



# RESEARCH

**QUARTERLY RESEARCH REPORT**

APRIL 2026

**TANJU KARANFIL**

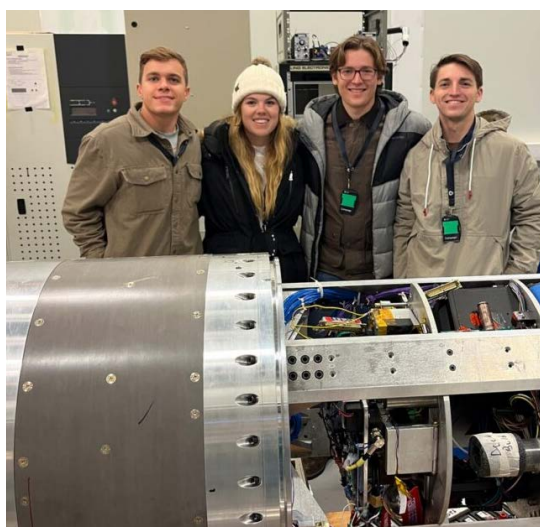
SENIOR VICE PRESIDENT FOR RESEARCH,  
SCHOLARSHIP AND CREATIVE ENDEAVORS



From the Senior Vice President for Research, Scholarship and Creative Endeavors

## Clemson's strong research culture is essential to providing a No. 1 student experience.

Investments made to expand and strengthen our research enterprise in the past decade are yielding significant returns, reflected not only in our overall research activity — Clemson is now [the top research institution in the state](#) in total research and development expenditures — but also in providing a premier, No. 1 student experience. Research elevates the value of a Clemson degree and provides exceptional experiences for students.



Clemson students Matthew Hall, Regan O'Neill, Andrew Hodge and James Davis stand in front of the sounding rocket in which their experiment was launched into space through NASA's GHOST program.

A group of physics and astronomy students, for example, traveled to Norway to participate in a NASA rocket mission. Chemistry major Lukas Garcia developed an AI company through Creative Inquiry research and is competing in entrepreneurial pitch competitions both in South Carolina and around the country. A team of data science students worked with an Ohio energy company to evaluate environmental risks. Audio technology student Rob Martin helped build a virtual reality experience to give hospice patients one last great moment with family. First-year students Alejandra Rodriguez and Prasamsa Tatineni invented a device to detect patient infection before visible signs appear. I have included numerous examples of student success on [pages 13-15](#) that highlight the impact research has on the student experience at Clemson.

Several of the projects highlighted began with Creative Inquiry, which provides unmatched research opportunities to about 4,500 undergraduate students each year. Research is ingrained in our culture, and our graduates are highly skilled and highly sought-after.

Our students are special. Clemson is special. The strategic investments and initiatives we've made to strengthen research are delivering benefits across the university. Our No. 1 student experience is a powerful example. In March, we officially [opened the new Advanced Materials Innovation Complex \(AMIC\)](#), a powerful new platform for innovation and education. Students will receive exceptional research experiences here. AMIC provides a high-tech, modern space that promotes multidisciplinary research and education that supports the aerospace, healthcare, electronics, energy and transportation industries, among others. These are key sectors in our state, and the students learning at AMIC will be ready to lead them. At Clemson, we pursue meaningful research that aligns with state and federal priorities and prepares Clemson students to be highly competitive job candidates.

Our faculty members also continue to be successful. Two faculty members, for example, were named 2025

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### No. 1 Student Experience

More than **4,500** undergraduate students participate in Creative Inquiry **research** each year.

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## From the Senior Vice President for Research, Scholarship and Creative Endeavors

Fellows of the American Association for the Advancement of Science (AAAS), one of the highest honors in the scientific community. Another faculty member received the Order of the Palmetto, the highest civilian honor awarded by the state. One of our faculty members was honored by Gov. Henry McMaster for her work in getting middle schoolers across the state interested in science. We have numerous faculty earning prestigious fellowships and national and international awards in recognition of the impact they are having in their fields and their communities. Examples are on [pages 16-18](#).

To illustrate the breadth of research, scholarship and creative work happening at Clemson, the Focus on Faculty section on [pages 20-27](#) provides profiles of faculty members from each college. This report specifically highlights junior faculty members, the rising young stars who lead into the future. I am greatly encouraged by the quality of our early-career faculty.

Faculty from every discipline at Clemson continue to pursue new research and creative projects that aim to transform lives. Through the second quarter of FY2026, Clemson researchers have submitted \$430 million in competitive proposals and earned \$130 million in research awards. Details on research expenditures and awards, including a list of the top grants received during the second quarter, are in the Research Metrics section on [pages 4-11](#).

Our research matters. Clemson collaborates broadly with federal sponsors, industry partners and community stakeholders to advance innovation that enhances economic prosperity and quality of life.

I have great pride in the research at Clemson and the impact it has on our community and our No. 1 Student Experience. Our strategic research investments are paying dividends, positioning Clemson as one of the nation's top-tier research universities that drives economic development across our state and the broader region. Go Tigers!



Sincerely,

**Tanju Karanfil**, Ph.D., PE, BCEE, IWA Fellow

Senior Vice President for Research, Scholarship and Creative Endeavors

Clemson University



# RESEARCH

## RESEARCH METRICS

*This section covers institutional research productivity with data on proposal submissions, awards and expenditures.*

### Executive Summary

- Total R&D expenditures at Clemson increased to \$368 million at Clemson in 2025 ([page 5](#)).
- Competitive expenditures were \$95 million through the second quarter of FY2026. Details on expenditures by business unit, innovation cluster, funding source and per tenure/tenure-track faculty member are included on [pages 6-7](#).
- Proposal submissions were \$433 million through the second quarter of FY2026. Details on proposals per college, along with targets for FY2026, are on [page 8](#).
- Research awards through the second quarter were \$130 million. Details on awards per college are on [page 9](#).
- Clemson faculty remain successful at earning high-value awards. A list of the largest grants received in FY2026 is on [pages 10-11](#).

**The tables on the following pages provide details on proposal submissions, awards and expenditures per college/unit. Abbreviations used in the tables are listed below.**

**CAAC:** College of Architecture, Art & Construction

**CAH:** College of Arts & Humanities

**CAFLS:** College of Agriculture, Forestry & Life Sciences

**CBSHS:** College of Behavioral, Social & Health Sciences

**CECAS:** College of Engineering, Computing & Applied Sciences

**COE:** College of Education

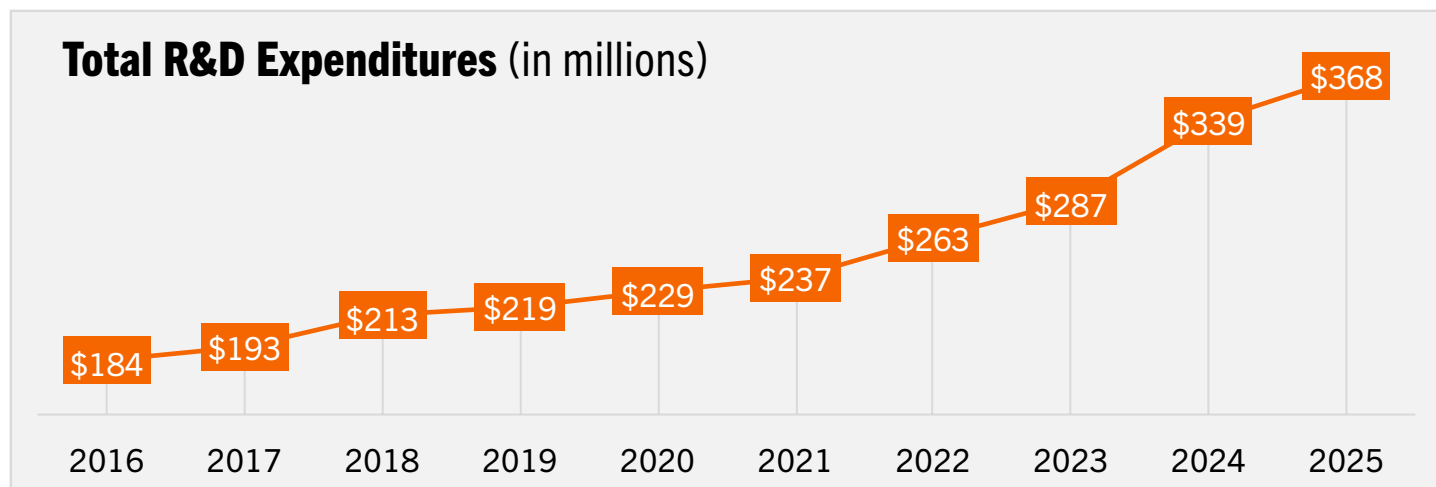
**COB:** Wilbur O. and Ann Powers College of Business

**COS:** College of Science

# Total R&D Expenditures

Clemson's total R&D expenditures reached \$368 million in FY2025, as shown in the graph below. This data includes expenditures on all research revenue, including state support, gifts, external research services, competitive awards and other sources, as reported to the National Science Foundation Higher Education Research and Development (HERD) Survey.

The table below shows various outputs (Ph.D. productivity, licensing revenue, patents, etc.) and the size of the workforce supporting research activity at Clemson.



	2022	2023	2024	2025	2nd Quarter 2026
NIH R01-Equivalent Awards	1	6	2	3	1
Doctorates Awarded	242	285	310	318	234
STEM Doctorates Awarded	172	190	197	220	158
Disclosures	50	61	76	73	37
Patents	33	11	13	11	5
Licenses/Options	27	16	20	4	6
Licensing Revenue	\$380,286	\$392,162	\$387,274	\$410,660	\$87,555
Start-up Companies (based on licenses/options)	4	4	7	8	3
Supporting Workforce					
Graduate Student Enrollment	5,448	6,401	5,872	5,676	5,485
Sponsored Graduate Research Assistants	729	926	1,049	1,031	792
Postdoctoral Fellows	117	112	141	151	151
Research Faculty: Permanent 100% Non-E&G Funded	2	5	4	3	3
Research Faculty: Temporary 100% Non-E&G Funded	32	28	36	56	53

# Competitive Expenditures (2nd Quarter FY2026)

Competitive expenditures were \$95 million through the second quarter of FY2026. Competitive expenditures include funds only from competitively bid projects, such as federal grant awards.

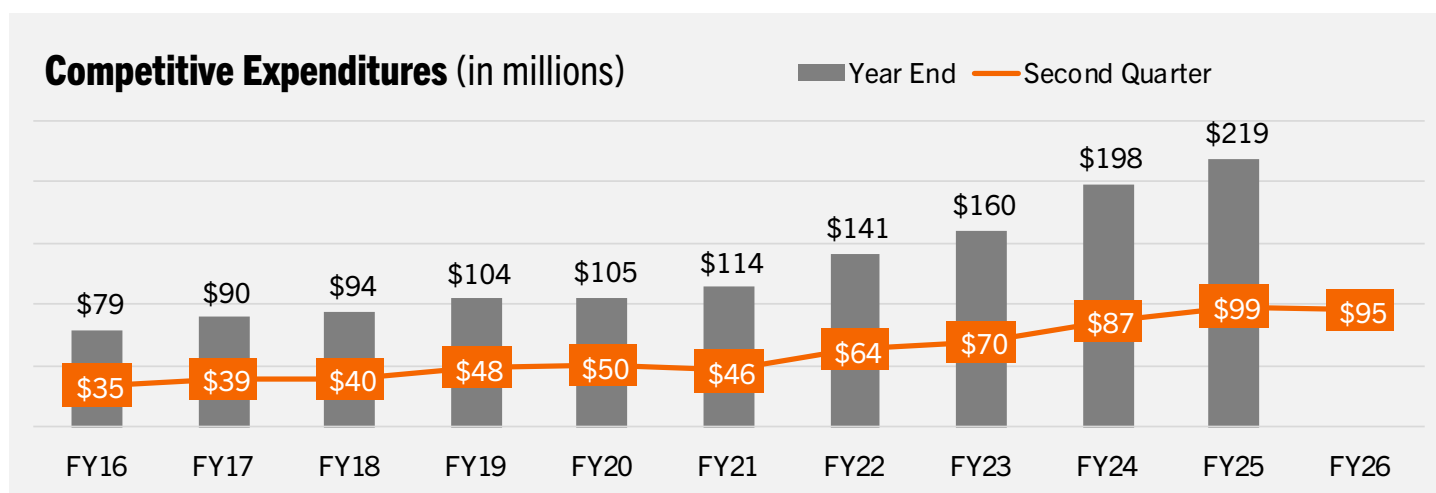
Additional details on expenditures by business unit, innovation cluster, funding source and per tenure/tenure-track faculty member are included in the table on the next two pages.

The graph on the following page compares annual competitive expenditure data over the past decade. The orange line shows expenditures for the second quarter for each fiscal year and bar shows year-end data.

Research Expenditures (millions)	2022	2023	2024	2025	2nd Quarter 2026
By Business Unit	\$141.4	\$160.3	\$198.5	\$218.5	\$95.3
CAAC	\$1.1	\$1.3	\$1.8	\$1.9	\$1.1
CAH	\$0.2	\$0.6	\$1.0	\$1.4	\$0.5
CAFLS	\$25.0	\$29.7	\$40.7	\$45.8	\$17.8
COB	\$0.7	\$1.0	\$1.4	\$1.6	\$0.8
CECAS	\$71.7	\$76.0	\$88.6	\$95.9	\$42.1
CBSHS	\$12.0	\$16.7	\$21.1	\$27.1	\$11.4
COE	\$3.8	\$5.6	\$6.6	\$7.0	\$5.0
COS	\$18.5	\$23.1	\$28.0	\$28.7	\$12.7
VP for Res & Interdisc Inst	\$7.0	\$6.2	\$7.6	\$6.9	\$2.8
All Other	\$1.5	\$1.6	\$1.8	\$2.2	\$1.2
By Innovation Cluster	\$141.4	\$160.3	\$198.5	\$218.5	\$95.3
Advanced Materials	\$18.6	\$21.1	\$23.6	\$25.6	\$10.9
Cyberinfrastructure & Big Data Science	\$8.2	\$7.7	\$8.6	\$9.8	\$4.9
Energy, Trans. & Advanced Manufacturing	\$27.7	\$29.5	\$32.0	\$34.5	\$15.8
Health Innovation	\$26.3	\$30.5	\$38.7	\$42.9	\$17.3
Human Resilience	\$14.8	\$19.1	\$24.2	\$25.8	\$13.6
Sustainable Environments	\$26.8	\$33.7	\$49.7	\$55.9	\$21.0
Other	\$19.6	\$20.2	\$21.7	\$24.1	\$11.8

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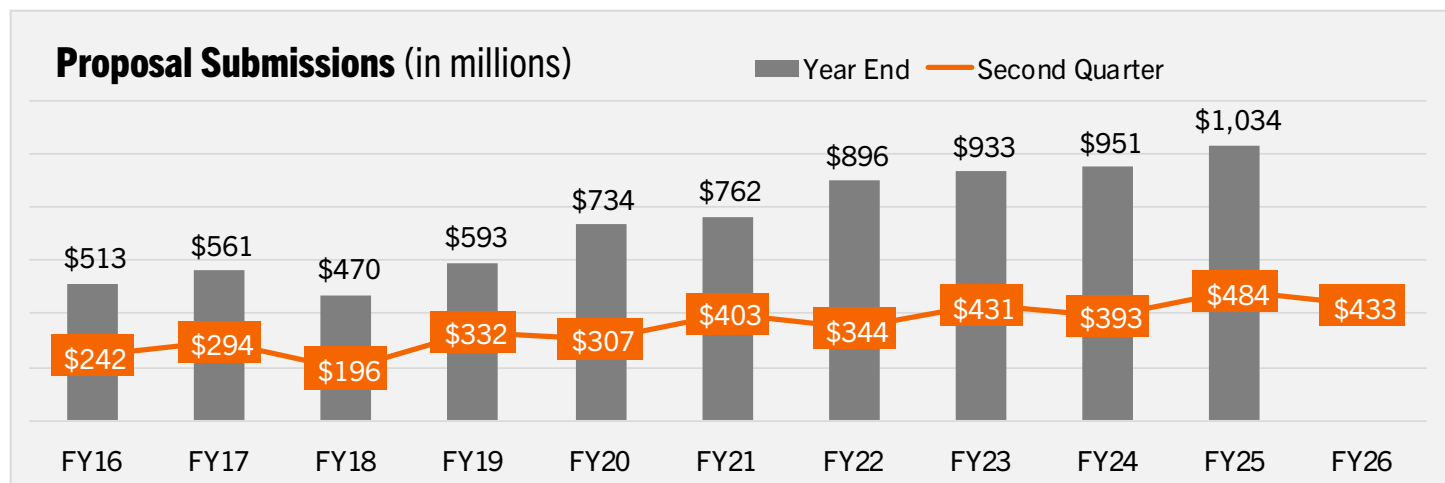
# Competitive Expenditures (2nd Quarter FY2026)



Research Expenditures (millions)	2022	2023	2024	2025	2nd Quarter 2026
By Funding Source	\$141.4	\$160.3	\$198.5	\$218.5	\$95.3
Federal Government	\$125.1	\$141.0	\$175.0	\$193.0	\$84.0
Foundations, Societies and Associations	\$4.6	\$5.4	\$6.6	\$7.2	\$3.3
Industry/Other	\$4.8	\$5.9	\$5.2	\$4.9	\$2.5
International	\$0.5	\$0.5	\$0.6	\$0.5	\$0.3
Local Government	\$0.9	\$0.7	\$0.6	\$0.8	\$0.9
State Government	\$6.2	\$8.2	\$10.4	\$12.0	\$4.4
Per T/TT Faculty Member					
CAAC	\$21,321	\$26,231	\$35,020	\$36,468	\$20,748
CAH	\$1,864	\$5,507	\$10,135	\$13,125	\$4,680
CAFLS	\$196,657	\$231,788	\$301,646	\$339,614	\$130,752
COB	\$6,787	\$9,865	\$14,564	\$15,709	\$7,875
CECAS	\$296,203	\$310,088	\$358,535	\$386,815	\$164,427
CBSHS	\$90,220	\$121,581	\$149,294	\$179,508	\$79,989
COE	\$80,058	\$121,114	\$124,266	\$124,571	\$89,356
COS	\$120,778	\$146,445	\$177,322	\$177,284	\$75,179
<b>Clemson average (Total exp/Total T/TT faculty)</b>	<b>\$142,129</b>	<b>\$159,792</b>	<b>\$196,501</b>	<b>\$207,926</b>	<b>\$92,620</b>

# Proposal Submissions (2nd Quarter FY2026)

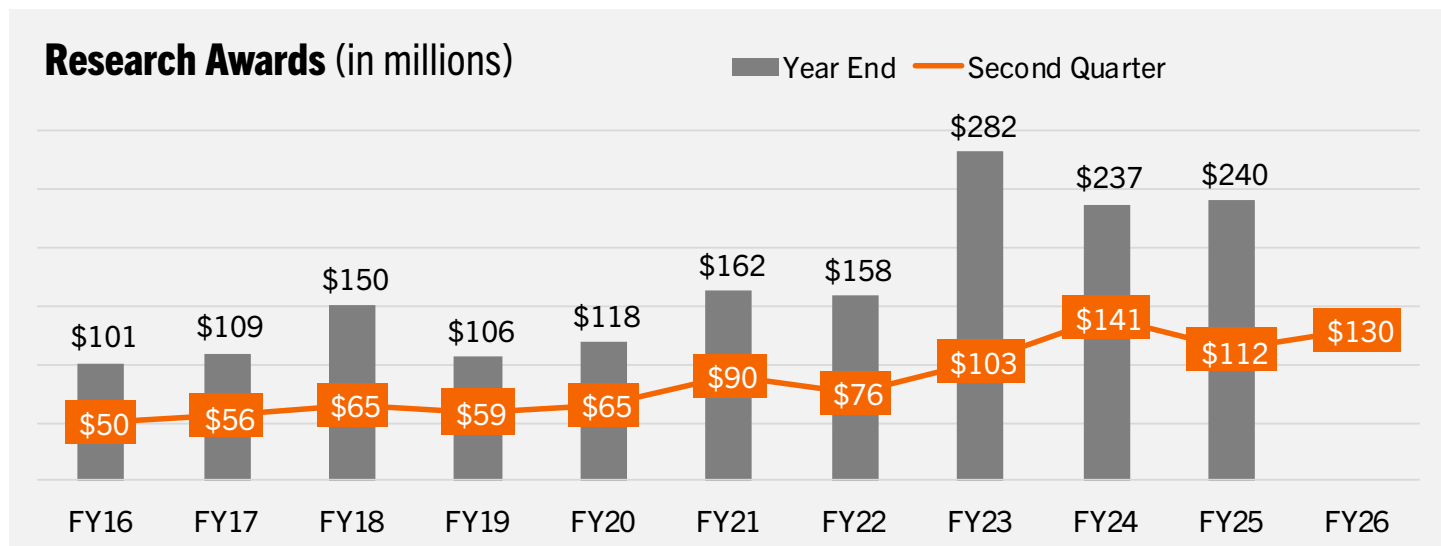
Proposal submissions were \$433 million through the second quarter of FY2026. The graph shows annual submissions value over the past decade with second quarter comparisons for each year.



Proposal Submissions	2022	2023	2024	2025	2nd Quarter 2026	
By Count	1,492	1,680	1,728	1,708	856	
CAAC	24	20	18	30	17	
CAH	11	7	12	14	6	
CAFLS	392	451	455	454	288	
CBSHS	151	183	179	176	72	
CECAS	631	684	701	623	289	
COE	43	45	49	97	37	
COB	9	11	11	14	7	
COS	193	259	262	272	126	
VP for Res & Interdisc Inst	23	11	13	11	2	
All Other	15	9	28	17	12	
By Value (millions)	\$896	\$933	\$951	\$1,034	\$433	FY2026 Targets
CAAC	\$6.5	\$10.4	\$8.6	\$9.6	\$6.2	\$12.13
CAH	\$1.7	\$3.0	\$1.5	\$0.9	\$0.4	\$3.58
CAFLS	\$249.9	\$149.6	\$188.9	\$205.3	\$115.3	\$173.22
CBSHS	\$73.1	\$106.5	\$116.4	\$107.6	\$36.7	\$123.48
CECAS	\$380.8	\$426.0	\$429.8	\$430.2	\$145.8	\$496.13
COE	\$32.3	\$34.4	\$34.0	\$76.8	\$16.8	\$39.69
COB	\$4.8	\$6.3	\$3.1	\$4.1	\$1.1	\$7.17
COS	\$127.3	\$169.8	\$125.5	\$186.6	\$82.5	\$198.45
VP for Res & Interdisc Inst	\$11.0	\$6.7	\$5.7	\$2.1	\$17.3	
All Other	\$8.9	\$20.3	\$36.9	\$10.6	\$10.9	

# Research Awards (2nd Quarter FY2026)

Research awards for the second quarter were \$130 million. The graph below shows annual awards earned over the past decade along with second quarter comparisons for each year. The table provides details on awards per college and young investigator awards received.



Research Awards	2022	2023	2024	2025	2nd Quarter 2026
By College/Unit (millions)	\$157.6	\$282.0	\$237.3	\$240.4	\$130.1
CAAC	\$0.4	\$3.4	\$1.5	\$2.3	\$0.8
CAH	\$0.8	\$2.1	\$0.7	\$0.4	\$0.03
CAFLS	\$26.9	\$107.4	\$37.4	\$47.8	\$31.8
CBSHS	\$13.7	\$21.0	\$27.8	\$20.7	\$22.0
CECAS	\$76.4	\$102.8	\$109.4	\$102.0	\$40.6
COE	\$5.7	\$10.1	\$4.9	\$13.4	\$7.8
COB	\$0.9	\$1.1	\$1.1	\$1.9	\$1.0
COS	\$17.8	\$24.4	\$34.0	\$24.6	\$19.4
VP for Res & Interdisc Inst	\$6.6	\$7.1	\$7.0	\$7.4	\$4.0
All Other	\$8.3	\$2.6	13.5	\$19.8	\$2.6
Young Investigator Awards	5	8	10	8	4
NSF CAREER	4	6	10	6	2
NIH KO1	-	-	-	2	-
Air Force Young Investigator	-	1	-	-	1
Army Young Investigator	-	-	-	-	-
DARPA Young Investigator	-	-	-	-	-
EPA Early Career	-	-	-	-	-
DOE Early Career	1	-	-	-	1
Arnold & Mabel Beckman Foundation	-	1	-	-	-

## Top Competitive Awards (2nd Quarter FY2026)

**The Patient-Centered Outcomes Research Institute (PCORI) awarded Clemson \$3.5 million** to continue research on treatments for hepatitis c. This project is led by Alain Litwin, professor of practice in the Department of Psychology and Clemson University School of Health Research, co-director of the Clemson University Center for Addiction and Mental Health Research and vice chair of academics and research in the Department of Medicine at Prisma Health and University of South Carolina School of Medicine.



**The National Aeronautics & Space Administration (NASA) awarded Clemson \$1.9 million** to investigate ion neutral coupling during active aurora. The research will help scientists better understand energy dissipation in the upper atmosphere. The project is led by Stephen Kaeppler, an associate professor in the Department of Physics and Astronomy.



**The National Institutes of Health awarded Clemson \$1.7 million** to develop a platform to deliver targeted therapies beyond the blood-nerve barrier, a natural defense mechanism for the peripheral nervous system. The goal is to create therapies for various nervous system injuries and diseases. The project is led by Jessica Larsen, the Carol and John Cromer '63 Family Endowed Associate Professor of Chemical and Biomolecular Engineering.

**The U.S. Department of Education via the state awarded Clemson \$1.6 million** to work with the Clarendon County and Pickens County school districts to develop after-school activities and programming for elementary school students. Programming will align with school curricula to help students improve comprehension in the classroom and progress toward district and state standards. The project is led by David Fleming, professor of teaching and learning.

**South Carolina Quantum awarded Clemson \$1.3 million** to advance quantum computing research, education and workforce development. The research team will focus on quantum integration while developing new quantum algorithms and applications, including quantum machine learning. The project is led by Rong Ge, professor in the School of Computing.



## Top Competitive Awards (2nd Quarter FY2026)

**The Bill and Melinda Gates Foundation awarded Clemson \$1.2 million** to develop a cutting-edge hydroponic propagation system to produce clean, reliable banana starter plants at a large scale and low cost. Led by horticulture professor Jeffrey Adelberg, the projects aims to initially support banana farming in Africa, before adapting the technology for fruit and potato farmers in South Carolina.



**South Carolina Quantum awarded Clemson another \$650,000** to research quantum software and machine learning. The project will also create statewide “quantathon” competitions and clubs for students. The project is led by Rong Ge, professor in the School of Computing.



**NIH awarded Clemson \$625,000** to create a multi-institute Alzheimer’s Disease Research Center (ADRC) that will provide much needed clinical, education, outreach and research support across the entire state of South Carolina. The project supports the NIH Precision Brain Health Network and is led by Lesley Ross, SmartState/SmartLife Endowed Chair in Aging and Cognition and director of the Institute for Engaged Aging.

**The S.C. Department of Transportation awarded Clemson \$617,254** to continue leading the Transportation Technology Transfer Service, which provides technical assistance in the operation, maintenance and management of roadways. The project is led by Shaun Gaines, director of the Glenn Department of Civil Engineering.



**The S.C. Department of Transportation awarded Clemson \$410,644** to help its evaluation of contractors. Clemson’s research team will assess the department’s current system of evaluating potential contractors and recommend improvements to determine contractor eligibility for future contract awards and to use past performance as a basis for potential disqualification. The project is led by Tuyen Le, associate professor of civil engineering.



# RESEARCH

## RESEARCH NEWS

*This section highlights research news from across the university.*

## Executive Summary

- Research is ingrained in the culture at Clemson and inherent to a No. 1 student experience. Through research, students are starting companies, developing technologies, working directly with potential employers and earning prestigious fellowships. Examples of student success through research are on [pages 13-15](#).
- Faculty members continue to earn significant recognition for their research, including prestigious fellowships and lifetime achievement awards. Examples of faculty honors and recognitions are on [pages 16-18](#).
- The newly opened Advanced Materials Innovation Complex provides a powerful new platform for multidisciplinary research and education that supports the aerospace, healthcare, electronics, energy and transportation industries, among others. Take a look inside the new facility on [page 19](#).

# No. 1 Student Experience

**Three Clemson University Honors students have been named 2026 Goldwater Scholars**, one of the nation's most prestigious undergraduate awards in science, technology, engineering and mathematics (STEM). Recognized for demonstrating exceptional promise as future research leaders, all three students are from South Carolina: Ashley Blake of Fort Mill, Andrew "Drew" Hodges of Greenwood and Meridee Ritzer of Rock Hill. Each plans to pursue a doctoral degree, continuing on a path toward careers in research. Scholars are selected based on academic achievement, research experience and commitment to advancing knowledge through graduate study. Clemson's students are among 454 recipients selected from more than 5,000 applicants nationwide. With this year's honorees, Clemson has now produced 69 Goldwater Scholars since the program's inception. [READ MORE](#)



Ashley Blake, Andrew Hodges and Meridee Ritzer

**First-year students Alejandra Rodriguez and Prasamsa Tatineni invented a high-tech, disposable wound dressing** that detects early infection by using well-established physiological markers like temperature and size. Detection of infection typically relies on visual symptoms such as redness, swelling and pus, which appear well after an infection has developed. Alejandra and Tatineni created DermAlert to detect infection before visible signs appear. [READ MORE](#)

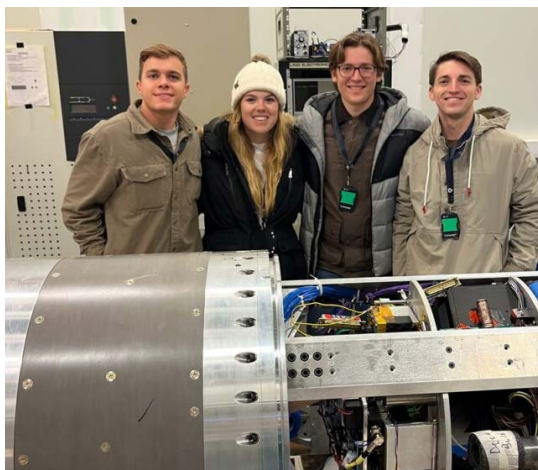
**A team of data science students helped an Ohio energy company evaluate environmental risks across its footprint.** When Stonebridge Oil Solutions faced growing concerns about Ohio's aging oil wells and the environmental risks associated with saltwater injection, the company turned to Clemson students in the School of Mathematical and Statistical Sciences and the Department of Management. The students equipped Stonebridge with new tools to prioritize well plugging, inform public policy discussions and support workforce development across Appalachian Ohio. [READ MORE](#)

**Chemistry major Lukas Garcia turned an undergraduate research project and his interest in AI into startup company.** His business, called Crystal-XG, provides an AI platform that helps accelerate the pace of pharmaceutical development. Crystal-XG spawned from a two-semester Creative Inquiry course. Garcia won the College of Science's annual Catalyst Competition and the university-wide Launchpad Liftoff competition already. Garcia competed for the ACC InVenture Prize in March. [READ MORE](#)



Lukas Garcia

## No. 1 Student Experience



Clemson students Matthew Hall, Regan O'Neill, Andrew Hodge and James Davis stand in front of the sounding rocket in which their experiment was launched into space through NASA's GHOST program.

**A group of physics and astronomy students designed instrumentation that NASA launched into space.** They traveled to Norway to see it happen. The mission, part of an international collaboration between the United States and Norway, allowed undergraduates to work through the same rigorous review and testing process as professional aerospace engineers. "At Clemson, we want to provide unique undergraduate learning experiences that you can't get anywhere else," said Stephen Kaeppler, an associate professor in the Department of Physics and Astronomy who advised the students. "I certainly didn't have an experience like this when I was an undergrad." The student's Norway experience grew from Kaeppler's lab and Clemson's Creative Inquiry program (CI). CI paid for the students' trip to Norway, while a National Science Foundation CAREER Award and the South Carolina Space Grant Consortium funded materials and domestic travel.

[READ MORE](#)

**Michael Walters '24, an electrical engineering Ph.D. student from Walhalla, is using AI-based modeling and simulation for more secure, resilient energy grid systems.** He is one of 14 Clemson students and alums to earn a prestigious National Science Foundation graduate research fellowship last year. Walters explores energy systems of the future with digital twin technology by creating innovative, data-driven artificial intelligence-based modeling and simulation capabilities that will contribute to sustainable, resilient and efficient transformed clean electric power infrastructure. [READ MORE](#)

**Stuti Garg is one of just five students in the U.S. to earn the prestigious Chishiki Artificial Intelligence in Civil Engineering Graduate Fellowship.** A Ph.D. student in the Nieri Department of Construction and Real Estate Development, Garg is working to identify markers of worker stress in hopes of developing an AI-based system that can alert employers and employees under stress that could lead to injury or suicide. [READ MORE](#)

**Rob Martin built a virtual reality experience for hospice patients to have one last special moment with their loved ones.** Martin graduated last May. While still a student, he joined the Tandem VR™ team, a concept invented by Olivia McAnirlin, Virtual Reality and Nature Lab co-director at Clemson, which helps people connect to past experiences and complete "bucket lists" with their loved ones. As part of this project, local hospice care patients were asked what they would want the chance to experience one more time before they pass. The overwhelming response from patients was a Clemson football game. Rob helped make it happen. [READ MORE](#)



Rob Martin

# No. 1 Student Experience

**Yashvi Patel worked on a new artificial intelligence platform that simplifies medical procedures during a clinical research internship at the Mayo Clinic.** A senior double major in biochemistry and psychology, Patel focused on how a particular thrombolytic affects patients who have suffered from a stroke. She analyzed how soon patients can begin physical movement such as sitting on the edge of the bed, standing or walking after having a stroke and receiving the drug. Patel also compared data to identify trends in age, gender, stroke recurrence and cognitive function before the stroke. [READ MORE](#)



Yashvi Patel

**Reid Turner and Danika Pflughardt turned a classroom conversation into a growing AI startup company.** Students in Clemson University's Wilbur O. and Ann Powers College of Business, Turner and Pflughardt are co-founders of Drive AI, a student-built startup that helps small and mid-sized businesses use artificial intelligence to streamline operations. And while the technology they work with is cutting-edge, the foundation of their company is something much simpler: relentless curiosity, long hours and a willingness to ask for help. Recently, Drive AI was accepted into Launchpad Tech Ventures, a regional startup accelerator designed to help early-stage companies grow. [READ MORE](#)



Emily DiNicola

**Emily DiNicola's undergraduate research experience helped her quickly land a job with a startup biomedical company in Greenville.** Emily conducted research as an undergraduate student at the Clemson University Biomedical Engineering Innovation Campus (CUBEInC) at Prisma Health in Greenville. She conducted experiments and even participated in a clinical trial as an undergrad. The experience made her feel more prepared for graduate school than her classmates who had not conducted the same level of research during their undergraduate education. She remained at Clemson and continued to work at CUBEInC while earning her Ph.D. During this time, she connected with one of CUBEInC's tenant companies, Samaritan Biologics. The biomedical company established an 11,000-square-foot manufacturing facility on the Clemson University International Center for Automotive Research (CU-ICAR) campus in Greenville and maintains a lab at CUBEInC. Samaritan quickly hired Emily as soon as she graduated with her Ph.D. in 2025. [READ MORE](#)

# Faculty Honors and Achievements

**Two Clemson University College of Science professors have been named 2025 Fellows of the American Association for the Advancement of Science (AAAS)**

— one of the highest honors in the scientific community. Amy Lawton-Rauh, senior associate provost and professor in the Department of Genetics and Biochemistry, and Marco Ajello, a professor in the Department of Physics and Astronomy, were selected for their exceptional research and leadership in their fields. Ajello's research centers on high-energy phenomena around supermassive black holes at the centers of galaxies. Lawton-Rauh is a plant geneticist whose research has helped advance the understanding of invasive species harmful to the agriculture industry. [READ MORE](#)



Marco Ajello and Amy Lawton-Rauh

**Amira Jadoon, associate professor in the Department of Political Science, was honored by the Harry Frank Guggenheim Foundation with its Distinguished Scholar Award** for her research on the causes, dynamics and control of violence and aggression. These prestigious awards are nationally competitive, project-based research grants and are widely regarded as a significant distinction in political science, international security and related fields. Jadoon's research explores the multifaceted consequences of international security tools and counterterrorism strategies, examining their connections to political violence, extremism and the strategic dissemination of disinformation. [READ MORE](#)



Gilbert Miller

**Gilbert Miller, retired researcher and Clemson Extension vegetable specialist, has received the Order of the Palmetto**, the state's highest civilian honor, for his impact on the state's agriculture industry. The Order of the Palmetto recognizes a lifetime of extraordinary achievement, service and contributions to the state. Miller's research on fertigation, irrigation and variety trials has helped farmers, particularly watermelon growers, improve productivity and profitability. [READ MORE](#)

**Professor Hala Nassar, director of the landscape architecture programs, was recognized as Chair Elect of the Council of Educators in Landscape Architecture's Academy of Fellows.** The honor is a result of decades of leadership in the organization and nominations from her colleagues. As Chair Elect, Nassar will serve a three-year term working with national colleagues to advance the landscape architecture profession. In this role, she will help shape initiatives that promote excellence, foster innovation and support scholarly contributions within the field. [READ MORE](#)

# Faculty Honors and Achievements

**Chemistry professor Joe Thrasher and two long-time collaborators have received a national honor from the American Chemical Society** for their work on high-performance lubricants that keep machinery running under extreme conditions, leading to new materials and a portfolio of patents. The research centered on PFPEs, which are lubricant molecules built from carbon, fluorine and oxygen that can survive high temperatures and oxidative and corrosive environments where conventional hydrocarbon oils are prone to fail more quickly. These materials are used in aerospace components, jet engines and advanced manufacturing equipment. [READ MORE](#)



Joe Thrasher

**English professor Lee Morrissey earned an international award from The Milton Society of America** for his new book *Milton's Ireland: Royalism, Republicanism and the Question of Pluralism*. He received the James Holly Hanford Book Award, which boasts a history of accomplished awardees, with authors across the globe, from Ivy League institutions in the U.S. to Oxford and other universities in the U.K. [READ MORE](#)

**College of Education associate professor Brandi Nicole Hinnant-Crawford earned a national book award** for her book, "Improvement Science in Education: A Primer, Second Edition." The book was honored by the American Association of Colleges for Teacher Education for its significant impact on educator preparation. [READ MORE](#)



Brandi Nicole Hinnant-Crawford



Martine LaBerge

**Martine LaBerge of Clemson University has been named the 2026 recipient of the Founders Award from the Society For Biomaterials**, one of the organization's highest honors. The Founders Award recognizes long-term, landmark contributions to the field of biomaterials, along with sustained service to the society. LaBerge joined Clemson in 1990 and served as chair of the Department of Bioengineering for two decades, helping guide its growth into a nationally recognized program known for translational research, industry engagement and workforce development. [READ MORE](#)

# Faculty Honors and Achievements

## **Kara Powder won the 2026 South Carolina Governor's Award for Excellence in Scientific Awareness,**

recognizing her impact on how middle school students across the state experience and understand science. Powder, an associate professor in the Department of Biological Sciences, is a researcher studying the genetics and development of facial variation. She co-founded BeakerBox, a program that provides middle school classrooms with ready-to-use, inquiry-based science lessons that meet state education standards. Since distributing the first boxes in 2023, the program has reached more than 40,000 students across South Carolina. [READ MORE](#)



Kara Powder, second from left, with the BeakerBox team



John Gaber

**John Gaber, the director of Clemson University's City and Regional Planning program, has been elected to the College of Fellows** of the American Institute of Certified Planners (AICP), the highest honor awarded by the organization. Election to the College of Fellows (FAICP) recognizes planners who have made significant contributions to the profession and society through sustained excellence, leadership and impact. Gaber's selection reflects a career spanning teaching, research and service, with a focus on preparing students to engage thoughtfully with the challenges facing communities and the built environment. [READ MORE](#)

# Newly opened Advanced Materials Innovation Complex poised to advance key industries, grow research footprint

Clemson University began 2026 with the opening of South Carolina's most technologically advanced research facility, a 150,000-square-foot Advanced Materials Innovation Complex (AMIC). The sharp new building sits in the center of campus and provides classrooms and labs that support the University's three core advanced materials departments: Materials Science and Engineering, Chemistry, and Chemical and Biomolecular Engineering.

The three departments have historically been housed in separate spaces scattered across the main campus and satellite campuses around the Upstate. They also are housed in two different colleges: the College of Science and the College of Engineering, Computing and Applied Sciences. AMIC centralizes materials science-related classes, offices and labs from both colleges into a sweeping new space designed to promote multidisciplinary research and education, hallmarks of an R1 research institution, and to solidify South Carolina as a major player in the advanced materials industry.

Advanced materials have quickly become crucial to high-tech industries. Most often, they are conventional materials — think metals, polymers and ceramics — that are modified or designed at microscopic levels for specific applications, enabling lighter, stronger, more efficient products. Some examples include carbon fiber composites, ceramic polymers, nanoparticles with unique optical properties, and biomaterials used in medicine, such as DNA-based materials.

"AMIC will spark new opportunities for collaboration among faculty and students from complementary disciplines to drive advanced materials innovations that impact numerous critical industry sectors, including energy, healthcare, manufacturing, automotive and others," said Tanju Karanfil, senior vice president for research, scholarship and creative endeavors.

[READ MORE](#)





# RESEARCH

## FOCUS ON FACULTY

*This section highlights junior faculty members at Clemson University. Profiles were submitted by the colleges.*

## Executive Summary

- Click the links below to read about faculty member from the respective college.
  - » [College of Agriculture, Forestry and Life Sciences](#)
  - » [College of Architecture, Art and Construction](#)
  - » [College of Arts and Humanities](#)
  - » [College of Behavioral, Social and Health Sciences](#)
  - » [Wilbur O. and Ann Powers College of Business](#)
  - » [College of Education](#)
  - » [College of Engineering, Computing and Applied Sciences](#)
  - » [College of Science](#)



College of  
**AGRICULTURE, FORESTRY  
AND LIFE SCIENCES**

## Ahmed Ali, Ph.D.

*Associate Professor*

**Animal and Veterinary Sciences**



Ali joined the College of Agriculture, Forestry and Life Sciences in 2019 after completing his Ph.D. in animal behavior, management and welfare through a joint program between Michigan State University and the College of Veterinary Medicine in Cairo, Egypt. His doctoral training focused on animal behavior, welfare and management, building on his background in animal science and veterinary medicine.

In his current position, he focuses on improving the welfare, health and productivity of livestock — including laying hens, dairy cows and equids — through applied animal behavior and precision livestock farming approaches. His research interests include early-life behavioral development, stress physiology, housing and environmental management, and the use of sensor-based technologies to monitor and improve animal welfare. His work also includes developing and evaluating innovative technologies, including robotic interventions in the laying hen industry to improve animal welfare and production efficiency.

Ali currently teaches three courses, including a graduate-level course on the ethics of animal use in scientific research. He has published more than 37 peer-reviewed articles and delivered more than 21 presentations at both scientific and industry conferences. He has mentored nine Ph.D. and master's students and has provided research training to more than 76 undergraduate students who participated in research projects examining how housing design, environmental management, lighting schedules and management practices influence animal behavior, activity patterns, skeletal health, and overall welfare in livestock production systems.

### Select Accomplishments

- Served as principal investigator (PI) on a \$650,000 grant from the U.S. Department of Agriculture's National Institute of Food and Agriculture (NIFA) in 2022 investigating the influence of litter management techniques, including robotic interventions, on the incidence of floor-laid eggs in commercial laying hen facilities.
- Received more than \$220,000 in federal funding to investigate the optimization of sorghum-based diets to improve egg quality and laying hen health without compromising animal welfare.
- Earned more than \$250,000 in industry funding to evaluate management practices of laying hen systems.
- Served as a co-PI on several federally and industry funded projects totaling more than \$350,000.



College of  
**ARCHITECTURE, ART  
AND CONSTRUCTION**

## Jong Han Yoon

*Assistant Professor*

**Nieri Department of Construction  
and Real Estate Development**



Yoon develops advanced digital systems for sustainable and resilient built environments by integrating Building Information Modeling (BIM), Artificial Intelligence (AI) and Blockchain technologies. His research focuses on addressing two critical challenges, reducing carbon emissions in different building lifecycle stages and enhancing occupant safety in high-risk scenarios in the built environment, through innovative, technology-driven solutions.

He has pioneered BIM-, AI- and blockchain-enabled carbon emissions accounting systems, enabling automated, traceable and immutable tracking of lifecycle emissions across construction processes. Yoon also has developed AI- and blockchain-based emissions ledger systems (AB-CELS) and BIM-driven carbon-cost estimation frameworks (BAS-CCE) to support data-driven decision-making for net-zero construction.

His work has led to the development of smart evacuation systems, such as AI-enabled evacuation simulation frameworks for real-time route optimization and safety decision-making during active shooter events. Yoon has identified critical gaps in existing evacuation systems and proposed technology-integrated solutions leveraging real-time data and detailed spatial modeling to improve emergency preparedness and resilience.

### Select Accomplishments

- Authored more than 10 peer-reviewed journal articles in leading journals, such as *Automation in Construction*, *Journal of Construction Engineering and Management* and *Carbon Management*.
- Authored more than eight international conference papers spanning sustainable construction, blockchain-enabled systems and safety/resilience in the built environment.
- Funded research projects include:
  - “IoT- and BIM-enabled Building Evacuation Simulation Model against School Shootings” (Pennell Center, \$45,920, principal investigator);
  - “BIM-based Carbon Footprint Assessment System for Carbon Neutral Construction” (Clemson SUCCEEDS Tier 1, \$7,868, principal investigator); and
  - “Digital Masonry Frame Homes – Phase 1 (Southeast Concrete Masonry Association, \$292,480, co-principal investigator).



College of  
**ARTS AND  
HUMANITIES**

## Amanda Regan, Ph.D.

*Assistant Professor*

**History and Geography**



Regan is a digital and computational historian who develops innovative methodologies to uncover previously invisible patterns in the historical record. She joined Clemson in 2022 and is an assistant professor in the Department of History and Geography. She is also the incoming director of graduate studies, overseeing both the History MA and Digital History Ph.D. Programs. The Digital History Ph.D. is a first-of-its-kind degree that positions Clemson on the cutting-edge of the field. Her work sits at the intersection of history and computer science.

Regan's research combines large-scale data analysis, geospatial mapping and algorithmic approaches with traditional archival methods to advance our understanding of American history. She is perhaps best known for her innovative and award-winning digital history project Mapping the Gay Guides, which seeks to digitize, transcribe and map historical travel guides that provided LGBTQ Americans with lists of safe places to form community. The project has received grant funding and garnered international recognition.

In addition to this project, she is on the forefront of new research in digital history that seeks to understand the use of large language models (LLMs) and Artificial Intelligence for historical research. She is currently co-editing a special issue of the *Journal of Digital History* on AI and history and is working on an article that uses LLMs to solve complex pattern matching issues in historical datasets.

She teaches courses on digital history such as Digital Methods I and II, which are innovative programming classes for historians where students learn programming skills, build historical datasets and research visualizations, and explore the impact Artificial Intelligence is having on the field of computational history. She also teaches a variety of U.S. history courses infused with digital methods, ensuring undergraduates leave with both rigorous historical training and the critical thinking skills increasingly demanded in an age of artificial intelligence.

### Select Accomplishments

- Authored a forthcoming book from University of Virginia Press titled, "Shaping Up: Physical Fitness Initiatives for Women, 1880-1965."
- Authored numerous peer-reviewed journal articles and book chapters and has given a dozen conference presentations and 15 invited talks.
- Has earned funding from the National Endowment for the Humanities.



College of  
**BEHAVIORAL, SOCIAL  
AND HEALTH SCIENCES**

## **Amanda Nicole Stover, Ph.D.**

*Assistant Professor*

**Public Health Sciences**



Stover joined the Department of Public Health Sciences as an assistant professor in October 2023. She completed bachelor's degrees in chemistry and psychology from Wheeling Jesuit University, a master of public health degree in biostatistics from the University of Cincinnati and a Ph.D. in health services and outcomes research from West Virginia University. She completed her postdoctoral training at the University of North Carolina in Eshelman School of Pharmacy.

Stover's research focuses on the intersection of suicide and self-harm behaviors among individuals with substance use disorder to improve prevention, harm-reduction and treatment strategies that support long-term, sustained recovery. She is working to understand critical gaps in care for individuals with opioid use disorder (OUD) and co-occurring depression, using peer-based support interventions initiated in rural emergency departments. During Fall 2026, she participated in Clemson's STRIDE Art Academy, where she worked with professionals across academia and industry to develop and refine her peer-based intervention. Her work aims to address the needs of individuals with co-occurring OUD and depression by developing an assertive community engagement intervention that incorporates trauma-informed care and behavioral activation. This intervention will help to understand underlying psychosocial mechanisms related to the interaction of depressive symptoms and substance use behaviors, which could significantly increase the risk of adverse health outcomes such as overdose and suicide risk.

### **Select Accomplishments**

- Selected by the Medical Research Foundation (UK) as an expert reviewer for a grant application directly based on her published work.
- Published three first author peer-reviewed articles and nine additional peer-reviewed publications with Clemson affiliation since joining the university in 2023.
- Authored five conference presentations with Clemson affiliation with two upcoming invited workshop presentations (Spring 2026) since joining the faculty in 2023.
- First-author publication featured by the American Foundation for Suicide Prevention in its July 2023 Research Roundup, showcasing her work on the Pharm-SAVES suicide-prevention training program.
- Earned funding from the Knight Foundation and the S.C. Center for Rural and Primary Healthcare.



**Adam Soliman, Ph.D.**

*Assistant Professor*

**John E. Walker Department of Economics**



Soliman's research sits at the intersection of crime, health and public policy, with a focus on how enforcement, regulation and institutional design shape public safety and population health outcomes. His work addresses some of the most pressing policy challenges facing the United States, including the opioid epidemic, policing practices and the effectiveness of criminal justice interventions.

In his recent work on opioid markets, Soliman showed that targeted enforcement actions against rogue opioid suppliers can significantly reduce opioid distribution and overdose mortality, while also highlighting important tradeoffs related to substitution into more dangerous drugs.

A central focus of Soliman's current research agenda is improving living standards and health outcomes in South Carolina. His work leverages large-scale administrative data and modern empirical methods to evaluate policies aimed at reducing crime, addressing substance use and improving community well-being. Through these efforts, he is contributing to evidence-based policymaking at both the state and national levels.

At Clemson, Soliman teaches econometrics and quantitative methods, equipping students with the analytical tools needed to address complex economic and policy questions.

## Select Accomplishments

- Published in leading economics journals, including the *American Economic Journal: Economic Policy* and the *Journal of Law and Economics*.
- Featured on the American Economic Association (AEA) podcast, a leading platform in the economics profession.
- Serves as a co-principal investigator on multiple externally funded research projects supported by Arnold Ventures, totaling more than \$800,000. This funding is helping to establish and support Clemson University's Economics of Crime Lab, which serves as a hub for rigorous, policy-relevant research on crime, health and public safety.



**Sarah Jerasa, Ph.D.**

*Assistant Professor*

**Education and Human Development**



Jerasa's research examines how digital public spaces and classrooms intersect to shape reading, identity development, teacher learning and civic engagement. Grounded in sociocultural and critical literacy frameworks, she investigates how platforms such as TikTok influence what people read, how they interpret texts and how online discourse circulates ideas that shape beliefs and actions beyond the screen. Her work highlights social media as a powerful site for identity formation, community building and justice-oriented participation. She also explores how these digital practices influence preservice teachers' professional learning and instructional decision-making. Jerasa analyzes how online trends emerge and how digital conversations extend into offline practices. Her scholarship bridges digital cultures and teacher preparation to advance critically responsive literacy instruction across K–12 and higher education contexts.

Jerasa's scholarship has appeared in leading literacy and teacher education journals, including *Reading Research Quarterly*, *The Reading Teacher*, *English Journal*, *Literacy*, *Professional Development in Education*, *English Teaching: Practice & Critique* and *Literacy Research and Instruction*, as well as education technology outlets such as *TechTrends*, *Journal of Digital Learning in Teacher Education* and *Contemporary Issues in Technology and Teacher Education*.

Jerasa is an active member of the Literacy Research Association (LRA), the National Council of Teachers of English (NCTE) and the American Educational Research Association (AERA), contributing to national conversations on literacy, digital learning and teacher education. She serves as a faculty associate with Clemson University's Social Media Listening Center, collaborating on interdisciplinary research examining digital discourse and public engagement. Additionally, she is the faculty advisor for the Literacy Leaders Student Association (LLSA) in the College of Education and co-founder of the Critical Opportunities for Learning and Literacy Lab (CO-LAB), a research collective dedicated to mentoring graduate students and advancing justice-oriented literacy scholarship.

## Select Accomplishments

- Recipient of the 2025 National Technology Leadership Fellowship award, National Council of Teachers of English (NCTE).
- Jerasa, S. & Ura, S.K. (2025). "Learning from TikTok: Quality and Reach of #TeacherTok as a Classroom Management Tool for Teacher Education." *TechTrends Journal*. 0(0).
- Jerasa, S. (2025). "The #BookTok Connection: Examining Cultural and Linguistic Identity Expression in Online Reading Communities." *Education Sciences Journal*, 15(2), 234.



College of  
**ENGINEERING, COMPUTING  
AND APPLIED SCIENCES**

## Jessica Larsen, Ph.D.

*Associate Professor*

**Chemical and Biomolecular Engineering**



Larsen is the Carol and John '63 Endowed Associate Professor of Chemical and Biomolecular Engineering at Clemson University. She also holds a dual appointment in the Department of Bioengineering. Larsen received her Ph.D. in chemical engineering at Auburn University, where she worked both in the College of Engineering and in the College of Veterinary Medicine. Immediately following her Ph.D., she began her career at Clemson University.

Her research focuses on re-engineering the brain, central nervous system and peripheral nervous system during disease and injuries. Her team designs better approaches to both diagnose and treat these conditions, using materials science to engineer most appropriate biomaterials for each condition or injury. The brain remains highly difficult to treat, leading to a massive deficit in treatments available to patients with neurodegenerative conditions like Alzheimer's, Parkinson's, ALS, etc.; her approach offers a promise to patients impacted by these diseases. Specifically, her team has developed nanoparticles capable of carrying synthetic and biologic drugs across the blood-brain and blood-nerve barriers, enabling novel treatment design. Larsen's lab has established cellular and animal models to validate findings in a variety of conditions, as evidenced by her diverse publication portfolio.

### Select Accomplishments

- Authored nearly 50 papers in peer-reviewed journals, including *ACS Biomacromolecules*, *Journal of Colloid and Interface Science*, *Progress in Neurobiology*, *Molecular Pharmaceutics* and *Bioconjugate Chemistry*.
- Served on numerous National Science Foundation (NSF) and National Institutes of Health (NIH) study sections.
- Earned more than \$6.3 million in funding from NSF, NIH and disease-focused foundations.
- Received the 2021 NSF CAREER Award, the 2022 S.C. Governor's Young Scientist Award for Excellence in Scientific Research, the 2024 CECAS Junior Researcher of the Year and the 2025 NIH Director's New Innovator Award, the most competitive award at the NIH.
- Mentored more than 100 undergraduate students, including two Goldwater Scholars and two NSF Graduate Research Fellowship awardees. Her undergraduate research efforts led her to receive the 2020 Phil and Mary Bradley Award for Mentoring in Creative Inquiry.
- Has graduated six Ph.D. students and two master's students who have gone on to receive prestigious postdoctoral fellowships or to be leaders in the pharmaceutical industry. She is currently advising eight Ph.D. students, three master's students and a postdoctoral fellow.



**Shanna L. Estes, Ph.D.**

*Assistant Professor*

**Chemistry**



Estes is an interdisciplinary chemist whose research team works to advance a fundamental understanding of the chemistry of the actinide elements in complex aqueous systems relevant to the nuclear fuel cycle. Positioned at the bottom of the periodic table as part of a unique group of elements (the f-elements), the actinides have remarkably complex redox (reduction and oxidation) and coordination chemistry, which, when combined with their inherent radioactivity, has made study of these elements difficult. The actinides, which include elements like uranium, plutonium and americium, are critical for modern technologies like nuclear energy production, power generation for extended space missions (e.g., Voyager I and II), and even smoke detection. However, as part of the nuclear fuel cycle, the actinide elements also contribute to a legacy of waste and environmental contamination. Leveraging the unique resources available at Clemson that facilitate the safe study of actinide elements, Estes and her team use complementary analytical tools to quantitatively define actinide structure-property relationships, with the goal of predicting actinide behavior in natural and engineered environments for improved safe handling, storage and processing of nuclear materials.

In 2025, Estes received the prestigious U.S. Department of Energy (DOE) Early Career Research Program Award to study the structure and redox chemistry of polynuclear plutonium-oxo clusters — small molecules consisting of multiple plutonium atoms linked together by oxygen or hydroxide, all arranged in the same geometry as the atoms of plutonium dioxide. These polynuclear clusters, which serve as molecular models of plutonium dioxide, can be isolated as well-defined crystalline solids and characterized more completely than plutonium dioxide, providing a means to systematically evaluate how specific structural parameters influence plutonium reactivity in water. The DOE Early Career Award gives Estes and her research team the opportunity to explore the chemistry of these polynuclear plutonium-oxo clusters with the aim of building a deeper, predictive understanding of plutonium dioxide alteration in the environment. More importantly, investigating plutonium redox chemistry in these structurally well-characterized clusters informs on how the electrons in plutonium are shared with neighboring atoms, which is a key persistent question within the actinide chemistry community given the complex electronic character of these heavy elements.

## Select Accomplishments

- Received the U.S. Department of Energy Early Career Research Program Award in 2025.
- Currently advises five Chemistry Ph.D. students and six undergraduate students.



# RESEARCH

**Bold Ideas. Broad Collaboration. Big Impact.**