked on new initiatives, constructed foundations for the college's future success, and built new traditions, all while elevating our students, faculty, and staff, and serving the greater community.

I'm proud to say we invested $1.52 million in our future scientists and leaders to forge a path for success across all collegiate levels of learning, from undergraduate researchers, graduate assistants, to postdoctoral fellows.

Our year-long strategic faculty hiring initiative culminated in welcoming 31 new faculty, instructors, and postdoctoral fellows for the 2023-2024 academic year, strengthening our ever-growing research and educational mission. The hiring initiative expands three key research and academic areas – the environment, health, and computational and data science – which are also university-wide strategic themes. The entirety of our college academic leadership and key faculty in each department coalesced to collaborate on this endeavor that will benefit the college for years to come.

Speaking of a growing college, we launched the FAU School of Environmental, Coastal, and Ocean Sustainability (ECOS) in partnership with FAU's Harbor Branch Oceanographic Institute. To tackle some of the most complex and consequential challenges that we face as a society, we need to train the next generation of policymakers, scientists, and industry innovators. The cross-disciplinary nature of the school, comprised of many existing programs and units, amplifies FAU's research, teaching and community engagement. This school is unique and important to Florida Atlantic because we are in a prime location to study the environment and its intersection with urban areas – with the Atlantic Ocean, the Indian River Lagoon, the Everglades, and numerous freshwater ecosystems – all converging in the largest and fastest growing metropolitan area in the state that we call home.

Biotech Bridge is a new initiative we launched to "bridge" the gap between academia and industry. The program is operated by the Center for Molecular Biology and Biotechnology, and draws expertise from researchers with diverse disciplines at Florida Atlantic and the biopharmaceutical industry, including cancer biology, biochemistry, computational chemistry, neuroscience, and aging. With three unique biotechnology degree programs available in the college, we are providing students valuable exposure to the rapidly growing biotechnology industry with high-demand non-academic career options.

The college hosted numerous superb events and raised our visibility markedly, both internally and externally.

One of those events was the inaugural Science Fest, which attracted over 1,000 guests to celebrate the sciences on the Boca Raton campus Breezeway. The event included exhibitions from our academic and research units, partner units around Florida Atlantic, as well as organizations from across South Florida. The event also included a research poster competition for undergraduate students that was supported by the Dr. Eric Shaw Excellence in Science Undergraduate Research Award, which provided a $1,000 prize to the winner. Visitors of all ages enjoyed the experiential event largely due to their ability to directly interact with scientists and student researchers.

The dynamic research from our faculty and students has earned notoriety with local, national, and international media, from print and digital publications, radio, and television, with segments featuring our scientists and their research on "Good Morning America," *The New York Times*, *U.S. News*, *Forbes*, *NPR*, CNN, BBC Science, *The Telegraph*, and *National Geographic*, to name just a few. This coverage has garnered tens of millions of views and tens of millions of dollars' worth of ad value equivalency for the university and college.

We had a strong interest in our Marine Science Lab throughout the fall semester, with six different tours of the lab from elected officials, both representatives and senators, and their staff. They learned about our world-class sea turtle research, conservation science, and the engaging community education taking place in the unique lab, located at the Boca Raton Gumbo Limbo Nature Center.

After mentioning some of our stand-out achievements, I'd like to emphasize how proud we are to serve our student body - the second largest at the university - and to continue to strengthen our research activities that are spread across four campuses. This expansive college advances so much each year thanks to a strong team.

To celebrate the numerous successes of our dedicated faculty and staff, we held the inaugural Schmidt College of Science Excellence Awards. This new tradition was a pleasure to host and I'm looking forward to honoring the exceptional teaching, research, advising, and service that advances our mission each year.

Our faculty had special opportunities for additional recognition and funding this year to reward strong research. We provided special achievement awards for highly productive researchers throughout the college. In addition, faculty could apply for up to $50,000 for College of Science Research Fellowships to support their work; a total of 17 fellowships were awarded across the college.

While there is so much more I could say, I encourage you to read on in this annual report and discover the many other milestones we reached, revel with us in the success of our students and faculty, and explore the story that is the Charles E. Schmidt College of Science in 2023.





Valery E. Forbes, Ph.D.
Dean and Professor
Charles E. Schmidt College of Science

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2023 Highlights

FAU Launches New School of Environmental, Coastal, and Ocean Sustainability
Florida Atlantic University's six campuses are situated in a region at the nexus of rapid urbanization and accelerated environmental risk. Recognizing the critical intensification of these environmental issues in South Florida and beyond, FAU launched its new School of Environmental, Coastal, and Ocean Sustainability (ECOS). The school is a partnership between the Charles E. Schmidt College of Science and FAU Harbor Branch Oceanographic Institute.

Strategic Faculty Hiring Initiative: New Hires Bolster Education and Research
The Schmidt College of Science welcomed 31 new faculty, instructors, and postdoctoral fellows during the 2023-2024 academic year. The new faculty hires were the result of a year-long, strategic hiring initiative that aimed to expand three key research and academic areas — the environment, health, and computational and data science.

Investing in the Next Generation of Scientists
To ensure a brighter future for our students, the field of science, and society, the Schmidt College of Science invested $1.52 million in 2023 to place tomorrow's scientists on a path to success, across all collegiate levels of learning.

New Soar-in-4 Medical School Pathway Program Launched
The Charles E. Schmidt College of Science and FAU Medicine launched a collaborative pathway program for outstanding Schmidt College of Science Soar-in-4 Scholars. This new initiative allows the college to prioritize these high-achieving students and grant them access to a direct pathway to FAU's Schmidt College of Medicine, along with an abundance of support services.

Rankings
Several Florida Atlantic University graduate programs are included in the latest *U.S. News & World Report's* "Best Graduate Programs" for 2023-24. Among the College of Science's highest ranked graduate programs are Earth Sciences (Geosciences), Mathematics, Physics, Psychology, Chemistry, and Biological Sciences.

The Schmidt College of Science's undergraduate psychology program placed No. 234 in the 2024 *U.S. News & World Report* rankings of top undergraduate programs in the country. This marks the first time in the program's history to be included in the prestigious report.

The Schmidt College of Science's Master of Urban and Regional Planning professional degree program earned three top 10 rankings in the 2023 *Planetizen Guide to Graduate Urban Planning Programs*.

The Schmidt College of Science's Master of Urban and Regional Planning degree was named in the top 25 "Most Affordable Urban Planning Schools" by UrbanPlanningDegree.com.

Inaugural Schmidt College of Science Excellence Awards
The inaugural Schmidt College of Science Excellence Awards, held in April 2023, recognized the outstanding research, teaching, advising, and service from dedicated faculty and staff. The winners were also nominated for university-wide awards on behalf of the college.

Biotech Bridge
The college's Center for Molecular Biology and Biotechnology launched Biotech Bridge to harness the potential of academia and industry partnerships by building new training programs, expanding internship opportunities, forming an industry advisory council, establishing collaboration with local partners, and providing access to the latest scientific developments to the community through the FAU Biotech Bridge Seminar Series.

Department of Exercise Science Launches New Graduate and Professional Pathway Agreement with FIU
The Schmidt College of Science's Department of Exercise and Health Promotion launched a new graduate and professional pathway agreement between Florida Atlantic and Florida International University. FAU students in the Pre-Physical Therapy/Occupational Therapy (Pre-PT/OT) concentration of the B.S. degree in Exercise Science and Health Promotion have an opportunity to qualify for a guaranteed early interview with FIU's highly sought after Doctor of Physical Therapy program.

New Neuroeconomics Graduate Certificate Program
The college's new Neuroeconomics Graduate Certificate Program aims to provide students with the tools needed to analyze, interpret, and apply neuroscientific data in order to understand real-world decisions.

Transcend Tomorrow Campaign
Florida Atlantic University launched the public phase of its first comprehensive campaign, "Transcend Tomorrow: The Campaign for Florida Atlantic University," in more than 20 years. The ambitious plan aims to raise $600 million for FAU, and will focus on three fundraising priorities: FAU Health, the environment, and scholarship/student success. The college will serve as a major contributor to these priorities for the university.

Nat and Dorothy Hyman Lecture Series
The Nov. 2 Nat and Dorothy Hyman Science Lecture brought Sarah Hobbie, Ph.D., from the University of Minnesota, whose acclaimed research is generating insights that promote novel solutions to solving urban water quality challenges that impact communities around the world.

Future Doctors Reception Returns
Dean Forbes hosted the 20th Charles E. Schmidt College of Science Future Doctors' Reception on May 3. College faculty and staff, along with students' families, gathered to celebrate FAU students who were admitted to health professional graduate programs. This year, 41 members of the class of 2023 were honored at the annual reception.

Inaugural Science Fest
On April 14, 2023, the Schmidt College of Science hosted its inaugural Science Fest. The event attracted approximately 1,000 visitors, including area elementary, middle, and high school students, community members, FAU undergraduate and graduate students, as well as faculty and staff to enjoy science exhibitions and interactive activities.

Frontiers in Science Public Lecture Series
For over two decades, the Schmidt College of Science's Frontiers in Science Public Lecture series had been a pillar for communicating and engaging in the sciences within our community. The 2023 season brought six unique lectures on topics from nuclear fusion to combating climate change, to using math to map brain health.

CUES 50th West Palm Beach
The Charles E. Schmidt College of Science's Center for Urban and Environmental Solutions (CUES) at FAU celebrated its 50th anniversary on May 17. The center, led by John L. Renne, Ph.D., AICP, professor and CUES director, remains dedicated to working with communities, local residents, and decision-makers to address urban and environmental issues through partnerships, education, and research.

The Invading Sea
The Invading Sea, an award-winning website featuring content on climate change in Florida, is now managed by FAU's Center for Environmental Studies, located within the Charles E. Schmidt College of Science. The site will continue to be a nonpartisan source for news and opinion pieces about climate change and other environmental issues in Florida at FAU, while expanding its focus to include more educational content.

FAU Receives National Academy of Inventors Chapter of Excellence Award
FAU's chapter of the National Academy of Inventors (NAI) was honored with the inaugural Chapter of Excellence Award. FAU's NAI chapter represents colleges and institutes throughout the university, including the Schmidt College of Science.

College Snapshot

By the Numbers (number of students, postdocs, faculty)

- 7,000+ undergraduates
- 608 graduate students
- 10 postdoctoral fellows
- 125 tenure/tenure track faculty members (including faculty with joint appointments)
- 9 non-tenure track research faculty
- 46 instructors

Academics

41+ degree programs

- 17 baccalaureate
- 15 master's
- 7 Ph.D.
- 2 professional master's programs
- 14 certificate programs

1,631 Degrees Awarded Annually

- 1,460 bachelor's
- 129 master's
- 42 doctoral

Interdisciplinary Degree Programs

- Applied Mental Health Services Undergraduate Certificate
- Environmental Restoration Graduate Certificate
- Environmental Science Master's Program
- Environmental Science Ph.D. Program
- Environmental Science Undergraduate Certificate
- FAU Max Planck Honors Program
- Health Science Bachelor's Program
- Integrative Biology Doctoral Program
- Marine Science and Oceanography Master's Program
- Medical Physics Graduate Certificate
- Neuroeconomics Graduate Certificate
- Neuroscience Graduate Certificate
- Neuroscience Doctoral Program
- Post-Baccalaureate Pre-Health Professions Graduate Certificate/Preparatory Program

Departments

- Biological Sciences
- Chemistry and Biochemistry
- Exercise Science and Health Promotion
- Geosciences
- Mathematics and Statistics
- Physics
- Psychology
- Urban and Regional Planning

Centers

- Center for Biological and Materials Physics
- Center for Complex Systems and Brain Sciences
- Center for Cryptology and Information Security
- Center for Environmental Studies
- Center for Geo-Information Science
- Center for Molecular Biology and Biotechnology
- Center for Urban and Environmental Solutions

Field Stations and Arboretum

- Riverwoods Field Laboratory, located in the Kissimmee River Basin in the city of Lorida
- FAU Marine Science Lab at Gumbo Limbo Nature Center, city of Boca Raton
- Robert J. Huckshorn Arboretum, Jupiter campus

Campuses

- The college's programs and research extend across the university's 110-mile South Florida service region, including the Davie campus, Boca Raton campus, Jupiter campus, and the Harbor Branch Oceanographic Institute campus in Fort Pierce
- Each campus offers unique opportunities for science majors that we encourage students to explore as they build their curriculum and progress through their college experiences

The Rubin and Cindy Gruber Sandbox

- One of the nation's first multi-disciplinary, state-of-the-art artificial intelligence (AI) labs located in a university library, the collaborative, 3,400-square-foot experimental space was designed for students of all levels, from all disciplines, to directly engage with the fast-advancing field of AI
- The Sandbox is dedicated to advancing the field of AI through interdisciplinary collaboration, hands-on student research, and education
- The space is operated through a partnership with FAU Libraries and the Schmidt College of Science, and is home to the Machine Perception and Cognitive Robotics Laboratory from the Schmidt College of Science and the Center for the Future Mind from the Schmidt College of Arts and Letters

Signature Events and Outreach

- Astronomical Observatory Open Viewing Nights and Public Education Events
- Combinatorics, Computing, Group Theory, and Applications Conference
- Frontiers in Science Public Lecture Series
- Future Doctors Reception
- Marine Science Lab Public Visitors' Gallery and Public Education Programs
- Math Days
- Mu Alpha Theta Mathematics Competition

- Nat and Dorothy Hyman Science Lecture Series
- Pre-Health Professions Week and Graduate and Professional Fair
- Riverwoods Field Lab Tours and Academic and Public Education Activities
- Robert J. Huckshorn Arboretum Festivities
- Science Olympiad
- Science Fest
- Young CryptograpHers Summer Camp

Signature Programs

- Soar-in-Four Scholars
- Soar-in-Four Medical School Pathway Program
- Undergraduate Research
- Honors in the Major: Honors in Biological Sciences Program, Honors in Chemistry Program, Honors Program in Mathematics, Upper-Division Honors Program in Psychology, Honors Program in Urban and Regional Planning or Urban Design
- Combined Degrees (Bachelor's to Master's)
- Master's Along the Way
- Jumpstart Postdoctoral Program

Undergraduate Students

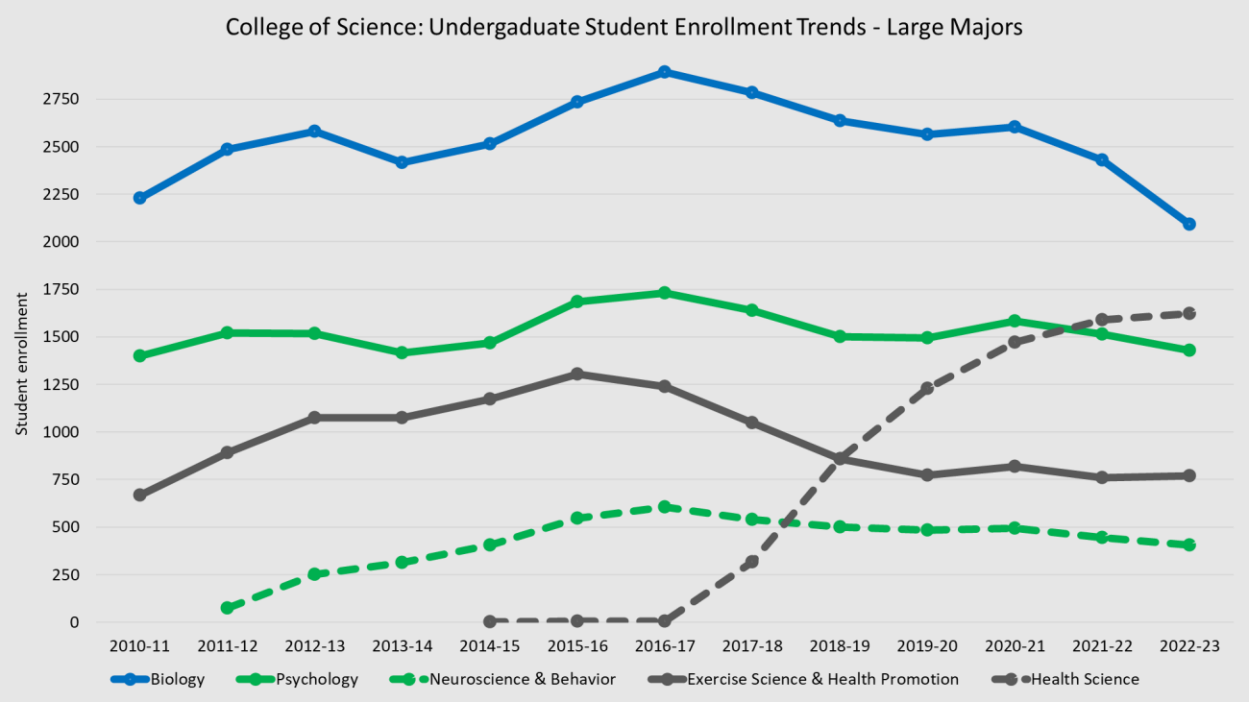
Top Undergraduate Degree Programs, Respectively, by Enrollment, at the University

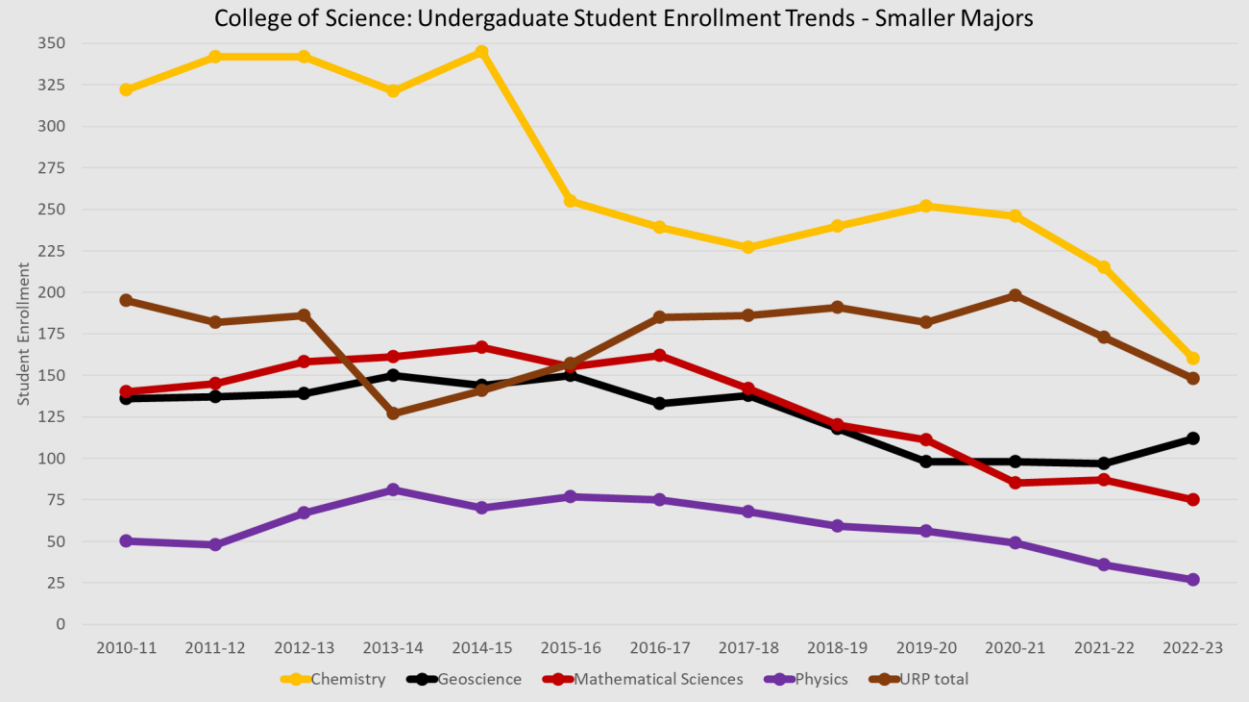
- #1. B.S. Biological Sciences
- #2. B.A. Health Science
- #3. B.A. Psychology
- #8. B.S. Exercise Science

Key Enrollment Metrics (2022-2023 AY)

- 7,026 undergraduates enrolled
- 6,273 Florida residents (89%)
- 1,468 first-generation college students (21%)
- 2,489 White (35%)
- 2,193 Hispanic (31%)
- 1,622 Black/African American (23%)
- 5,085 Female (72%)
- 3,946 FTIC students (56%)
- 2,091 transfer students (30%)

Majors


College of Science: Undergaduate Student Enrollment Trends - Large Majors
Student enrollment
2750
2500
2250
2000
1750
1500
1250
1000
750
500
250
0
2010-11
2011-12
2012-13
2013-14
2014-15
2015-16
2016-17
2017-18
2018-19
2019-20
2020-21
2021-22
2022-23
Biology
Psychology
Neuroscience & Behavior
Exercise Science & Health Promotion
Health Science


College of Science: Undergaduate Student Enrollment Trends - Smaller Majors
Student Enrollment
350
325
300
275
250
225
200
175
150
125
100
75
50
25
0
2010-11
2011-12
2012-13
2013-14
2014-15
2015-16
2016-17
2017-18
2018-19
2019-20
2020-21
2021-22
2022-23
Chemistry
Geoscience
Mathematical Sciences
Physics
URP total

Bachelor Degrees Awarded

	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
Biological Science	430	439	484	488	389
Chemistry	33	27	34	36	38
Exercise Sci. and Health Promotion	179	156	175	135	173
General Studies	70	107	78	58	84
Geography (incl. online)	15	9	4	1	1
Geology/Geosciences (incl. online)	11	19	6	14	18
Health Science	67	185	211	260	292
Mathematics	27	32	13	13	20
Neuroscience and Behavior	113	118	125	109	101
Physics	5	9	9	8	5
Psychology	361	343	307	327	312
Urban and Regional Planning	34	24	23	16	13
Urban Design	24	16	23	31	17

Retention and Graduation Rates (2022-2023)

- Academic Progress Rate (FT with a GPA of 2.0) 80.4% (FAU 81.8%)
- Six-year FTIC graduation rate (FT) 67.4% (FAU 64.0%)
- FTIC Pell recipient six-year graduation rate (FT and PT students) 66.3% (FAU 65.5%)
- Percent of bachelor's degrees awarded to minorities 55.9% (FAU 51.7%)
- Four-year FTIC graduation rate (FT) 57.8% (FAU 50.1%)
- Percent of graduate degrees awarded in areas of strategic emphasis 84.8% (FAU 66.9%)
- Percent of undergraduates enrolled (FT) 71.0% (FAU 66.9%)
- Percent of undergraduate degrees in areas of strategic emphasis 72.0% (FAU 61.4%)
- Three-Year New FL AA Transfers Graduation Rate (FT and PT) 56.7% (FAU 58.8%)

Undergraduate Research

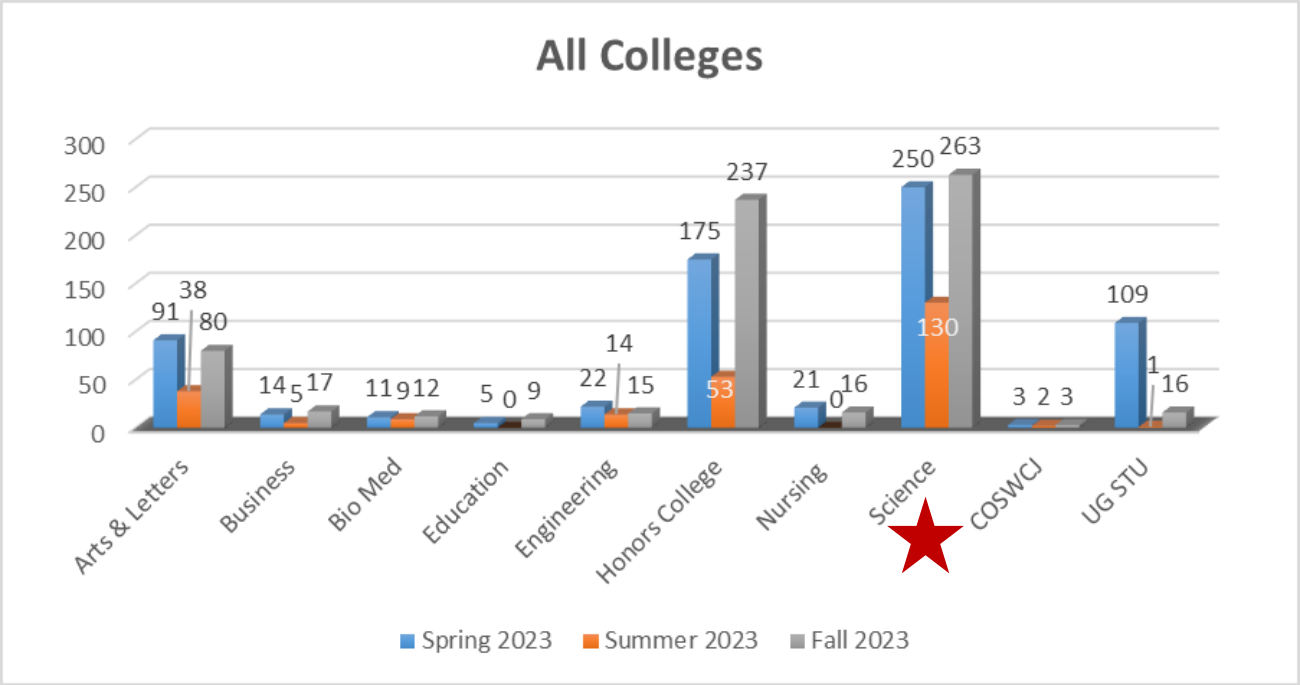
The college emphasizes outstanding, real-world experiences for our undergraduate science majors. We work closely with the Office of Undergraduate Research and Inquiry (OURI) to encourage undergraduate student research. Our undergraduate student scientists get funded, published, recognized, and are involved with research, scholarship, and creative activities.

Students Registered in Directed Independent Research (DIR) Courses 2023

Dorothy F. Schmidt College of Arts and Letters	13
College of Business	32
College of Education	14
College of Engineering and Computer Science	6
Honors College	124
Charles E. Schmidt College of Medicine	27
Charles E. Schmidt College of Science	**546**
College of Social Work and Criminal Justice	6

Charles E. Schmidt College of Science had 71% of all DIR students across Florida Atlantic in spring, summer, and fall of 2023.

Undergraduate Students Conducting Research (DIR, DIS, RES)



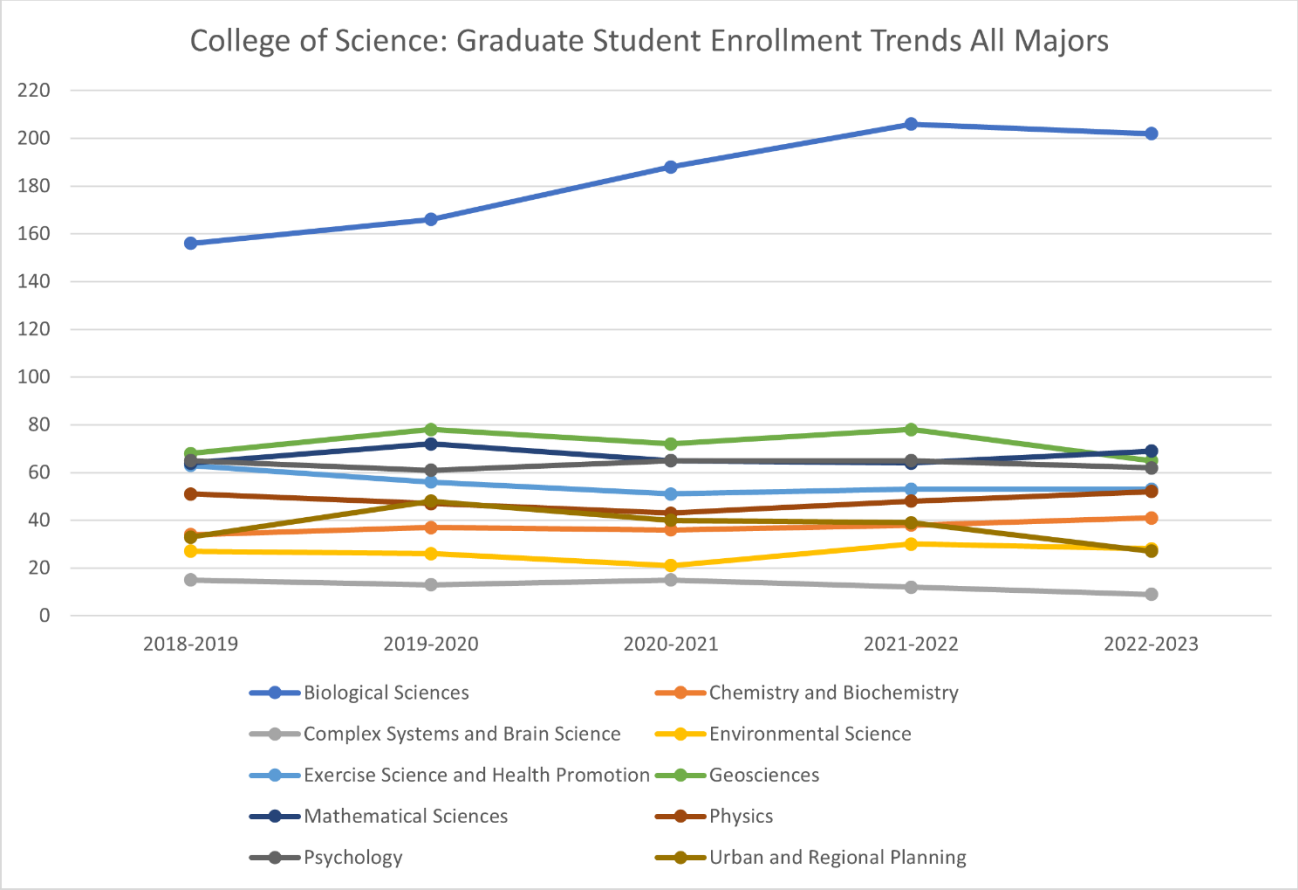
Undergraduate Awards and Recognition

- Schmidt College of Science Soar-in-4 Scholars Kyahra Morrissey and Carlos Ojeda named the 2023 recipients of the Golberg Scholarship
- Winners of the inaugural Science Fest's Undergraduate Student Poster Competition: $1,000 Dr. Eric Shaw Excellence in Science Undergraduate Research Award, Hamza Hanafi; Honorable Mention Winners, Rised Philogene and Stephanie Toleno
- Luis Carrillo named recipient of the University Scholar Award; Casey Leary named the Distinguished Student of the Year at the 54th Annual Honors Convocation
- 2023 Office of Undergraduate Research and Inquiry Research Day winners from the Schmidt College of Science: First Place Student Presenter, Edward De La Uz and Second Place Student Presenter, Seymour Haque

- Rachel Kavalakatt named recipient of the Dr. Eric H. Shaw FAU Wave Excellence in Innovation Award and a $2,000 cash prize for the innovation Carpal Tech 2.0
- 2023 FAU Student Talon Leadership Award awarded to Kaylia Cooper
- Seniors Lina Crisostomo, Tsaiace Edwards, Jorge Torres, and Mikhail Isaac were each been awarded $1,000 to fully fund their FAU Medical College Admissions Test (MCAT) preparatory course fees from the Douglas and Virginia Stewart Foundation
- Nhi Tran and Gustavo Mundim received the Department of Chemistry and Biochemsitry's Carey and Rosamond Jackson Memorial Scholarship Award for high academic excellence
- Gabriella Barrios Escobar was nominated for the SoFL-ACS award given to an outstanding graduating senior majoring in chemistry, biochemistry or medicinal chemistry from South Florida universities
- Spring 2023 Sarajedini Family Scholarship winner: Ryu Morrison
- Spring 2023 Andrew R. & Marjorie C. Buglione Endowed Scholarship winners: Nhi Tran, Ryu Morrison
- Fall 2023 Sarajedini Family Scholarship winner: Kaylia Cooper
- Fall 2023 Andrew R. & Marjorie C. Buglione Endowed Scholarship winners: Rita Hopkins and Marina Eduarda Menezes Vezzi
- Art of Science Winner: Honorable Mention Award, "Stressed Out," Aisha Mirza
- Art of Science Winner: Honorable Mention Award, "Rhizopus Revelation," Sakshi Kumari Pandit
- 36 students accepted into medical school or health professional programs (AY 2022-2023)

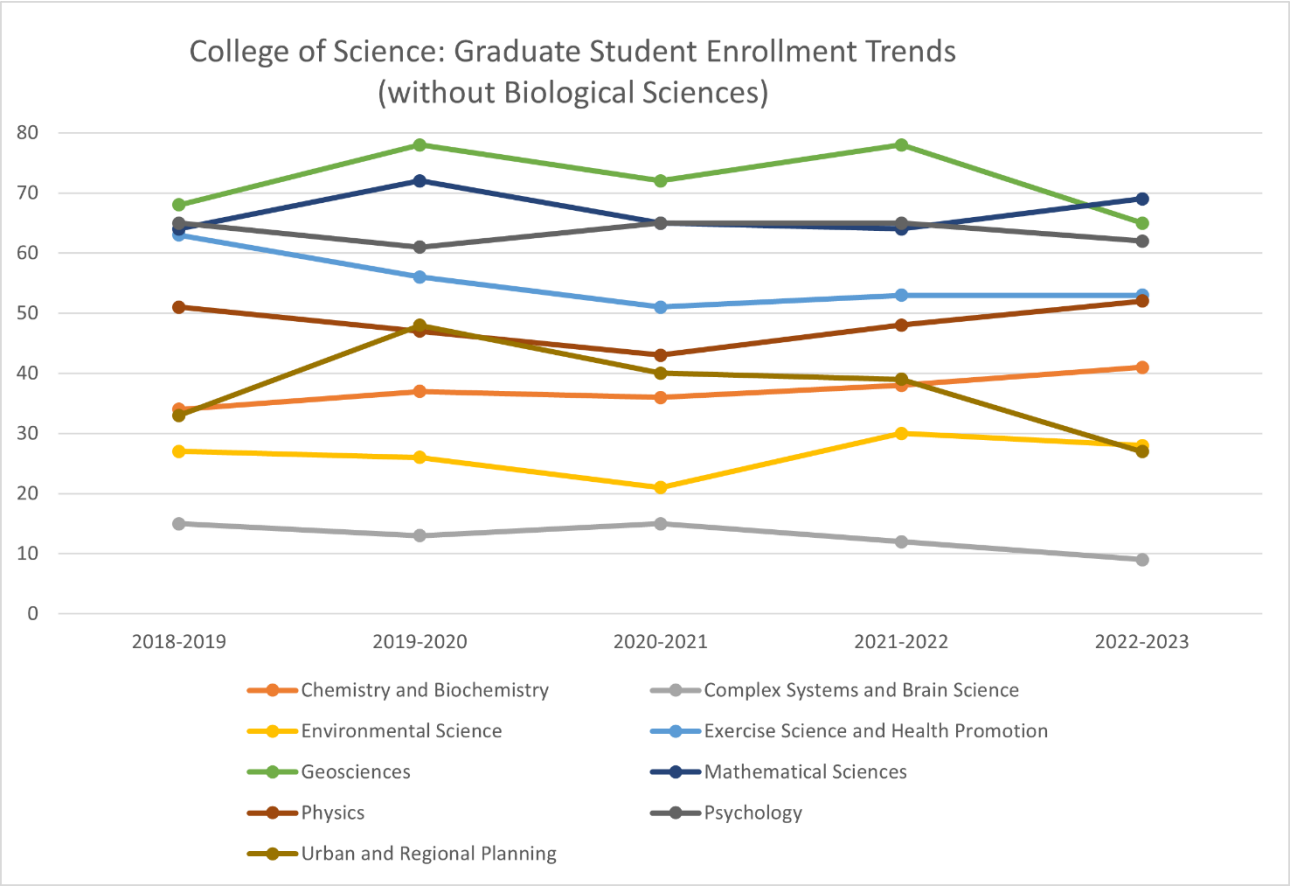
Graduate Students

Enrollment for All Departments



Note: The Marine Science and Oceanography Master's Program enrollment is included with Biological Sciences and the Neuroscience Doctoral Program enrollment is included with Psychology.

Enrollment for All Departments Without Biological Sciences



Note: The Marine Science and Oceanography Master's Program enrollment is included with Biological Sciences and the Neuroscience Doctoral Program enrollment is included with Psychology.

Degrees Awarded: Master's

	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
Applied Math and Statistics	2	5	7	1	4
Biological Science	25	24	18	30	27
Business Biotechnology	4	1	5	3	5
Chemistry	6	2	4	3	4
Data Science and Analytics			2	1	
Environmental Science	8	8	5	11	8
Exer Sci and Health Promotion	21	26	14	20	15
Geosciences	15	15	9	18	12
Marine Science and Oceanography	3	3	11	9	12
Mathematics	7	11	8	7	8
Medical Physics	7	4	7	3	4
Physics	7	1	1	4	4
Psychology	9	6	10	9	16
Urban and Regional Planning	9	13	9	13	10

Degrees Awarded: Doctorate

	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
Integrative Biology	11	14	16	7	18
Experimental Psychology	5	8	6	5	3
Mathematics	6	6	4	3	5
Geosciences	4	1	4	4	4
Physics	5	3	1	4	6
Chemistry	5	3	3	3	3
Complex Sys and Brain Science	3		3	5	3

Graduate Student Awards and Recognition:

- FAU Three Minute Thesis (3MT®) Championship Winners: Hayley Knapp, Dr. Eric H. Shaw 3MT® Championship Endowed Award; Amish Mishra, 3MT® Championship Runner-Up and People's Choice Award
- Hayley Knapp placed second overall in the state-wide Three Minute Thesis (3MT®) Competition
- Accepted into medical physics residency programs: Panagiota Galanakou, Touhid Feghhi, Samaneh Rikhtehgaran, and Shawn String
- Winners of the 14th Annual Graduate and Professional Student Association (GPSA) Research Day from the Schmidt College of Science: Biological & Chemical Sciences First Place Winner, Christopher Spagnolia, and Second Place Winner, Kimarah Lamothe; Engineering First Place Winner, Subhosit Ray; Physical Sciences and Mathematics First Place Winner, Rabindra Parajuli, and Second Place Winner, Panagiota Galanakou
- The 20th annual Schmidt College of Science's Future Doctors' Reception celebrated 41 members of the class of 2023 who were honored at the annual reception that recognizes of students who have been admitted to health professional graduate programs
- Haley Davis and Sydney Bell are conducting research with the FAU Harbor Branch Oceanographic Institute and launched a podcast called "To Dive For"
- Graduate students Clark Morgan and Natalia Jaworski named 2023 Guy Harvey Foundation Scholarship Recipients for Marine Science Research
- Michael Ostroff attended the prestigious Wolfram Innovative Technology Summer School
- Jennifer Giordano named a Stiles-Nicholson Brain Institute Fellow in Fall 2023, and will begin in the fellowship Spring 2024 semester
- Derek Aoki co-authored a paper that used forensic analysis of shark bites on sea turtles in Florida and Alabama to infer the possible size and species of the predator
- Four out of five awardees of the Palm Health Foundation "Computational Brain Science and Health Graduate Fellowships" were Schmidt College of Science graduate students: Lindsey Riera-Gomez, Joseph McKinley, Jennifer Giordano, and Ryan Gallagher

- Spring 2023 Dean Perry College of Science Graduate Scholarship winner: Morgan Slevin
- Fall 2023 Science Graduate Research Support Scholarship winners: Lindsey Riera-Gomez and Samantha Trail
- Fall 2023 Andrew R. & Marjorie C. Buglione Endowed Scholarship winner: Katie Lorissaint
- Charlie Daria, a graduate student; and Morgan C. Slevin, a doctoral student, both in the Charles E. Schmidt College of Science, served as co-authors on a study, published in the journal *Acta Ethologica* that showed urban noises caused detrimental effects to the development of songbirds' beaks
- Ariadna Rojas Corzo was awarded a Save our Seas Foundation grant to continue her research on whitespotted eagle ray nursery habitats
- Samantha Trail was among the Sea Turtle Grants Program awardees at the Marine Science Lab who received funding to support research that will help researchers comprehend how young sea turtles disperse to offshore nursery areas
- FAU Art of Science Winner: Second place, "Brain Cell Galaxy," by Peter Rodriquez
- FAU Art of Science Winner: Third place, "Momma," by Aaron Mencia
- FAU Art of Science Winner: Student in the Lab Award, "Oh My Gauze," by Jamie Knaub
- FAU Art of Science Winner: Student in the Field Award, "Tracking Shirleen," by Derek Aoki
- FAU Art of Science Winner: People's Choice Award, "Trending Looks," by Sarah Webb
- FAU Art of Science Winner: Honorable Mention Award, Sharktography," by Dawn Raja
- FAU Art of Science Winner: Honorable Mention Award, "Watchful Eye," by Kathryn Coates

Faculty

New Hires

- Ashley Artese, Ph.D., assistant professor, Department of Exercise Science and Health Promotion
- Donella Beckwith, instructor, Department of Chemistry and Biochemistry
- Matthew Edwards, Ph.D., visiting assistant professor, Department of Geosciences
- Parker Edwards, Ph.D., assistant professor, Department of Mathematics and Statistics
- Vanessa Fernandes, Ph.D., assistant professor, Department of Biological Sciences
- Brandon Fico, Ph.D., assistant professor, Department of Exercise Science and Health Promotion
- Hadi Gorak, Ph.D., instructor, Department of Physics
- Melina Matos, Ph.D., assistant professor, Department of Urban and Regional Planning
- Harsha Nawarathna, Ph.D., instructor, Department of Mathematics and Statistics
- Susan Norstrom, Ph.D., visiting instructor, Department of Psychology
- Rodrigo De Oliveira Pena, Ph.D. assistant professor, Department of Biological Sciences
- Shivanie Saith, Ed.D., instructor, Department of Biological Sciences

- Joshua Scholl, Ph.D., instructor, Department of Biological Sciences
- Elizabeth Starling, Ph.D., instructor, Department of Physics
- Stephanie Wakefield, Ph.D., assistant professor, Department of Urban and Regional Planning
- Paula Faria Waziry, Ph.D., instructor, Department of Biological Sciences
- Erin Williams, Ph.D., instructor, Department of Chemistry and Biochemistry
- Zhu-Lin Xie, Ph.D., assistant professor, Department of Chemistry and Biochemistry
- Xiaolang Zhang, Ph.D., assistant professor, Department of Geosciences
- Yin Zhijun, Ph.D., instructor, Department of Mathematics and Statistics
- Yijie Zhu, Ph.D., assistant professor, Department of Geosciences

Promotions

- Yonas Abraha, M.S., senior instructor, Department of Mathematics and Statistics
- Laura Canteri, M.S., senior instructor, Department of Exercise Science and Health Promotion
- Kevin Drees, Ph.D., senior instructor, Department of Mathematics and Statistics
- James Gammack-Clark, M.S., university instructor, Department of Geosciences
- Alan Kersten, Ph.D., professor, Department of Psychology
- Maria Stadnik, Ph.D., senior instructor, Department of Mathematics and Statistics
- Necibe Tuncer, Ph.D., professor, Department of Mathematics and Statistics
- Katarzyna Winkowska-Nowak, Ph.D., senior instructor, Department of Mathematics and Statistics

Faculty Retirements and Departures

Retirements

None

Departures

- Carl Hansen (Department of Biological Sciences)
- William Kalies (Department of Mathematics and Statistics)
- Lauren Mavica (Department of Psychology)
- Jesse Saginor (Department of Urban and Regional Planning)
- Carmen Varela (Department of Psychology)

Faculty Awards and Recognition

Schmidt College of Science faculty earned acclaim throughout 2023. Selected highlights include:

- Predrag Cudic, Ph.D., professor in the Department of Chemistry and Biochemistry, and the college's associate dean for research, had a novel intranasal drug delivery platform approved by the U.S. Patent and Trademark Office
- Hongjie Wang, Ph.D., assistant research professor in the Department of Chemistry and Biochemistry, and a member of FAU's I-Health and Stiles-Nicholson Brain Institute,

awarded pilot funding from the "New Horizons in Alzheimer's Disease and Related Dementias" Program
- Inaugural 2023 Schmidt College of Science Excellence Award winners: Excellence and Innovation in Undergraduate Teaching and Advising, Korey Sorge; Faculty Service Award, Vicki Sarajedini; Researcher of the Year, Wazir Muhammad, Marianne Porter, and Deguo Du; Scholar of the Year, Rindy Anderson and John Renne; Staff Service Award, Brittanney Adelmann
- Field trips led by Anton Oleinik, Ph.D., associate professor, FAU Department of Geosciences, are a vital part in the life a geology student and allow students to expand their knowledge of earth sciences by experiencing the subject in its natural laboratory environment
- Shailaja Allani, Ph.D., associate scientist in the Department of Chemistry and Biochemistry, appointed as the Director of the Center for Molecular Biology and Biotechnology (CMBB) and the newly named FAU Biotech Bridge program
- John Renne, Ph.D., professor in the Department of Urban and Regional Planning, selected as Scholar of the Year at the professor level for scholarly and creative work at the 54th Annual Honors Convocation
- Maré Cudic, Ph.D., associate professor in the Department of Chemistry and Biochemistry, selected as the Distinguished Mentor of the Year in Undergraduate Research at the 54th Annual Honors Convocation
- Art of Science Winner: Faculty in the Lab Award, "Duality of Fear," Tim Holford, Ph.D., instructor, Florida Atlantic Max Plank Honors Program, Charles E. Schmidt College of Science, Max Planck Florida Institute for Neuroscience, and Harriet L. Wilkes Honors College
- Art of Science Winner: Faculty in the Field Award, "Ribbon Reef," Stephen Kajiura, Ph.D., professor of biological sciences
- Art of Science Winner: Top Postdoc, "Octopus Skin(care)," Chelsea Bennice, Ph.D., postdoctoral fellow
- Art of Science Winner: Honorable Mention, "Greasy Brain," Qi Zhang, Ph.D., associate professor of chemistry and biochemistry

Research

Manuscripts, Books, and Book Chapters (2023, list in appendix 1)

- Published peer-reviewed manuscripts: 202
- Manuscripts submitted, in revision or in press: 19
- Published books and book chapters: 23
- Book chapters in press: 3

Patents

- Invention disclosures: 9
- Provisional patent applications: 5
- Issued patents: 1

Funded Grants (2022-2023, list in appendix 2)

Environmental/Ecology Sciences: 29

- Center for Environmental Studies: 3
- Department of Biological Sciences: 19
- Department of Chemistry and Biochemistry: 1
- Department of Geosciences: 6

Data Science: 11

- Department of Mathematics and Statistics: 5
- Department of Physics: 6

Biomedical Sciences: 16

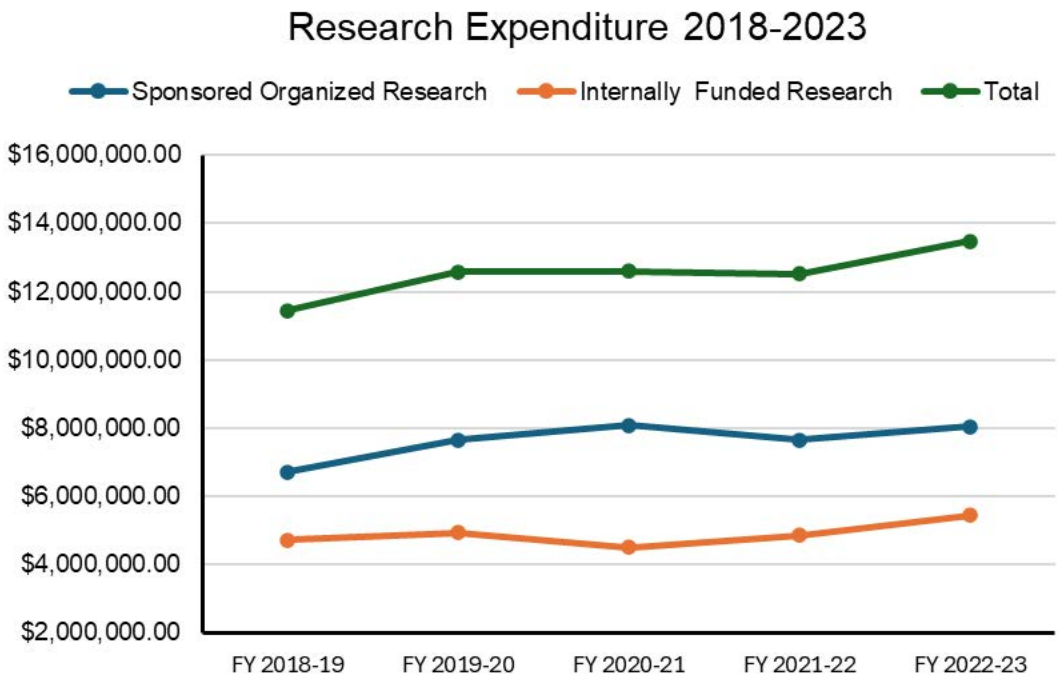
- Center for Complex Systems and Brain Sciences: 1
- Department of Biological Sciences: 1
- Department of Chemistry and Biochemistry: 4
- Department of Exercise Science and Health Promotion: 1
- Department of Psychology: 8
- Department of Urban and Regional Planning: 1

Education/Training: 2

- Department of Mathematics and Statistics: 1
- Department of Chemistry and Biochemistry: 1

Total Expenditures

Total research expenditures FY 2022-2023: $13,483,562



Outreach and Engagement

College-wide

- Frontiers in Science Public Lecture Series included six unique lectures throughout the Spring 2023 semester starting in January
- Schmidt College of Science hosted the inaugural Science Fest Apr. 14 throughout the Breezeway to more than 1,000 visitors, including area high school and middle school students, community members, FAU undergraduate and graduate students, who enjoyed science-related exhibitions and a student poster competition
- Nat and Dorothy Hyman Science Lecture: Managing Pollution of Urban Waters: Sources and Solutions with Sarah E. Hobbie, Ph.D., on Nov. 2

Center for Environmental Studies

- Marine Research Hub panel at the Fort Lauderdale International Boat Show on Oct. 26: Colin Polsky, Ph.D., served as an expert panelist
- Southeast Florida Regional Climate Leadership Summit Nov. 16 and 17: the Center for Environmental Studies; the School of Environmental, Coastal, and Ocean Sustainability; and the Center for Urban and Environmental Solutions participated in a summit that promoted their research and educational programs
- Riverwoods Field Laboratory offered a range of outreach activities, including boat eco-tours where guests learned about the success of the Kissimmee River Restoration

Project, which attracted 317 guests on 27 unique tours; as well as 10 student field studies with 142 middle school to university level students, two International Water Professionals workshops with 30 guests, and two South Florida Water Management District workshops with 22 guests
- Robert J. Huckshorn Arboretum located on the Jupiter campus, highlights our Florida ecosystems by featuring native trees and shrubs, and offered 44 learning opportunities and events serving hundreds of participants

Department of Biological Sciences

- FAU Marine Science Lab at Gumbo Limbo Nature Center Visitors' Gallery: 220,000+ visitors, and the lab exhibited at 15 community events
- Philip & Patricia Frost Museum of Science in Miami on World Ocean Day: Students from the Schmidt College of Science's Shark Lab, the Florida Atlantic Biomechanics Lab, and the Marine Science Lab volunteered their time on June 4, to share their research with hands-on displays and activities to over 3,400 attendees

Center for Urban and Environmental Solutions

- Visualizing Sea Level Rise Experiences in West Palm Beach, led by the FAU Center for Urban and Environmental Solutions provided community events throughout 2023 to showcase the results of sea level rise and storm surge to the public

Department of Exercise Science and Health Promotion

- Free community FAU-Well exercise program for older adults now in 35th year offered a well-rounded health-fitness program as a free community service for older adults, providing safe, supervised exercise based on individualized assessments

Department of Mathematics and Statistics

- FAU AMC8 Middle School Math Day was hosted by the Department of Mathematics and Statistics on Jan. 21
- The Department of Mathematics and Statistics hosted the 54th Southeastern International Conference on Combinatorics, Graph Theory & Computing on the Boca Raton campus, bringing together academics, researchers, and students from around the world on Mar. 6-10
- FAU High School Math Day, supported by the Department of Mathematics and Statistics, brought high school students to the Boca Raton campus for mathematical contests on Mar. 14
- The Florida Women in Math Day was held on Mar. 18 on the Boca Raton campus by the Department of Mathematics and Statistics and the FAU graduate student chapter of the Association for Women in Mathematics
- FAU Young CryptograpHers Summer Camp welcomed 50 talented female high schoolers from Jul. 24-28 to learn about cybersecurity from expert faculty and industry professionals (hosted in The Rubin and Cindy Gruber Sandbox)
- Cox Science Center and Aquarium Teacher STEM Open House in West Palm Beach on Oct. 13: the Master of Science in Teaching Mathematics program presented, "M is for Math in STEM: Leveraging Mathematics for Innovation in Science," and Machine

Perception and Cognitive Robotics Lab co-director and assistant professor of mathematics, William Hahn, Ph.D., gave a talk, "Exploring the Evolution of AI"
- Math Circle for Middle School Students is held bi-weekly each fall term by the Department of Mathematics and Statistics, and offers friendly competitions and games

Department of Physics

- FAU's Astronomical Observatory hosted a "Sidewalk Astronomy" event to view the Fall 2023 solar eclipse, known as the "ring of fire" on Oct. 14
- FAU's School of Architecture in the Dorothy F. Schmidt College of Arts and Letters and the Schmidt College of Science presented the panel discussion, "Mission to Mars: An Out of This World Proposition" on the Fort Lauderdale campus on Oct. 24
- The Department of Physics' Annual Pumpkin Drop and Carnival, held on Oct. 27, was ranked by the State University System's Board of Governors as the number one fall tradition among public Florida universities in 2023
- Ata Sarajedini, Ph.D., professor and Bjorn Lamborn Endowed Chair in Astrophysics, and John Renne, Ph.D., AICP, director of the Center for Urban and Environmental Solutions and professor of urban and regional planning, spoke at TEDx Delray Beach on Nov. 4: Ripple Effect where they discussed sustainable, resilient, and livable cities
- FAU's Astronomical Observatory has Open Viewing Nights each month throughout the year where the public can view the night sky from the observatory telescope and learn about the cosmos

In Partnership with the College and Other Joint Activities

- More than 200 Charles E. Schmidt College of Science students attended the annual Science Sophomore Social on Oct. 26, hosted by the Schmidt College of Science's Student Services and Advising Office and Pre-Health Professions Office
- The American Association of Colleges and Universities' (AAC&U) Office of Undergraduate STEM Education accepted two proposals from Florida Atlantic University, led within the Schmidt College of Science, to participate in the organization's Nov. 2023 Transforming STEM Higher Education Conference in Arlington, VA
- Lake Worth LagoonFest Nov. 5: The event had promotional exhibitions from the FAU Marine Science Lab, Florida Atlantic Biomechanics (FAB) Lab, Shark Lab, and the Department of Geosciences
- Visit Lauderdale Science Festival at the Museum of Discovery and Science in Fort Lauderdale on Mar. 3-4: the FAU Center for Environmental Studies tabled and showcased their Portable Solar Generator Exhibit and the FAU Marine Science Lab engaged guests with their Sea Turtle exhibit
- The Science Olympiad events occur each spring and attract hundreds of elementary, middle school, and high school students to enter science-based competitions through numerous disciplines
- FAU organized the Florida Summer Institute in Biostatistics and Data Science funded by the National Institutes of Health in the summer for undergraduate and graduate students to develop hands-on experience conceptualizing research questions,

determining and executing appropriate analyses, and interpreting results from three projects using real data

The Rubin and Cindy Gruber Sandbox

- FAU Mindfest Mar. 16-17: The gathering of world leaders in the fields of artificial intelligence, philosophy, and neuroscience included talks within The Rubin and Cindy Gruber Sandbox and included faculty from the Schmidt College of Science
- OpenAIS Symposium Dec. 4-5: Advances in AI Safety, Security, & Artificial Immune Systems was held in partnership with co-directors of The Rubin and Cindy Gruber Sandbox and faculty from the Schmidt College of Science

Advancement

Development (2023)

Total: $1,628,202

Donors: 142

- 758 unique gifts
- 224 alumni gifts
- 19 corporate gifts
- 461 faculty and staff gifts
- 18 foundation gifts
- 30 friends' gifts

Gift Intervals

- 2 gifts of $250k
- 3 gifts of $100k-250k
- 4 gifts of 50k-100k
- 12 gifts of $10k-50k
- 737 gifts of $1-10k

Alumni recognition

Maria Altieri, M.D. '03, Charles E. Schmidt College of Science FAU Alumni Association recognized her with a 2023 Distinguished Alumni award

Beth Bowers, PhD., '23, '19, '12 was interviewed by WLRN's 'All Things Considered' for her work with FAU's Elasmo Lab to discuss why blacktip sharks are spending more time farther north as oceans get warmer

Arthur C. Evans Jr., Ph.D., B.S. '82, M.A. '84, chief executive officer of the American Psychological Association, was featured in Florida Atlantic magazine providing mental health advice to readers

Jorge Gonzalez, Ph.D. '20, returned to the Boca Raton campus as a postdoctoral fellow to work with Dean Forbes as part of an interdisciplinary, multi-institutional study funded by the National Science Foundation's Rules of Life Program

Jeff Guertin, M.S. '10, is a biologist with Inwater Research Group in Jensen Beach. During his time at Florida Atlantic, Guertin gained hands-on experience not only with sea turtles, but also with the development, planning, and execution of a scientific project

Nicole Gutierrez, B.A. '23, accepted a position with COSMO International Fragrances following an internship with COSMO earlier in the year that she completed as part of the College's Science Internship Course

Jackie Kingston, M.S. '06, used the skills she learned at FAU to form an organization called Sea Turtle Adventures that could contribute to conservation efforts, educate the public about the marine environment, and provide nature-based programs for adults with special needs

Jessica Pate, M.S. '13, marine biologist, was featured in a *Science News* article about her mission to save endangered rays as the founder of the Florida Manta Project. Pate and colleagues recently discovered the first known manta ray nursery in Florida waters — and the third known nursery globally

Ivan Riveros, B.S. '21, PREPChem '22, was selected as a National Science Foundation Graduate Research Fellow, and is now pursuing his Ph.D. in chemistry at Massachusetts Institute of Technology

Nate Shanok, M.A. '17, Ph.D. '20, released his first novel in 2023 – he currently works as the director of the Delray Center for Brain Science, and also serves an adjunct professor in FAU's Department of Psychology

Alexis Sturm, M.S. '19, Ph.D. '23, began her prestigious NOAA John A. Knauss Marine Policy Fellowship in February 2023

Alexis Surtel, B.S. '23, began working with the National Institutes of Health in September 2023, as a postbaccalaureate Intramural Research Training Award trainee

Media Relations

Schmidt College of Science faculty and students are actively engaged in communicating their science to a wider public. Selected highlights of our media coverage include:

International and National Media

Department of Biological Sciences

- *BBC, IFLScience, LiveScience, National Geographic en Español, New York Post, USA Today, Smithsonian Magazine,* among many others: The walking shark study by Marianne Porter, Ph.D., was picked up by national and international media outlets, and reached tens of millions of people with an ad value equivalency of $5+ million

- BBC Science Focus: Here's How the Teenage Mutant Ninja Turtles Would Do in a Real-Life Fight - Could adolescent reptiles learn martial arts? Professor Jeanette Wyneken, Ph.D., and Ph.D. student Ivana Lezcano Serra explain
- CBS News: Nwadiuto Esiobu, Ph.D., discussed a possible rise in fatal flesh-eating bacterial infections due to global warming
- *CNET, Consumer Affairs, Esquire, Forbes, Men's Health, New York Post, The Independent, The Telegraph,* among many others*:* Wristband bacteria study led by Nwadiuto Esiobu, Ph.D., reaches worldwide audience, with 500+ media hits locally, nationally, and internationally reaching millions of viewers; ad Value Equivalency of $17+M; 36+ countries
- Good Morning America: Jeanette Wyneken, Ph.D., talked with ABC News' Rob Marciano to explore how the warming world is impacting the future of sea turtle populations
- *National Geographic:* Marianne Porter, Ph.D., discussed "Do Sharks Hold Their Breath Underwater?" in an article about scalloped hammerhead sharks
- *National Geographic:* Rindy Anderson, Ph.D., spoke about a study showing how dolphins use "baby talk" with their calves, a first among non-human species
- *National Geographic:* Stephen Kajiura, Ph.D., was featured in the highly popular series, "When Sharks Attack 360," along with Schmidt College of Science students Caroline Sullivan and Mackenzie Smith and FAU alumna Christine Bedore
- Nature on PBS showcases leatherback sea turtle research taking place at FAU's Marine Science Lab, including how FAU scientists are pioneering new ways to learn about the 20-30 years leatherback sea turtles spend at sea using miniaturized satellite tags
- NPR News reported on the Schmidt College of Science's Marine Science Lab, which has been conducting a sea turtle sex-ratio study for the past 20 years. Postdoctoral researcher in the lab and FAU alumna Chelsea Bennice, Ph.D., was interviewed
- *The New York Times*: Florida Turtle Nests Are Recovering. When They Hatch, Expect Mostly Girls - Climate change appears to be shifting the female-to-male balance in some populations of sea turtles, with Jeanette Wyneken, Ph.D.
- TODAY Show featured FAU sea turtle release and conservation efforts of Jeanette Wyneken, Ph.D., professor and director of the FAU Marine Science Lab in the longest national television segment for Florida Atlantic to date, running for more than eight minutes

Department of Geosciences

- Science Channel Discovery+ show "Brink of Disaster: Miami Sinking": Tiffany Briggs, Ph.D., interviewed for on beach nourishment projects in Miami

Department of Mathematics and Statistics

- *Scientific American:* William Hahn, Ph.D., featured as an expert in the article, "How AI Knows Things No One Told It"

Department of Physics

- *Physics Today* magazine: Ata Sarajedini, Ph.D., highlighted his "Astronomy Minute" podcast

- *USA Today:* Luc Wille, Ph.D., served as an expert where he discussed the intensity of the pressure and stresses on the Titan submersible

Department of Psychology

- *U.S. News & World Report* highlighted the work of Brett Laursen, Ph.D., for the first-of-its-kind study which shows life is harder for children who lack the traits valued by their peers

Department of Urban and Regional Planning

- Associated Press: First Private U.S. Passenger Rail Line In 100 Years is About to Link Miami and Orlando at High Speed; John Renne, Ph.D., said the Miami-Orlando corridor is a perfect spot for high-speed rail
- CNN interviewed Schmidt College of Science CUES Assistant Director Serena Hoermann, Ph.D., regarding the continued development of hurricane-prone zones and how it is weakening natural storm barriers
- Salon.com featured John Renne, Ph.D., about a post-car future being more equitable

Regional and Local Media

Center for Environmental Studies

- CBS12 News interviewed Colin Polsky, Ph.D., about the importance of current and future scientists to be able to identify, understand, and rectify our environmental challenges

Department of Biological Sciences

- CBS12: Can Sharks Help Detect When a Hurricane is Coming? with Stephen Kajiura, Ph.D.
- FOX13 Tampa Bay: Hotter Temps Heating Up Leatherback Turtle Nests, with Sarah Milton, Ph.D.
- *Florida Atlantic Magazine:* Ashkaan K. Fahimipour, Ph.D., interviewed for "Coral Connection: Working to Save the Reefs" and discussed how herbivory emerges in coral reef ecosystems is poorly understood
- *Florida Weekly Magazine*: Sea Turtles Are Wrapping Up a Record Nesting Season, with Jeanette Wyneken, Ph.D.
- *Miami Herald:* "Baby Sea Turtles are Baking in Florida's Hot Sun," with Sarah Milton, Ph.D., and her team's study was featured on the front page of the
- NBC6 interviewed Jeanette Wyneken, Ph.D., who shared that the sea turtle nesting Season in Broward was record-breaking, despite challenges
- *South Florida Sun Sentinel:* Sarah Milton, Ph.D., discussed how baby leatherback turtles are facing a double whammy of excessive heat and birth defects

Department of Chemistry and Biochemistry

- *Florida Trend magazine*: Gregg Fields, Ph.D., discussed the optimism of cancer treatment and therapy options for patients

Department of Geosciences

- Disney Parks blog: Showcased how to "travel like an expert" with Maria Fadiman, Ph.D.
- *Florida Trend Magazine:* Scott Markwith, Ph.D., study featured in "Sowing Solar: finding sites for millions of solar energy panels sparks a land rush in rural Florida as new installations consume larger swaths of acreage"
- Herbal Spot podcast: Maria Fadiman, Ph.D., featured to share aspects of her fascinating journey into the study of plants and people
- *Sun Sentinel, Yahoo News,* Earth.com*:* Weibo Liu, Ph.D., study on the loss of tidal flats was featured

Department of Physics

- Hubble Space Telescope ESA/Hubble "Picture of the Week": A photo of the globular cluster NGC 6652 taken by Ata Sarajedini, Ph.D.
- WPBF 25 News interviewed Luc Wille, Ph.D., at the annual Pumpkin Drop and Physics Carnival on Oct.27, an event that fuses fun and physics education

Department of Psychology

- WPTV: Florida Atlantic University Department of Psychology professor Robin Vallacher, Ph.D., joined other mental health experts for a WPTV feature about what a shorter work week means for employees and their overall well-being

Department of Urban and Regional Planning

- ABC 4 News, Charleston, SC: Faculty 'Takes the Hype' Out of Hurricanes with John Renne, Ph.D.
- Bisnow: Miami's Daily Floods and Disappearing Beaches, interviewed John Renne, Ph.D., about current projections that show Miami's worst-case scenario isn't far off
- The *South Florida Sun Sentinel* gave front-page coverage of a big-picture analysis by Schmidt College of Science researchers of how urban expansion has caused large-scale, irreversible damage to the Atlantic Coast and the Gulf
- WPTV: Simulation Shows Impacts of Storm Surge After Major Hurricane with John Renne, Ph.D., as part of the Visualizing Sea Level Rise experience in partnership with the city of West Palm Beach

Government Relations

Activities

- Florida state senators, representatives toured FAU's Marine Science Laboratory housed within the Gumbo Limbo Environmental Complex in Boca Raton throughout the Fall 2023 semester, including: state Senator Tina Scott Polsky (District 30), Representative Kelly Skidmore (District 92), Senator Erin Grall (District 29), as well as the staff from Representative Katherine Waldron (District 93), state Senate Minority Leader Lauren Book (District 35) and Representative Dan Daley's offices (District 96)

participated in lab tours led by renowned sea turtle scientist, Professor Jeanette Wyneken, Ph.D., Department of Biological Sciences

- United States Rep. Cory Mills (R-Fla.) visited Florida Atlantic University to tour FAU's quantum physics laboratory in the Charles E. Schmidt College of Science where Warner A. Miller, Ph.D., a professor of physics, provided an overview and demonstration of the nation's first drone-based, mobile quantum network housed at FAU
- Dean Forbes joined a delegation of students, faculty, and staff for FAU Day at the Capitol as part of the university's commitment to maintain strong connections between elected officials in Tallahassee and Florida Atlantic in Spring 2023
- The City of Stuart invited Serena Hoermann, Ph.D., assistant director of the Center for Urban and Environmental Solutions, to present "Planning for a Resilient City: All About the Water," on Sept. 11 at the city commission meeting to inform the city's board and constituents on trends and challenges for coastal cities such as Stuart when it comes to flooding and storm water management, and actions to support resiliency
- Colin Polsky, Ph.D., testified in Spring 2023 before the Florida Senate's Select Committee on Resiliency that more Floridians believe in climate change and want government action

Appendix 1: Faculty Publications and Patents for 2023

Department of Biological Sciences

Published Peer-reviewed Manuscripts

1. Joseph Niederhauser, Rindy Anderson. 2023. Spatial pattern of song-type sharing in Bachman's Sparrow. *Southeastern Naturalist*. 22(3):315-332. https://doi.org/10.1656/058.022.0304
2. Moorehouse, M.A., Baldwin, J.D. and Hart, K.M., 2023. Hawksbill and green turtle niche overlap in a marine protected area, US Virgin Islands. *Endangered Species Research*, 52, pp.265-283.
3. D. Cox, W. R. Brooks, 2023. The role of chemical cues in locating the host pelagic Sargassumspp. by the symbiotic fish Stephanolepis hispidus. *Symbiosis*, 90, 151–158. https://doi.org/10.1007/s13199-023-00924-w
4. The Roles of Potassium and Calcium Currents in the Bistable Firing Transition (https://doi.org/ 10.3390/brainsci13091347), senior-authored published at Brain Sciences, H-index 54
5. Glial Plasticity at Nervous System Transition Zones. Fontenas L, *Biology Open*, 2023. DOI:10.1242/bio.060037.
6. Biljana Ermanoska, Bob Asselbergh, Maria-Luise Petrovic-Erfurth, *et al.*, Tyrosyl-tRNA synthetase has a non-canonical function in actin bundling*, Nat Commun* 14, 999 (2023). https://doi.org/10.1038/s41467-023-35908-3

7. Bowers, ME, & SM Kajiura. A critical evaluation of the distribution of the blacktip shark, *Carcharhinus limbatus*, off the United States East Coast. *Environmental Biology of Fishes* 106:1797–1813.
8. Koch, M.S., McNicholl, C., Manfrino, C. Lapointe. (2023) Stable carbon and oxygen isotopes indicate photophysiology and calcification mechanisms of abundant reef macroalgae on Little Cayman Island reefs. *Journal of Applied Phycology*. https://doi.org/10.1007/s10811-023-03079-9 2.
9. MacLeod, K., Koch, M.S., C. R. Johnson, C. J. Madden. (2023) Resilience of recruiting seagrass (*Thalassia testudinum*) to porewater H2S in Florida Bay. *Aquatic Botany*. 187:1-11.
10. Wellman, E. H., Trackenberg, S. N., Gilliland, V. A., Titus, E. F., Gittman, R. K., & McCoy, M. W. (2023). Evaluating impacts of non-native submerged aquatic vegetation on native nekton. *Ecosphere*, 14(5), e4511.
11. Davidson, A. T., Stunkle, C. R., Armstrong, J. T., Hamman, E. A., McCoy, M. W., & Vonesh, J. R. (2023). Warming and top-down control of stage-structured prey: linking theory to patterns in natural systems. *Ecology*, e4213.
12. Seaman, HA, and SL Milton. "Impacts of Nest Temperatures on Leatherback Reproductive Success, Hatchling Morphology, and Performance in South Florida." *Endangered species research*, 51 (2023): 305–317.
13. Ortega J, J Wyneken, M Francis, M M Garner. Aneurysm associated with vascular wall degeneration in bearded dragons (Pogona vitticeps). *Journal of Veterinary Pathology*. 2023. doi.org/10.1177/03009858231214025
14. Fuentes, M.M.B.P, Abreu-Grobois, A., Garcia, A.R., Al-Khayat, *et al.,* 2023. Adaptation of sea turtles to climate change: will phenological responses be sufficient to counteract changes in reproductive output? *Global Change Biology*. 2023;00:e16991,
15. Kuschke SGs, Wyneken J, Cray C, Turla E, Kinsella M, Miller DL. 2023. Fusarium spp. an emerging fungal threat to leatherback (Dermochelys coriacea) eggs and neonates. Frontiers in Marine Science.;10:1170376.
16. Catron Ss, Roth Ss, Zumpano Fs, Bintz Js, Fordyce JA, Lenhart S, Miller DL, Wyneken J. 2023. Modeling the impacts of temperature during nesting seasons on Loggerhead (Caretta caretta) Sea Turtle populations in South Florida. *Ecological Modelling*, 481, p.110363.
17. Ashkaan K. Fahimipour, Michael A. Gil, Maria Rosa Celis, and Andrew M. Hein, Wild animals suppress the spread of socially transmitted misinformation, *Proc. Nat. Acad. Sci.*, 2023, 120 (14) e2215428120.
18. Massing JC, Fahimipour AK, Bunse C, Pinhassi J, Gross T. Quantification of metabolic niche occupancy dynamics in a Baltic Sea bacterial community. *mSystems*. 2023, 29;8(3):e0002823. doi: 10.1128/msystems.00028-23.
19. Byron T. Belcher, Eliana H. Bower, Benjamin Burford, *et al.*, Demystifying image-based machine learning: a practical guide to automated analysis of field imagery using modern machine learning tools, *Front. Mar. Sci.*, 2023, 10: doi.org/10.3389/fmars.2023.1157370
20. Joshua Ladau, Ashkaan K. Fahimipour, Michelle E. Newcomer, *et al*., Microbial invasions and inoculants: a call to action, *EcoEvoRxiv*, 2023, doi.org/10.32942/X2KP49.
21. Forbes VE, Accolla C, Banitz T, Crouse K, Galic N, Grimm V, Raimondo S, Schmolke A, Vaugeois M. 2023. Mechanistic Population Models for Ecological Risk Assessment and

Decision Support: The Importance of Good Conceptual Model Diagrams. *Integr Environ Assess Manage*. https://doi.org/10.1002/ieam.4886.

22. Crouse K, Accolla C, Banitz T, Galic N, Grimm V, Schmolke A, Vaugeois M, Forbes VE. 2023. Pop-CMD web app user manual. DOI: 10.13140/RG.2.2.30490.62408.
23. Madeleine Hagood*, Joseph Alexander, Marianne E. Porter. Relationships in shark skin: mechanical and morphological properties vary between sexes and among species. Integrative and Comparative Biology. Published August 12, 2023. https://doi.org/10.1093/icb/icad111
24. Danielle Ingle, Eliza Perez, Marianne E. Porter, and Christopher Marshall. Feeding without teeth: Rhamphotheca material properties from two species of durophagous sea turtles. Royal Society Open Science. Published April 19, 2023. https://doi.org/10.1098/rsos.221424
25. Mendonca, J., Wertheimer, B., Dixon, D., Stone, B., Dawkins, K., Christian, M. and Esiobu, N. (2023) Prevalence and Disinfection of Bacteria Associated with Various Types of Wristbands. Advances in Infectious Diseases, 13, 193-209. doi: 10.4236/aid.2023.132018.

Manuscripts Submitted, In Revision, or In Press

1. Bowers, ME, & SM Kajiura. Narrowing the gap: A novel process that regularizes discontinuous passive telemetry data. *Methods in Ecology and Evolution* (2023).
2. Kajiura, SM, MW McCoy & JM Waldron. Seasonal abundance and spatial distribution of two batoid species in southeast Florida. *Environmental Biology of Fishes* (2023).
3. Sullivan, CL, ER Gerstein, SM Kajiura. Orientation of blacktip sharks (*Carcharhinus limbatus*) to underwater sound. *Integrative Organismal Biology* (2023).
4. Goodnight, Sarah and Michel W. McCoy, Cannibalism and competition can increase parasite abundance for parasites with complex life history strategies. *Ecology* (2023).
5. Goodnight, Sarah, Titus, E. and M. W. McCoy, Oral parasites alter acoustic signals and mate choice in frogs. *The American Naturalist* (2023).
6. Kajiura, Stephen, J. Waldron, and M. W. McCoy, Seasonal abundance and spatial distribution of two batoid species in southeast Florida. *Environmental Biology of Fishes* (2023).
7. Eleanor Baker and M.W. McCoy, Evaluating a Predator-Induced Phenotype in a Mixed-Species Context. *Oecologia* (2023).
8. Xie L, Slotsbo S, Ilyaskina D, Forbes VE, Holmstrup M. Chronic effects of an insect growth regulator (teflubenzuron) on the life cycle and population growth rate of Folsomia candida. Environ Toxicol Chem (2023).
9. Galic N, Forbes VE, Grimm V, Schmolke A, Vaugeois M, Brain R. (Submitted). Ecological risk assessment when species-specific data are scarce: how trait-based approaches and modeling can help. *BioScience* (2023).
10. Brain R, Forbes VE. 2024. Improving the science behind the process: Implementing better data and tools to streamline the FIFRA/ESA process. *Council for Agricultural Science and Technology* (2023).

Books and Book Chapters

1. Michelle Cavallo, Why You Have to Take This Course: An Introductory Biology Text (TH Bundle), (2023), Top Hat Publisher, ISBN: 9781778772702

Book Chapters in Press

1. Rindy Anderson, Birdsong function: the established perspective, advances, and an expanded view. *New Perspectives in Ornithology*, edited by V. Scott Edwards and Michael Reed (2023).

Department of Chemistry and Biochemistry

Published Peer-reviewed Manuscripts

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Department of Urban and Regional Planning

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19. Li, Yanmei. (2023). Chapter 21, Housing in Asia. In Anacker, K. B., Carswell, A. T., Kirby, S. D., and Tremblay, K. R. (Eds.). *Introduction to Housing* (2nd. Ed).
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*Indicates student co-author

Patents

Invention Disclosures

1. Warner Miller, A Low SWAP One-Way PAT System for sUAVs and Mobile Platforms.
2. Warner Miller, A Redundant Self-Contained Autonomous Payload System for sUAVs and Mobile Platforms.
3. Anton Oleinik, Triceratops Leg Photograph.
4. Vivian Merk, Preparation and Chemical Functionalization of Chitin Aerogels Derived from Mushrooms.
5. James Hartman, Treatment of Androgen Dependent Prostate Cancer with Drugs in Combination.
6. James Hartman, Use of Calcitrol to Enhance the Effectiveness of Dienogest in the Therapy of Endometriosis.
7. Salvatore Lepore, Howard Prentice, Shailaja Allani, Herbert Weissbach, Ken Dawson-Scully, Bridged Bicyclic Compounds and their Derivatives as Agents to Protect the Cardiovascular System Against Damage Resulting from Ischemia and Ischemia/Reperfusion and Methods of Use Thereof.
8. Renjie Wang, Andrew Terentis, Ionophore-Based Ion-Selective Sensing Utilizing Surface-Enhanced Raman Spectroscopy.
9. Sang Wook Hong, Protocols of Transcranial Electric Stimulation to Enhance Human Cognitive Functions.

Provisional Patent Applications

1. Maciej Stawikowski, Qi Zhang, Fluorescent Lipid Compounds, 2023, Application/Provisional Number: 63/490,354.
2. Edward De La Uz, Vivian Merk, Chitin Aerogels and Mineralized Aerogels Derived from Biomass, 2023, Application/Provisional Number: 63/587,849.
3. James Hartman, Treatment of Cancer with Drug Combinations, 2023, Application/Provisional Number: 63/601,425.
4. Salvatore Lepore, Howard Prentice, Shailaja Allani, Herbert Weissbach, Ken Dawson-Scully, Bridged Bicyclic Compounds as Cardiovascular Protective Agents, 2023, Application/Provisional Number: 63/589,493.
5. Predrag Cudic and Jay McLaughlin, Methods of Identifying Opioid Cyclic Peptides, 2023, Application/Provisional Number: 18/167,350.

Issued Patents

1. Predrag Cudic and Jay McLaughlin, Cyclic Peptides, Cyclic Peptide Conjugates and Methods of Use Thereof, 2023, US Patent Number: 11,578,100.

Appendix 2: Funded Grants

PI Name	Sponsor	Title	Start Date	End Date	Total $
Anderson, Rindy	US Department of Education	MDC Stem PACTS grant	5/9/2022	5/31/2023	$12,000.00
	US Department of Education	MDC StemPactS - Summer 2023	1/25/2023	9/30/2023	$17,918.00
Baldwin, John	National Parks Conservation Association	Graduate student research related to protection and restoration of the Greater Everglades and/or coral reef ecosystems.	2/15/2022	2/15/2025	$5,000.00
Fahimipour, Ashkaan	National Science Foundation	URoL:EN: Emergence of function and dynamics in ecological interaction networks	10/1/2022	9/30/2027	$381,027.00
Forbes, Valery	Syngenta Crop Protection, LLC	Using ecological models for pesticide risk assessment of listed species and evaluating the effectiveness of mitigation & recovery actions: an application to freshwater mussels	10/21/2022	12/31/2024	$125,000.00
	Syngenta Crop Protection, LLC	Using ecological models for pesticide risk assessment of listed species and evaluating the effectiveness of mitigation & recovery actions: an application to freshwater mussels	10/21/2022	12/31/2024	$6,717.51
Hartmann, James	Non-institutional donor	Cancer and Endometriosis Research	4/22/2022	6/30/2024	$13,640.00
Kersten, Alan	National Institute on Aging	Influences of Executive and Memory Functioning on Memory for the Sources of Actions and Words	8/15/201	7/31/2023	$437,674.00
Kajiura, Stephen	Colgan Foundation	FAU FND-Quantification Massive Seasonal Shark	2/1/2022	6/30/2025	$7,500.00

		Aggregations in Palm Beach County SCI095			
	Bonefish & Tarpon Trust	Aerial Surveys to Estimate Abundance of Atlantic Tarpon during Annual Migration (Key Biscayne to Bahia Honda Channel)	1/24/2023	1/31/2024	$104,196.00
	Colgan Foundation	FAU FND-Quantification Massive Seasonal Shark Aggregations in Palm Beach County SCI095	2/1/2022	6/30/2025	$67,300.00
	Bonefish & Tarpon Trust	Aerial Surveys to Estimate Abundance of Atlantic Tarpon during Annual Migration (Key Biscayne to Bahia Honda Channel)	1/24/2023	1/31/2024	$4,833.00
Koch-Rose, Marguerite	South Florida Water Management District	FY22 SAV Assessments	5/20/2022	12/31/2023	$40,000.00
	South Florida Water Management District	FAU SAV Assessments FY 23	1/1/2023	6/30/2024	$40,000.00
Milton, Sarah	Inwater Research Group, Inc.	Physiology and Health Studies of Green Sea Turtles in Southeast Florida	10/1/2021	9/30/2024	$12,525.00
	Inwater Research Group, Inc.	Physiology and Health Studies of Green Sea Turtles in Southeast Florida	10/1/2021	9/30/2024	$6,262.50
Porter, Marianne	National Science Foundation	Supplement: NSF CareerResearch Experience for Post-Baccalaureate Students (REPS) in the Biological Sciences Supplemental Funding Opportunity	6/1/2020	5/31/2025	$128,207.00
Wyneken, Jeanette	Nelligan Marine Turtle Research Support	Nelligan Sea Turtle Research	2/1/2022	6/30/2024	$21,424.00

	Upwell	Leatherback Captive Rearing and Release Research Initiative	5/1/2022	6/30/2024	$40,494.00
	Sea Turtle Conservancy	Swimming kinematics to understand neonate sea turtle dispersal	5/1/2023	4/30/2024	$3,714.75
	Sea Turtle Conservancy	Swimming kinematics to understand neonate sea turtle dispersal	5/1/2023	4/30/2024	$11,144.57
	Nelligan Marine Turtle Research Support	Nelligan Sea Turtle Research	2/1/2022	6/30/2024	$1,500.00
	Nelligan Marine Turtle Research Support	Nelligan Sea Turtle Research	2/1/2022	6/30/2024	$53,700.00
Zhang, Xing-Hai	Penta 5 USA LLC	Efficacy assessment of a plant-based pesticide on bed bug mortality	7/1/2023	6/30/2024	$4,600.00
Petersen, Michelle	US Army Corp of Engineers	Wading Bird Colony Location, Size, and Timing in Lake Okeechobee (CA W912HZ-19-2-0040)	9/26/2021	9/25/2024	$94,430.00
	US Army Engineer Research & Development Center	Dry season prey concentration	4/21/2022	4/20/2024	$212,857.00
Alexander, William	US Air Force Office of Scientific Research	The neural architecture of reinforcement learning in partially observable environments	9/28/2020	9/27/2024	$79,089.00
Polsky, Colin	US Geological Survey	Greater Everglades Technical Meetings & Research Support	9/1/2021	8/31/2024	$150,000.00
	The Everglades Foundation	Curriculum Partnership for K-12 Education and Outreach Prepared for The Everglades Foundation	1/1/2021	6/30/2024	$32,000.00
	South Florida Water Management District	Riverwoods [RESEARCH 25% IDC] Field Lab Maintenance, Security, Technical Support and Environmental Outreach Cooperative	10/1/2022	9/30/2024	$195,000.00

		Agreement FY23-FY25			
	South Florida Water Management District	Riverwoods [SITE 8% IDC] Field Lab Maintenance, Security, Technical Support and Environmental Outreach Cooperative Agreement FY23-FY25	10/1/2022	9/30/2024	$144,056.00
	Archbold Expeditions, Inc.	Archbold-FAU: The Florida Wildlife Corridor Climate Resilience Report, 20232024	5/1/2023	2/29/2024	$108,168.75
Zourdos, Michael	Renaissance Periodization, LLC	Exploring Predictors of Individual-level Skeletal Muscle Adaptations to Different Resistance Training Volumes	11/1/2022	10/31/2024	$6,000.00
Cudic, Predrag	National Institute of Allergy and Infectious Diseases	Targeting polymicrobial infections of diabetic foot ulcers with a novel antimicrobial peptide therapy	7/1/2022	1/31/2024	$7,000.00
Louda, J. William	South Florida Water Management District	Chemotaxonomic Analysis of Phytoplankton in St. Lucie Estuary: Relationship to Freshwater Inflows and Water Quality	1/1/2022	5/15/2024	$16,585.00
Stawikowski, Maciej	PHS - National Institutes of Health	Investigating intracellular cholesterol distribution and trafficking using novel environment-sensitive cholesterol probes	9/1/2022	8/30/2025	$435,581.00
Yildirim, Ilyas	PHS - National Institutes of Health	In Silico Drug Design Targeting RNA Repeat Expansions	4/1/2022	3/31/2025	$90,396.00
Comas, Xavier	US Department of Energy	Predicting hot spots and hot moments of biogenic gas accumulation and release in a subtropical ecosystem using airborne ground-	9/1/2021	8/14/2024	$54,100.50

		penetrating radar (GPR)			
	US Department of Energy	MACROCOSM: Monitor And Constrain tROpical eCOsystem Sensitivity to Moisture	9/1/2022	8/31/2024	$59,885.00
	UF - Florida Sea Grant	Monitoring the effects of salt water intrusion for soil strength in the Everglades using geophysical methods: implications for peat collapse during sea level rise.	1/1/2023	12/31/2023	$9,999.00
Zhang, Caiyun	National Aeronautics and Space Administration	Developing Sensor-based Models for Mapping Greenhouse Gas Exchanges and Evapotranspiration from Wetlands in the Greater Everglades	9/1/2022	5/8/2024	$24,904.00
	St. John's River Water Management District	REMOTE SENSING AND MAPPING OF PLANT COMMUNITIES FOR THE PRESERVATION OF NATURAL SYSTEMS	1/10/2023	9/30/2024	$50,000.00
	Florida Fish and Wildlife Conservation Commission	REMOTE SENSING AND MAPPING OF PLANT COMMUNITIES	5/25/2023	9/1/2026	$191,706.00
Chang, Lun-Ching	PHS - National Institutes of Health	Impact of COVID on VCID Outcomes in a Multicultural Rural Population	9/1/2021	8/31/2023	$30,340.00
	National Institute of Neurological Disease/Stroke	Reducing Disparities in Dementia and VCID Outcomes in a Multicultural Rural Population	9/1/2021	8/31/2024	$29,900.00
Hoffman, Frederick	Various Agencies - Program Income	Program Income for CGTC54 (2023)	8/1/2022	3/6/2024	$40,286.00
	National Security Agency	53rd and 54th Southeastern International Conference on Combinatorics, Graph Theory and Computing	3/7/2023	3/6/2024	$19,020.00

Kalies, William	US Air Force Office of Scientific Research	Mathematically Justified Computational Platform for Nonlinear Dynamics	11/1/2022	10/31/2023	$57,970.00
Lundberg, Erik	Simons Foundation	Probabilistic and extremal problems of real and complex polynomials	9/1/2020	8/31/2025	$8,400.00
Mireles-James, Jason	National Science Foundation	Fine structure in Hamiltonian systems	7/1/2023	6/30/2026	$299,717.00
Nikolova, Daniela	Various Agencies - Program Income	Program Income for CCGTA 2022	7/1/2022	6/30/2023	$4,900.00
Persichetti, Edoardo	National Security Agency	NCAE-C: Exploring Innovative Approaches for Post-Quantum Authentication	9/16/2022	9/16/2024	$298,989.00
Tuncer, Necibe	Virginia Tech University	Identifiability Investigation of Multiscale Infections Disease Models	9/27/2023	7/31/2024	$47,199.00
Wang, Yuan	Institute for Advanced Study	5th Florida Women in Math Day 2023	9/1/2022	5/31/2024	$4,000.00
Engle, Jonathan	National Science Foundation	Dynamics and Symmetry in Quantum Gravity	6/1/2022	5/31/2024	$65,000.00
Han, Muxin	National Science Foundation	Loop Quantum Gravity with Cosmological Constant	5/15/2022	4/30/2025	$47,928.00
Miller, Warner	L3 Harris Corporation	Phase 3: Toward Mobile Quantum Links	7/8/2022	12/31/2022	$40,000.00
Muhammad, Wazir	South Florida Proton Therapy Institute	Clinical effectiveness and production yield enhancement of prompt gamma rays during proton therapy	6/1/2023	5/31/2024	$105,000.00
Sarajedini, Ata	National Aeronautics and Space Administration	Opening the Window on Galaxy Assembly: Ages and Structural Parameters of Global Clusters Towards the Galactic Bulge	1/1/2018	12/31/2022	$10,167.00
	National Aeronautics and Space Administration	Opening the Window on Galaxy Assembly: Ages and Structural Parameters of Global Clusters Towards the Galactic Bulge	1/1/2018	12/31/2022	$10,165.00

Barenholtz, Elan	National Institute of Drug Abuse	National Drug Early Warning System Coordinating Center	3/1/2022	2/29/2024	$52,716.00
Jones, Nancy	National Institutes of Mental Health	Precursors of Anxiety: The role of Lateralized brain activation and maternal sensitivity	2/1/2022	12/31/2024	$133,739.00
Rosselli, Monica	University of Florida	1 Florida ARDC Consensus Conference	7/1/2022	6/30/2023	$29,766.15
	National Institute on Aging	1Florida Alzheimers Disease Research Center	5/1/2021	4/30/2024	$37,279.03
	PHS - National Institutes of Health	Prospective study of bilingualism and cognitive reserve in the aging brain of Hispano/Latino adults with MCI	2/15/2023	1/31/2025	$615,996.00
Stackman, Robert	Max Planck Florida Institute of Neuroscience	FAU MPFI Data Neuroscience Collaboration	8/6/2021	8/5/2023	$30,000.00
	Max Planck Florida Institute of Neuroscience	2023 MPFI Individual Performance Awards (Spring & Summer)	4/7/2023	8/4/2023	$123,292.61
Varela Castro, Maria Del Carmen	National Institutes of Mental Health	Optimizing sleep spindle measurements as translational assays of memory consolidation	1/1/2021	8/6/2023	$15,307.00
	National Institutes of Mental Health	Optimizing sleep spindle measurements as translational assays of memory consolidation	1/1/2021	8/6/2023	$109,204.53
Wetherell, Geoffrey	The Society for Psychological Study of Social Issues	How conformity with traditional masculine norms and precarious manhood predict support for political policies limiting the participation of women in the public sphere, and their rights in the domestic	9/1/2022	8/31/2023	$1,947.00
Mitsova, Diana	PHS - National Institutes of Health	Objectively measured neighborhood greenness in midlife and late life cognitive and brain imaging outcomes for	5/15/2022	4/30/2024	$30,589.84

		Alzheimers disease: The Multi-Ethnic Study of Atherosclerosis			
	Alzheimer's Association	Neighborhood segregation and longitudinal change in brain health measures	2/1/2022	1/31/2025	$7,626.00
	Alzheimer's Association	Neighborhood segregation and longitudinal change in brain health measures	2/1/2022	1/31/2025	$3,741.00
	PHS - National Institutes of Health	Objectively measured neighborhood greenness in midlife and late life cognitive and brain imaging outcomes for Alzheimers disease: The Multi-Ethnic Study of Atherosclerosis	5/15/2022	4/30/2024	$31,611.46