UCONN

COLLEGE OF ENGINEERING

SCHOOL OF CIVIL AND ENVIRONMENTAL ENGINEERING

2024-2025 ANNUAL REPORT

Our Mission

Civil and environmental engineers analyze, design, build, and maintain infrastructure to create, improve and protect the environment in which we live. We are actively engaged in addressing global and societal needs including a resilient and sustainable built environment, the transportation of humans and goods, and the mitigation of the effects of human activities on the natural environment.

The mission of the School of Civil & Environmental Engineering is to provide students with a broad, fundamental real-world educational program to prepare them to contribute actively to engineering practice while considering public health and safety, social equity, and environmental and economic factors.

Our programs develop creative thinking and innovation skills that enable engineers to develop new solutions to local, national and global problems related to the built and natural environment. We are dedicated to maintaining an inclusive and collaborative environment for students, faculty and staff. We are committed to empowering our students, developing life-long learners, and instilling a sense of professional responsibility.

"Our move to become an independent School is a significant stride towards addressing this imminent need, enhancing capacity to meet industry demand, and playing a pivotal part in securing our nation's infrastructure future."

Dear friends,

The 2024–2025 academic year has been a landmark period for the School of Civil and Environmental Engineering (SoCEE). As we complete our transition from a Department to a School, we continue to advance our vision of addressing global challenges through innovative research, interdisciplinary education, and meaningful engagement with our communities.

We continue to elevate the educational experience for our students. This year brought innovative course offerings, expanded mentorship programs, and new interdisciplinary initiatives such as the planning of our new major in Construction Engineering, Management and Intelligent Systems (CEMI), the AI Collaborative Studio, and enhanced graduate and professional development programs. Our undergraduate and graduate enrollments remain strong, supported by hands-on learning through Senior Design partnerships, outreach projects, and community-based service learning.

Looking ahead, SoCEE is poised for continued growth in research, education, and outreach. With the dedication of our faculty, staff, students, and alumni, we will continue to shape a resilient, sustainable, and equitable future through engineering innovation.

Thank you for your continued support of the School of Civil and Environmental Engineering.

Kay Wille, Ph.D.
Director of the School of Civil and Environmental Engineering

ENROLLMENT | FALL 2024

534

total students

Undergraduate

428

308
Civil Engineering

120
Environmental Engineering

44
Students enrolled in the Construction Engineering & Management minor

12
Students enrolled in the Environmental Engineering minor

Graduate

106

65
Civil Engineering

24 M.S./M.Eng.
41 Ph.D.

41
Environmental Engineering

5 M.S./M.Eng.
36 Ph.D.

RESEARCH EXPENDITURES AND GRANTS

$20M+

annual research expenditures and grants

$120M+

funded projects since January 2019 across all SoCEE centers

THE SOCEE TEAM

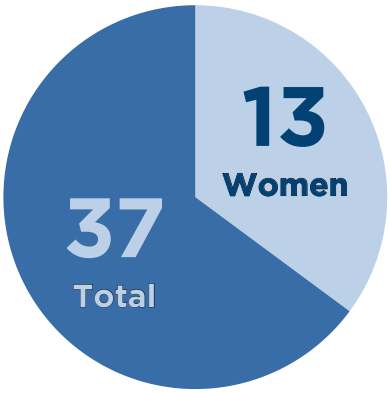
10 Full Professors

5 Associate Professors

8 Assistant Professors

4 Professors-in-Residence

10 Research Professors



AY 2024-2025

Director of School
Dr. Kay Wille

Environmental Engineering Program Director
Dr. Timothy Vadas

Director for Undergraduate Studies
Dr. Nicholas Lownes

Director for Graduate Studies
Dr. Alexandra Hain

Director for Innovation and Student Success
Dr. Sarira Motaref

Senior Design Coordinator
Dr. Wei Zhang

MEET OUR FACULTY

Scan the QR code to get to know our faculty in all three focus areas: Structural Engineering and Applied Mechanics, Transportation and Urban Engineering, and Environmental Engineering.

Leading Research.
Lasting Impact.

Innovation for a Changing World

SoCEE's research centers drive discovery that reimagines infrastructure, safeguards the environment, and prepares communities for the challenges ahead.

Building on a tradition of engineering excellence, the School of Civil and Environmental Engineering drives innovation across transportation, energy, and marine systems to meet the challenges of a rapidly changing world. Through its research centers and partnerships with state and federal agencies, SoCEE advances solutions that improve safety, strengthen resilience, and promote sustainability. Faculty-led initiatives integrate cutting-edge technology with real-world application, transforming data into impact and research into practice.

The following highlights showcase the breadth of discovery and collaboration that define this mission.

Through partnerships with federal agencies, state departments, and industry leaders, SoCEE serves as a catalyst for progress in Connecticut and beyond.

Connecticut Transportation Institute
UNIVERSITY OF CONNECTICUT

The Connecticut Transportation Institute supports safer, smarter mobility systems through data-driven solutions and statewide workforce development.

NATIONAL INSTITUTE FOR UNDERSEA VEHICLE TECHNOLOGY

The National Institute for Undersea Vehicle Technology advances the frontiers of naval innovation, uniting academia, government, and industry to support the next generation of maritime technology and workforce excellence.

UCONN EVERSOURCE ENERGY CENTER

The Eversource Energy Center harnesses predictive modeling and interdisciplinary expertise to prepare for and mitigate the effects of extreme weather on critical energy infrastructure.

CTI director, Eric Jackson, in a high-fidelity driving simulator. Jackson is helping launch the first Autonomous Vehicle Test Track and Research Center in Connecticut.

Connecticut Transportation Institute

DIRECTOR: ERIC JACKSON

The Connecticut Transportation Institute (CTI) serves as UConn's hub for transportation research, training, and innovation. It advances roadway safety and infrastructure performance across the state. CTI's core programs include the Training and Technical Assistance (T2) Center, the Connecticut Advanced Pavement Laboratory (CAP Lab), and the Connecticut Transportation Safety Research Center (CTSRC).

Over the past year, CTI delivered more than 170 trainings to nearly 5,000 participants, launched new workforce initiatives in technical high schools, and advanced speed management efforts across the state. CAP Lab worked with CTDOT to pioneer Balanced Mix Design methods that are reducing pavement cracking and extending roadway life. CTSRC secured two major federal grants totaling $16 million to expand data-driven safety analytics.

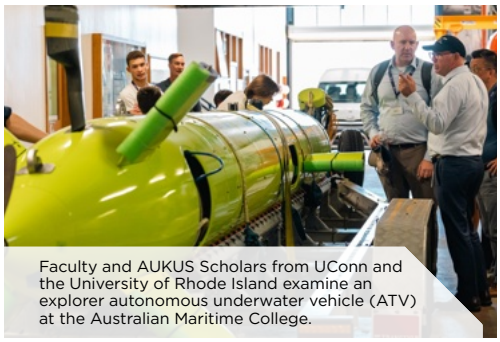
TECHNICAL ASSISTANCE TO BROWNFIELDS PROGRAM

Within CTI, the Connecticut Brownfields Initiative (Technical Assistance to Brownfields Program), led by Dr. Randi Mendes, helps communities across EPA Region 1 revitalize contaminated and underutilized sites through education, outreach, and hands-on student engagement. In 2024, the program provided technical assistance to 231 communities, completing more than 330 actions and achieving a 40% increase in redevelopment support from the previous year.

National Institute for Undersea Vehicle Technology

DIRECTOR: RICHARD CHRISTENSON

The National Institute for Undersea Vehicle Technology (NIUVT), a partnership between UConn and the University of Rhode Island, was established to strengthen the Navy science and technology workforce in New England. With support from the Office of Naval Research, the Department of Defense, and the Maritime Industrial Base Program, NIUVT connects students, faculty, industry, and government leaders in a region that is home to the Naval Submarine Base New London, the Naval Undersea Warfare Center, and more than 600 supply chain companies.



Faculty and AUKUS Scholars from UConn and the University of Rhode Island examine an explorer autonomous underwater vehicle (ATV) at the Australian Maritime College.

Through specialized coursework, summer programs, and direct engagement with industry and Navy professionals, NIUVT prepares undergraduates for careers in naval engineering while also encouraging graduate study in critical STEM fields.

NAVY STEM PROGRAM

In collaboration with NIUVT, the Navy STEM Program, directed by Dr. Alexandra Hain, has secured long-term funding to expand outreach, education, and workforce development initiatives across Connecticut and Rhode Island. The program creates a regional community of naval stakeholders—from academia and industry to federal and state agencies—focused on building the next generation of engineers and researchers in naval science and technology.

Diego Cerrai, Interim Director of the Eversource Energy Center, standing at the "GAIL" site – part of the NASA GPM Ground Validation Field Campaign at UConn.

Eversource Energy Center

DIRECTOR: DIEGO CERRAI

The Eversource Energy Center at UConn brings together cutting-edge research, advanced technology, and industry partnership to strengthen the reliability and resiliency of the electric grid. By focusing on the intersection of weather, climate, and energy, the Center is delivering science-based solutions that directly benefit communities and utility customers.

Research innovations include high-resolution weather and outage forecasting, 3-D aerial and ground imaging of infrastructure, and guidance for tree and forest management practices. These efforts help predict storm impacts, stage repair crews before weather events, and prevent outages by identifying and addressing vulnerabilities in advance. The Center's work is not only shortening power disruptions but also informing national conversations on storm resilience and energy security.

With more than $3 million in specialized equipment and a collaborative network of UConn faculty, researchers, and industry partners, the Center is building the grid of the future today. From developing storm-resilient trees to advancing cyber and physical security, the Eversource Energy Center exemplifies how university research can translate into real-world solutions that protect communities and power everyday life.

Arash Zaghi Receives Prestigious Presidential Early Career Award

Dr. Arash Zaghi, Professor of Civil and Environmental Engineering, received the Presidential Early Career Award for Scientists and Engineers (PECASE) – the highest honor bestowed by the U.S. government on early-career researchers. His NSF-supported research reframes neurodiversity in STEM education through a strengths-based approach, advancing inclusive teaching and transforming perceptions of neurodivergent talent in engineering.

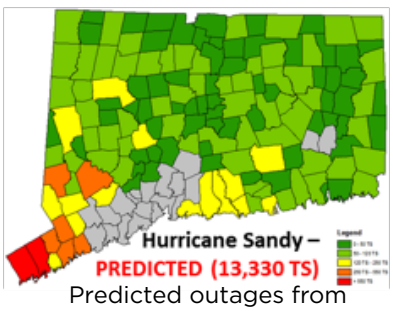
"We were extremely fortunate that the NSF invested in us," Dr. Zaghi shared. "What began as a bold idea has now substantially contributed to changing perspectives on neurodiversity in STEM education."

Dr. Zaghi's previous accolades include the NSF CAREER Award and NSF Mid-Career Advancement Award, reflecting his commitment to advancing innovation in education through initiatives such as utilizing artificial intelligence to enhance STEM participation among neurodivergent students.

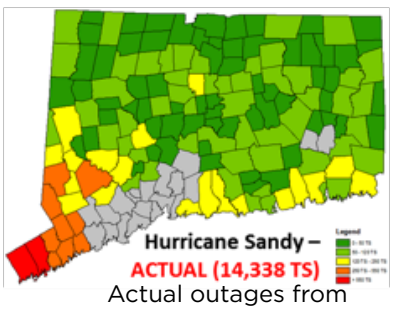
Diego Cerrai Receives NSF CAREER Award for Power Outage and Restoration Modeling

Dr. Diego Cerrai, Assistant Professor of Civil and Environmental Engineering and Interim Director of the Eversource Energy Center (EEC), has received a National Science Foundation (NSF) CAREER Award in support of his research into storm impact modeling and infrastructure resilience.

His team has been collaborating with NASA for the past four years, collecting detailed data on falling snow, including its density and the number of particles in a given volume. These observations are essential for refining weather models and building more accurate outage prediction tools.



Predicted outages from Hurricane Sandy (2012) in Eversource CT service territory



Actual outages from Hurricane Sandy (2012) in Eversource CT service territory

"For accurate forecasts, it is absolutely necessary to model the road conditions."

5 SoCEE Faculty Ranked in Top 2% of Scientists

Five faculty members from the School of Civil and Environmental Engineering have been recognized among the world's top 2% of scientists in 2024, according to Stanford/Elsevier's Top 2% Scientist Rankings. This ranking highlights the most widely cited scholars across a variety of scientific disciplines, underscoring their significant contributions to research and global impact. The recognized faculty members and their respective fields are below:

- **Kay Wille** (Rank: 46,973) – Built Environment & Design
- **Guiling Wang** (Rank: 93,874) – Earth & Environmental Sciences
- **Emmanouil N. Anagnostou** (Rank: 104,051) – Earth & Environmental Sciences
- **Baikun Li** (Rank: 177,226) – Enabling & Strategic Technologies
- **Jeongho Kim** (Rank: 309,421) – Engineering

The inclusion of these faculty members on this list highlights their exceptional career-long contributions to civil and environmental engineering. Their work not only advances academic knowledge but also provides innovative solutions to pressing global challenges in sustainability, energy, and infrastructure resilience.

Davis Chacón-Hurtado Receives National ASCE Teaching Award

Dr. Davis Chacón-Hurtado, Assistant Professor in the School of Civil and Environmental Engineering and Co-Director of the Engineering for Human Rights Initiative, was selected as a recipient of the 2025 ExCEEd New Faculty Excellence in Teaching Award, presented by the American Society of Civil Engineers (ASCE).

The award, part of ASCE's long-running Project ExCEEd (Excellence in Civil Engineering Education), honors early-career faculty who demonstrate exceptional teaching abilities, a dedication to student learning, and a strong commitment to the values of civil engineering education. He was selected for his outstanding classroom instruction, student mentorship, and commitment to integrating human rights principles into engineering education.

At UConn, Dr. Chacón-Hurtado exemplifies the mission of ExCEEd through his role as Co-Director of the Engineering for Human Rights Initiative (see pg. 18). Through this initiative, he works alongside more than 60 faculty across disciplines to develop ethical, accessible, and socially responsive engineering solutions to global challenges such as water access, food security, infrastructure justice, and cybersecurity.

Marina Astitha Named Eversource Energy Professor in Environmental and Sustainability Education

Dr. Marina Astitha has been selected as an Eversource Energy Professor in Environmental and Sustainability Education. This distinguished three-year appointment, conferred by the UConn College of Engineering, recognizes early- to mid-career faculty who exemplify excellence in research, innovation in teaching, and service to the profession and broader community.

Dr. Astitha, an Associate Professor in SoCEE, is internationally recognized for her contributions to atmospheric and environmental sciences. She leads UConn's Atmospheric and Air Quality Modeling Group, where her research is at the forefront of integrating physics-based modeling with artificial intelligence and machine learning to address critical challenges in atmospheric science, extreme storms, renewable energy, and climate resilience. Her work supports a wide range of interdisciplinary applications.

New Faculty Appointment

SoCEE welcomes Dr. Zhi Li as Assistant Professor of Environmental Engineering. Dr. Li's research centers on developing and applying environmental flow modeling tools to better understand watershed hydrology, flooding, water quality, and transport processes. His work bridges fundamental scientific understanding with practical solutions to real-world environmental and engineering challenges.

Faculty Promotion

Dr. Manish Roy has been promoted to Associate Professor in Residence in Structural Engineering. A dedicated educator and researcher, Dr. Roy specializes in structural analysis, concrete materials, and resilient design. His leadership in teaching and student mentorship continues to strengthen SoCEE's structural engineering program and commitment to academic excellence.

Ph.D. Students Earn Prestigious NASA and Team-TERRA Honors

Ph.D. students Oluwaseun Akinola Moses and Himel Moulik have each earned prestigious recognition for their excellence in environmental research and leadership as 2025–2026 Team-TERRA Fellows. The fellowship brings together an interdisciplinary cohort of researchers dedicated to assessing and mitigating environmental risks through coursework, symposia, and field-based research. In addition to this honor, Oluwaseun was also selected as a Graduate Mentor for the 2025 NASA Student Airborne Research Program (SARP), where he will guide undergraduate researchers in data collection and analysis aboard NASA aircraft as part of an immersive Earth science program in California. His mentorship role builds on his doctoral work at UConn, which examines atmospheric chemical reactions and ozone formation using advanced modeling tools such as CMAQ and WRF.

Student Oluwaseun Olufowobi Named 2025 Lifesavers Traffic Safety Scholar

Oluwaseun Olufowobi, a student in UConn's Civil and Environmental Engineering program, was named a 2025 Lifesavers Traffic Safety Scholar (TSS). The Lifesavers Traffic Safety Scholars Program is a highly competitive initiative that selects a small group of undergraduate and graduate students across the U.S. to participate in the nation's largest gathering of traffic safety professionals. Scholars engage with cutting-edge research and strategies in traffic safety while networking with leading experts in engineering, public health, law enforcement, policy, and technology.

UConn EERI Selected to Compete in the 2025 Seismic Design Competition at UC Berkeley

The University of Connecticut's Earthquake Engineering Research Institute (EERI) team was selected to participate in the prestigious 2025 Undergraduate Seismic Design Competition (SDC) at the University of California, Berkeley, which took place from March 31 – April 3, 2025. This annual competition brings together over 30 university teams from across the U.S. and around the world to design, construct, and test a scale-model high-rise building capable of withstanding simulated earthquake forces.

SoCEE Student Selected for NSF NHERI REU Program

Priya Whitley, an undergraduate student majoring in civil engineering at the University of Connecticut, was selected to participate in the highly competitive 2025 NSF NHERI Research Experiences for Undergraduates (REU) Summer Program. This summer, Priya joined a select cohort of students from across the country to conduct cutting-edge research at the University of Florida's Boundary Layer Wind Tunnel Experimental Facility (BLWT)—one of the most advanced laboratories in the United States for studying the effects of extreme wind events on civil infrastructure. She is 1 of just 41 students chosen for the NHERI SURF-REU cohort, which spans six REU sites nationwide and ran from June 2 through August 5, 2025.

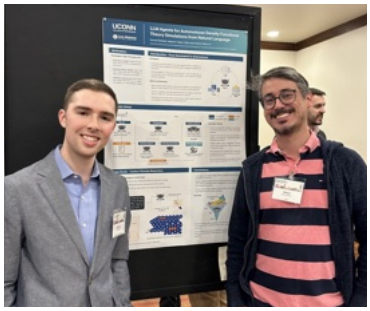
Students Max Wolff and Benjamin Shatzel Selected for 2025-26 Moles Scholarship

Max Wolff and Benjamin Shatzel were awarded the 2025–2026 Moles Scholarship, a prestigious honor recognizing outstanding students pursuing careers in heavy construction. Max, a civil engineering student working at Wolff Engineering, applied his studies to subsurface sewage disposal and site design projects across Connecticut, while Benjamin, a transportation intern at Barton & Loguidice, contributed to bridge and highway replacement projects throughout Western New York.

Ph.D. Candidate Meshach Ojo Awarded ACI Charles Pankow Foundation Fellowship

Meshach Ojo was awarded the 2025–2026 Charles Pankow Foundation Fellowship by the American Concrete Institute Foundation, one of the most competitive national honors recognizing exceptional promise in concrete materials science and engineering. His research focused on addressing the widespread issue of crumbling concrete foundations caused by pyrrhotite-bearing aggregates, a problem affecting thousands of homes across the Northeast. By employing innovative electrochemical techniques to replicate long-term deterioration in laboratory settings, Meshach advanced understanding of how this damage progresses and laid the groundwork for developing more effective mitigation strategies.

Ph.D. Student Samuel Rothfarb Won National Award for AI-Driven Materials Research



Samuel Rothfarb, a first-year Ph.D. student and advisee of Dr. Baikun Li, was awarded the NVIDIA GPU Award for Outstanding Research and Poster Presentation at the 2025 Machine Learning in Chemical and Materials Science (MLCM) Conference in Santa Fe, New Mexico. His winning research, "LLM Agents for Autonomous Density Functional Simulations from Natural Language," developed in collaboration with Los Alamos National Laboratory researchers, explored how multi-agent large language model systems can autonomously conduct quantum simulations and accelerate materials discovery. Competing against researchers from institutions such as UCLA, Carnegie Mellon, and Oak Ridge National Laboratory, Rothfarb was the only participant representing environmental engineering and received the top prize, along with an NVIDIA RTX 4000 Ada GPU to support his future work.

Ph.D. Student Olin Green Receives El Instituto Predoctoral Fellowship to Study Transportation Safety Inequity

Olin Green, a doctoral candidate in the School of Civil and Environmental Engineering at the University of Connecticut, has been awarded the 2024–2025 El Instituto Predoctoral Fellowship with support from the Elizabeth Mahan Fund. This competitive award supports full-time pre-doctoral students conducting interdisciplinary research related to Latinx and Latin American communities. Green's project, *The Hidden Dimensions of Road Safety: Exploring Socioeconomic and Built Environment Factors in Latin American and Minority Communities*, examines how environmental and behavioral factors contribute to transportation safety disparities in underserved areas. His work addresses the disproportionate risks of injury and fatality faced by Latino and African American populations on U.S. roadways.

Xingyu Wang Receives 2025 CAPEES-Elsevier Best Doctorate Dissertation Award

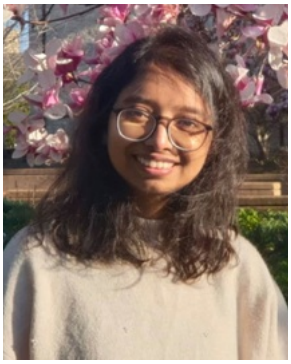
Xingyu Wang, a Postdoctoral Researcher at the University of Connecticut School of Civil and Environmental Engineering, has been selected as a recipient of the 2025 CAPEES-Elsevier Best Doctorate Dissertation Award. This prestigious honor, presented by the Chinese-American Professors in Environmental Engineering and Science (CAPEES) in partnership with Elsevier, recognizes two outstanding doctoral dissertations in the field of environmental engineering or science in the U.S. CAPEES is the largest academic association of Chinese environmental engineering and science scholars in North America. Dr. Wang's award-winning dissertation focuses on innovative methods to recover valuable resources from wastewater, contributing to both environmental protection and climate change mitigation. His research combines electrochemistry, membrane development, and advanced modeling to create efficient systems for carbon and metal recovery.

Aagya Dahal Awarded "Faculty for the Future" Fellowship Renewal for 2025-26

Aagya Dahal, a Ph.D. student in the School of Civil and Environmental Engineering, has been awarded a renewal of the Schlumberger Foundation Faculty for the Future Fellowship for the 2025-2026 academic year. This prestigious international fellowship supports women from developing and emerging economies who are pursuing PhDs or postdoctoral research in STEM disciplines and are committed to academic careers in their home countries. With a rigorous selection process that evaluates academic excellence, research impact, and future potential, the award provides up to $50,000 to support tuition and living expenses.

Incoming PhD Student Ziqi Guo Awarded Impact Scholars Fellowship to Advance Climate Research

Ziqi Guo, an incoming Ph.D. student in UConn's Environmental Engineering program has been named an Impact Scholars Fellow, a prestigious award granted to incoming doctoral students who demonstrate academic excellence, leadership potential, and a commitment to creating positive societal change. Guo's research focuses on developing AI and process-based models to assess and mitigate the impacts of climate extremes and ecological degradation. His past work examined how natural disasters like landslides, wildfires, and floods disrupt sediment transport pathways around the globe. At UConn, he will expand on this research in the Hydroclimatology and Biosphere-Atmosphere Interactions lab of Professor Guiling Wang, whose group specializes in climate modeling, land-atmosphere interactions, and hydrological extremes.



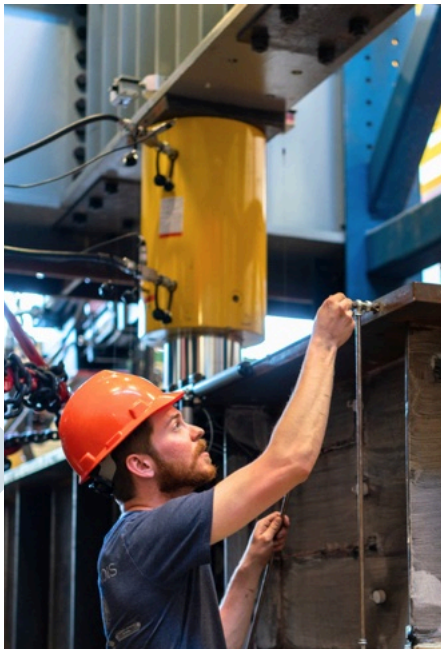
Haimanti Bala Receives Bridgette Beato Leadership Legacy Scholarship from WTS-CT

Haimanti Bala, a Ph.D. candidate in the School of Civil and Environmental Engineering at the University of Connecticut, has been awarded the Bridgette Beato Leadership Legacy Scholarship by the Connecticut Chapter of WTS (Women's Transportation Seminar). This scholarship recognizes outstanding graduate students pursuing careers in transportation or related fields who have demonstrated exceptional leadership potential and a commitment to innovation in the transportation sector. Haimanti's research focuses on autonomous on-demand transportation services, an area with increasing relevance as cities seek smart mobility solutions.

FOR MORE DETAILS ON OUR FACULTY AND STUDENTS' INCREDIBLE ACHIEVEMENTS, CHECK OUT OUR NEWS HERE:

cee.engr.uconn.edu/about-us/news-archive

Education for *Tomorrow's Challenges*



Minor in Construction Engineering and Management

Introduced in 2017, the Construction Engineering and Management minor has grown rapidly, nearly doubling in enrollment from its inaugural 28 students to 44. Designed in collaboration with industry partners and informed by feedback from the Industrial Advisory Board, the minor equips students with essential project management, construction, and leadership skills that complement traditional civil and environmental engineering curricula. The program provides hands-on experience through coursework, guest lectures, and internship opportunities that connect students directly with Connecticut's engineering and construction sectors.

Upcoming Major in Construction Engineering, Management and Intelligent Systems

Building on the success of the minor, SoCEE is developing a new B.S. in Construction Engineering, Management and Intelligent Systems, set to launch in Fall 2027. The program is designed to address the growing workforce demand across Connecticut and the Northeast for professionals skilled in sustainable construction, project delivery, and infrastructure innovation. Students will gain hands-on experience in construction materials, intelligent systems, and management technologies that reflect the needs of a rapidly modernizing industry.

> **"Advisory input and internships will keep coursework aligned with active practices in Connecticut's construction sector."**
>
> **Kay Wille**
> Director of School

Developing Minor in Coastal Engineering and Intelligent Forecasting

SoCEE is in the early stages of developing a minor in Coastal Engineering and Intelligent Forecasting, which will focus on coastal resilience, climate adaptation, and the use of artificial intelligence for intelligent forecasting. The proposed program will integrate civil, environmental, and marine engineering principles to prepare students to design and manage sustainable coastal infrastructure in the face of evolving climate challenges.

2025 SENIOR DESIGN AWARD WINNERS

The School of Civil and Environmental Engineering proudly celebrates the achievements of our undergraduate students who showcased their capstone work at the annual Senior Design Demonstration Day on May 2, 2025. This culminating event highlights a year of collaboration, research, and innovation as students tackle real-world engineering challenges alongside industry sponsors.

Outstanding projects were recognized across the Civil Engineering (CE) and Environmental Engineering (ENVE) programs. Below are the winning teams, whose work exemplifies the excellence and impact of a UConn engineering education.

CIVIL ENGINEERING TEAMS

New Single-Story Retail Building

Sponsored by E2 Engineers

Team Members: Elizabeth Doyle, Caroline Insinna, Sophia Klaboe, Amina Redzovic

They designed a steel-framed retail building with a concrete foundation, optimizing the structure through finite element analysis and hand calculations. Their project included full construction drawings and a carbon emissions assessment with strategies to reduce the building's environmental impact.

Intersection Improvements at Route 6 and Route 61

Sponsored by CTDOT

Team Members: Kristen Daddi, Ethan Peck, Priscilla Sawyer, Austin St. Cyr

They developed two proposed redesigns for the intersection: a modern single-lane roundabout to promote traffic calming and improve visibility, and a signalized intersection as an alternative solution. Their work balanced public safety, transportation engineering principles, and feasibility considerations.

Beacon Falls Railroad Station Platform Upgrade

Sponsored by HDR

Team Members: Matthew Barber, Lea Brinton, Alexander Foster, Quinn Havard

This project involved a preliminary design for a high-level platform at the Beacon Falls rail station. The team developed 15% design plans for the track realignment, a 350-foot platform with canopy, and related station site work, including upgrades to parking and pedestrian access.

ENVIRONMENTAL ENGINEERING TEAMS

Nitrogen Removal at York Wastewater Treatment Facility

Sponsored by Arcadis

Team Members: Ethan Esposito, Julia Horlitz, Jeffrey Valentine

They proposed upgrades to optimize nutrient removal at the York WWTF in York, ME. Drawing on best practices from Metcalf & Eddy and TR-16 design guides, they re-evaluated the aeration process to ensure compliance while minimizing environmental impact, with the goal of achieving effluent nitrogen concentrations below 8 mg/L.

Optimization of Water Quality in Waterford, CT

Sponsored by Wright-Pierce

Team Members: Julia Braithwaite, Lily Johnson, Cody Voorhies, Suki Zheng

They developed and modeled solutions to improve distribution system quality. Their design combined a strategic water main flushing program and active tank mixing with THM removal, informed by a custom-built hydraulic model of the affected zone.

Synthetic Alternative to ASTM C-33 Sand

Sponsored by Eljen

Team Members: Kateryna Pekar, Grace Shvodian

This project explored synthetic alternatives for use in the Eljen Geotextile Sand Filter (GSF) system. Drawing inspiration from UConn's early geotextile research in the 1970s, the team evaluated materials such as recycled glass and non-woven fabrics to replicate filtration performance and improve long-term feasibility for onsite wastewater systems.

GRADUATE CERTIFICATES

Bridge Engineering Certificate

This certificate addresses the urgent national need to strengthen and modernize bridge infrastructure as many structures approach the end of their service life. This program provides a comprehensive foundation in the design, evaluation, and rehabilitation of bridges, with emphasis on innovative construction technologies and resilience against extreme events. Coursework covers the fundamentals of bridge design, accelerated bridge construction, the design of bridges for extreme loads, and prestressed concrete applications.

Contaminated Site Remediation Certificate

Equips engineers to address complex environmental challenges related to soil and groundwater contamination. The program provides a cohesive understanding of site characterization, contaminant fate and transport, and remediation system design. Students gain the knowledge needed to plan and design site investigations, assess the physical, chemical, and biological processes governing contaminant behavior in subsurface environments, and apply these principles to the selection and design of appropriate treatment technologies.

Power Grid Modernization Certificate

Offered through the Eversource Energy Center, advances the skills of engineers working in today's rapidly evolving energy landscape. The program responds to one of the most significant infrastructure transformations in U.S. history—the modernization of the electric grid—and prepares professionals to address emerging challenges in grid resilience, renewable integration, and energy security. Coursework explores the operation of the physical grid as it shifts from one-way to two-way energy flow, the use of data analytics for grid management and prediction, the development of integrated communication systems, and the application of advanced control and regulatory frameworks for distributed energy resources.

"UConn CEE has been my academic home from undergraduate through Ph.D., and it shaped not only my technical skills but also my way of thinking as an engineer and researcher. The mentorship and sense of community I found there continue to influence my work and professional growth every day."

Leana Santos, Ph.D.
Civil Engineering, 2025

Engineering for Human Rights Initiative

DIRECTORS: DAVIS CHACON HURTADO & SHAREEN HERTEL

The Engineering for Human Rights Initiative (ENG-HR) is a collaborative venture between UConn's College of Engineering (CoE) and the Gladstein Family Human Rights Institute (HRI) that addresses human rights implications of the most significant challenges in engineering and technology.

The Initiative involves 60+ faculty affiliates across departments within the CoE and in UConn's School of Medicine, School of Social Work, Law School, School of Business, College of Liberal Arts & Sciences, and College of Agriculture, Health & Natural Resources. Globally recognized for our efforts at mainstreaming human rights into engineering education and research, we train undergraduate and graduate students, postdoctoral fellows, and industry partners through courses and research collaboration with UConn colleagues and international partners.

The EHRI has six key research areas: 1) Water, Health & Food Security; 2) Product Design, Manufacturing, and Supply Chain Management; 3) Community Planning, Resilience, and Justice for a Changing Environment; 4) Engineering Education and Accessibility Rights; 5) Engineering Substances and Process Sustainability; and 6) Cybersecurity, Privacy and Human Vulnerability.

Neuroinclusive Teaching

It's time to move beyond accommodations and start building more inclusive learning environments in STEM – classrooms where neurodiversity is valued as part of our collective creative potential, and where all students feel that they belong. It all starts with recognizing students' strengths and the ways that they can contribute to innovation in STEM by bringing their unique ways of thinking and experiencing the world to problem solving.

> "Sometimes minor changes can make a huge difference."
>
> **SoCEE Faculty**

5818

Students enrolled in Neuroinclusive Courses Fall '20 – Spring '25

17

Neuroinclusive courses implemented in SoCEE and ENGR

Active Learning

Accessible Materials

Strengths-based Approach

Neuroinclusive Courses Offered ('20 – '25)

CE 2110 • Applied Mechanics I (Statics)
CE 2251 • Probability and Statistics
CE 3110 • Mechanics of Materials
CE 3220 • Construction Management I
CE 3510 • Soil Mechanics
CE 3610 • Structural Analysis and Design
CE 3640 • Design of Concrete Structures
CE 4210 • Operations Research in CEE
CE 4510 • Foundation Engineering
CE 4720 • Street & Highway Design
ENVE 2310 • Environmental Engineering Fundamentals
ENVE 3120 • Fluid Mechanics
ENVE 3220 • Water Quality Engineering
ENVE 3230 • Air Pollution Control
ENVE 4210 • Environmental Engineering Chemistry
ENVE 4810 • Engineering Hydrology
ENGR 1166 • Foundations of Engineering

> "It's definitely...helped me get to where I am."
>
> **SoCEE Student**

Neuroinclusive courses may enhance:

- Student learning outcomes
- Instructional quality
- Sense of belonging

Open & Clear Communication

Personalization

Multiple Modes of Assessment

Tim Vadas
Environmental Engineering
Program Director

This past year we started a Student Chapter of the American Academy of Environmental Engineers and Scientists (AAEES), spearheaded by four fantastic students, Jenna DePonte, Calla Kutschke, Morgan Randall and Nicholas Morehouse, and supported by two faculty members Dr. Tim Vadas and Dr. Abi Lawal. Club membership is growing rapidly with well planned events around professional development, careers and peer support.

Our program would not be possible without the connections with alumni we have built over the years, whether you sit on the advisory board, sponsor senior design projects, judge senior design projects, give a guest lecture in one of our courses, come to talk about career options in the major, or hire our students. We appreciate the support and look forward to working with you more in the future.

FEATURED PROJECTS

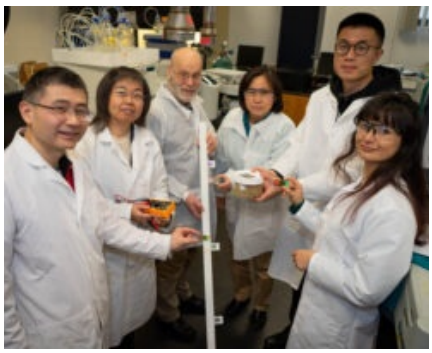
Coproducing Actionable Science to Understand, Mitigate, and Adapt to Cyanobacterial Harmful Algal Blooms (CHABS)

This NSF DISES-funded project is advancing understanding of how nutrient pollution, governance, and human behavior influence cyanobacterial harmful algal blooms (CHABs). By integrating watershed modeling, economic analysis, and stakeholder collaboration, the research aims to improve water quality management and train future scientists to address complex socio-environmental challenges.

Water and Food Security PIRE

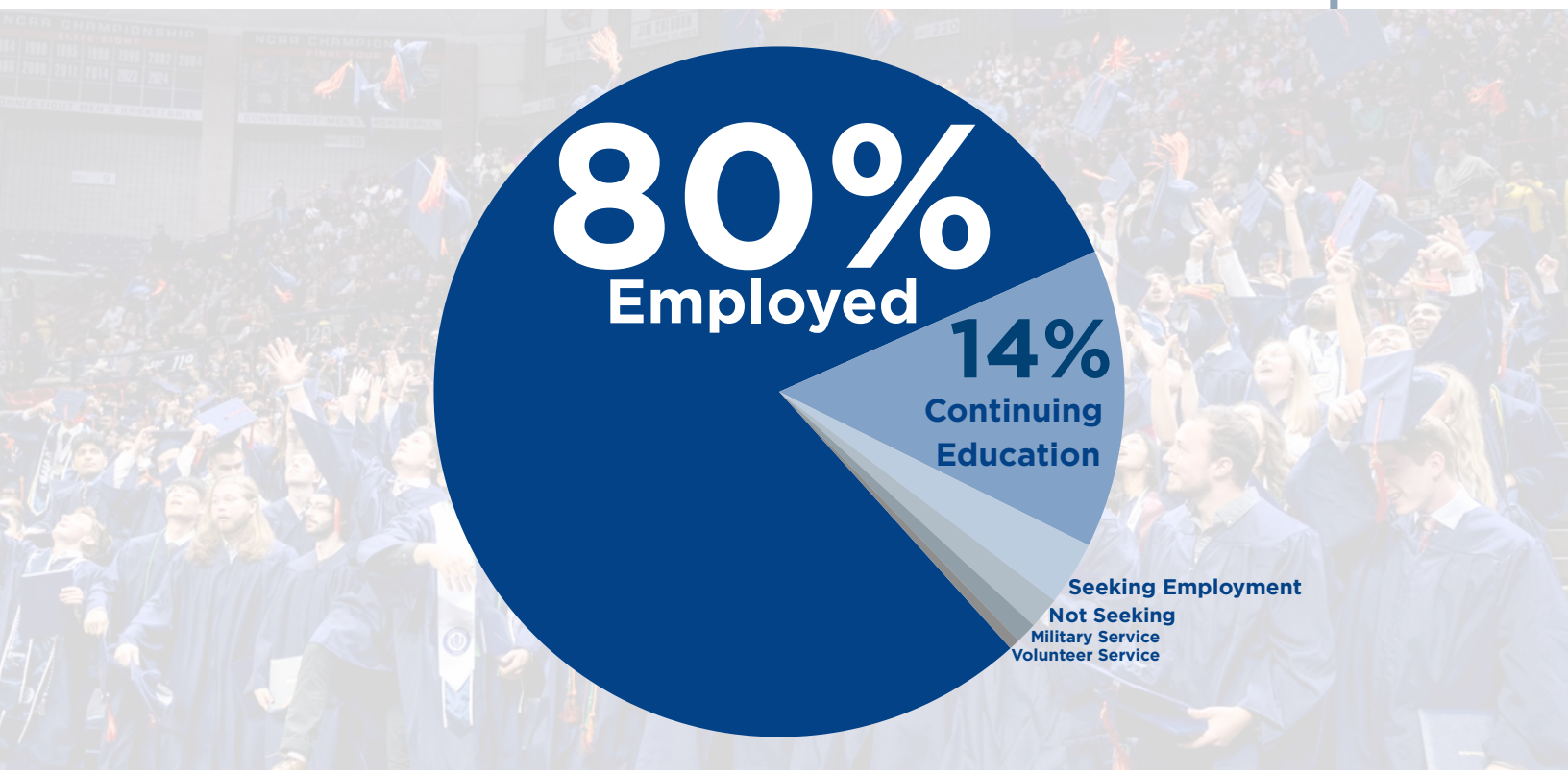
This international partnership in Ethiopia's Blue Nile Basin unites sociological and engineering approaches to strengthen food and water security. By developing decision tools for smallholder farmers, the project helps communities adapt to climate extremes while fostering more inclusive and effective science-policy collaboration.

SitS NSF UKRI: Decoding Nitrogen Dynamics in Soil via Novel Integration of in-situ Wireless Soil Sensors with Numerical Modeling



This US–UK collaborative project addresses excess nitrogen leaching from agricultural lands to improve water and fertilizer efficiency. The team is developing innovative hydrogel-coated ion-selective sensors and numerical models to monitor soil nitrogen and moisture in real time, enabling high-resolution insights into rhizosphere dynamics and more sustainable nutrient management under varying weather and farming conditions.

SOCEE ALUMNI



> "SoCEE fundamentally shaped the way I think, solve problems, and lead in complex environments. The faculty's support, curriculum, and the collaborative community all played a crucial role in preparing me to step confidently into my professional career."

Rocco Veneruso
Civil Engineering, 2025

TOP EMPLOYERS

The following is a list of the most common employers that students have reported working for post-graduation. Only employing organizations are listed below. This is not a complete list of all employers, rather the most common.

1. **Connecticut Department of Transportation**
2. **Whiting-Turner Contracting Company**
3. **Tighe & Bond**
4. **AECOM**
5. **General Dynamics Electric Boat**
6. **Fuss & O'Neill**
7. **BL Companies**
8. **Turner Construction Company**
9. **Burns & McDonnell**
10. **Loureiro Engineering Associates**

Partnership with *Purpose*

INDUSTRIAL ADVISORY BOARD

Mark Allyn, P.E. Principal, *Salas O'Brien*
Sebastian Amenta, P.E. Regional Program Director, *Comprehensive Environmental Inc.*
Tim Arborio, CEO, *Arborio Corporation*
Jeanine Armstrong Gouin, P.E. President and U.S. Managing Director, *SLR International Corporation*
Thomas C. Berl, Senior Program Manager, *General Dynamics Corporation, Electric Boat Corp.*
Christopher Cardany, P.E., LEED AP Principal and Vice President, *Langan Engineering & Environmental Services*
Damayanti Chaudhuri, P.E. Senior Project Manager, *Loureiro Engineering Associates, Inc.*
Megan Coleman, ENV SP Senior Lead Project Engineer, *JKMuir, LLC*
Michael Culmo, P.E. Chief Bridge Engineer, *CHA*
Brian Cutler, Ph.D. CEO, *Loureiro Engineering Associates, Inc.*
James Fallon, P.E. Chief Engineer and Bureau Chief of Engineering and Construction, *CTDOT*
George T. Gerard, P.E. Structural Engineer and Senior Consultant, *WSP USA*
Sharavan Govindan, Director, Social Learning, *Bentley Systems, Inc.*
David Gross, PELS Consultant
Lucas Hellerich, Ph.D., P.E., LEP Practice Leader, Remediation Engineering, *Woodard & Curran*
David Jacobs, Ph.D., P.E., Adjunct Professor, *University of Hartford*
Udayarka Karra, Ph.D., P.E. Process Engineer, *Arcadis U.S., Inc.*
Michael Lombardi, P.E. Vice President of Design & Construction, *Foxwoods Resort Casino*
Aaron Mednick, CEO, O&G Industry
Lauren Mello, P.E., CNU-A Senior Engineer and Project Manager, *Fuss & O'Neill, Inc.*
Jessica Miller, P.E. Vice President of Operations, *Skanska USA Civil Northeast*
Kristin Morico, P.E., DEE, CSP Vice President EHS & Sustainability, *Baxter International, Inc.*
Haley Palmer, Project Manager, *The Whiting-Turner Contracting Company*
Don Shubert, President, *CT Construction Industries Association*
Vincent Siefert, P.E. President and CEO, *Siefert Associates, LLC*
Sandra Stavola, P.E., CCM Vice President and Engineering Construction Manager, *STV*
Andrew White, P.E., ENV SP Project Manager, *Tighe & Bond*

INDUSTRY ENGAGEMENT OVERVIEW

Student Engagement

- **Senior Design Projects** (Struct., Transp., ENVE, Constr.)
- **Internship Night / Internships** CE & ENVE; CEMI in progress
- **Scholarships (Industry/Org)** CE & ENVE; CEMI in progress
- **Industrial Course CE 3995** Industry Site Visits
- **Alumni-Student Mentorship** CE & ENVE; CEMI in progress
- **Guest Lectures** (Struct., Transp., ENVE, Constr.)
- **Career Development Event & Industry Seminar Series**
- **In-Class Panel Discussions** (During Senior Design)
- **Adjunct Hiring** Senior Design in Construction

Sponsorship Opportunities

- **Awards & Scholarships, Fellowships** Professorships Managed by School
- **Naming Opportunities** Chaired Prof., Programs, Office Doors, AI Studio, APIR, etc.
- **Course Support** Lab consumables, software
- **Student Chapters** ASCE, SEI, others
- **Student Clubs** Human Powered Submarine, Concrete Canoe, Steel Bridge AAEES, ITE, Construction
- **Student Identity** Hoodies during welcome event

Curriculum Input

- **Undergraduate (CE, ENVE, CEMI)** New CEMI major, new minors (e.g., AI in Engineering), new UG courses (e.g., Submarine Design, Industry Visits), revisions to strengthen CE/ENVE majors & minors (e.g., Asset Management), module updates
- **Graduate (CE, ENVE, CEMI)** New M.S. certificates (Naval, Construction, Coastal)

Research Opportunities

- **Industry Affiliation Program** Through IMS
- **Research Topics** CE, ENVE, CEMI

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www.linkedin.com/school/uconn-civil-and-environmental-engineering/

RESEARCH LABS

Advanced Cementitious Materials & Composites
Bridges material design, structural applications, and computational simulations to advance safety, resilience, and quality of life.

The Agrios Research Group
Interested in environmental applications of nanoscale semiconductors, especially in low-cos solar energy conversion.

Atmospheric and Air Quality Modeling Group
Integrating physics-based modeling with artificial intelligence and machine learning to address challenges in atmospheric science, extreme storms, renewable energy, and climate resilience.

Computational Mechanics Research Laboratory
Developing various state-of-the-art finite element procedures to solve thermo-metallurgical-mechanical engineering problems including computational fluid dynamics.

Connecticut Transportation Safety Research Center
Developing and maintaining a state-of-the-art crash data entry, collection, and safety analysis system.

Damage Modeling and Disaster Mitigation Lab
Developing effective methodologies for life-cycle performance design, diagnosis, and rehabilitation of civil infrastructure and systems.

Environmental Flow Computing Lab
Dedicated to studying above- and belowground water flow and transport phenomena across watersheds, rivers, wetlands, and coastal areas.

Hydroclimatology and Biosphere-Atmosphere Interactions
Understanding and quantifying the terrestrial hydrological cycle, its variability, changes, and interactions with the rest of the Earth system.

Smart Infrastructure Laboratory
Pursuing the development of innovative structural health monitoring system and methodologies to enhance the sustainability and resiliency of our infrastructure.

CONFERENCES / EVENTS

Oct 15, 2025
Rentschler Field
East Hartford, CT

AI in Engineering Summit, hosted by the Connecticut Transportation Institute

This summit will bring together researchers, industry professionals, and students to explore the transformative role of artificial intelligence in engineering practice. The event will feature presentations and hands-on workshops focused on Agentic and Generative AI, offering participants an opportunity to engage with emerging technologies. The summit aims to foster collaboration, innovation, and knowledge exchange as AI continues to redefine the engineering landscape.

May 12 - 14, 2026
Hilton, Mystic, CT

Reception: May 12th
Banquet: May 14th, at the Mystic Marine Life Aquarium

2nd International Conference on Iron-Sulfide Reactions in Concrete

Over the past three decades, extensive deterioration has been reported in numerous concrete structures, notably in Canada, the USA and Ireland, due to deleterious oxidation reactions in sulfide-bearing aggregates and subsequent internal sulfate attack. This conference will focus on discussing, evolve diverse ideas and try to address these issues to better concrete buildings. It is vital to identify additional crucial issues and help understand why they occur.

May 18 - 21, 2026
University of Connecticut, Stamford Campus, CT

2026 Mixed Integer Programming Workshop

Now in its twenty-third edition, the workshop will feature a single track of invited speakers highlighting new advances in theoretical, computational, and applied aspects of mixed integer programming and discrete optimization. The event will also include a poster session and best poster competition for student finalists, along with the 2026 Land-Doig MIP Competition on GPU-Accelerated Primal Heuristics for MIP.

CONGRATULATIONS TO OUR GRADUATES

CIVIL ENGINEERING – BACHELORS OF SCIENCE

Timothy Ayers
Angel Baba-Rivera
Matthew Barber
Bret Batohie
John Begazo
Jason Benard
Gavin Berger
Jacob Brown
Amelia Colombo
John Cook
Davis Cota
Ethan Crumrine
Brian Cruz
Tyler Curtiss
Austin St. Cyr
Kristen Daddi
Charles Depinho
Ellie Desantos
Elizabeth Doyle
Mauricio Duarte
Michael Dubon
Benjamin Flower
Alexander Foster
Alyssa Frechette
Richard Ganser
Matthew Golka
Katherine Gonzalez
Julia Goode
Ricardo Guadalupe
Logan Helming
Jennifer Hincapie
Caroline Insinna
Ryan Johns
Carson Kehmna
Mujo Kurtovic
Lam Le
Luis Lopes
Kyle Miranda
Ahmad Mohammed
Gabriel Mompean
Everett Nair
Joshua Okoli
Aidan Parsons
Jinal Patel
Ethan Peck
Amina Redzovic
Romy Reichenberger
Gabriella Ross
John Santangelo
Priscilla Sawyer
Ethan Shapiro
Manaaf Shreiteh
Benjamin Smith
Shaun Supranowicz
Wiktor Szwajger
Jacqueline Torlai
Payton Turnquist
Jose Valencia-Contreras
Jennifer Vazquez
Rocco Veneruso
Owen Yeung
Ahmed Tarig Zeinalabdin
Jiahe Zou

MASTERS OF SCIENCE

Binit Gautam
Syed Islam
Rupesh Shrestha
Wei Yang

PH.D.

Mathew Bizer
Manmohan Joshi
Saki Rezwana
Francesco Rouhana
Leana Santos

ENVIRONMENTAL ENGINEERING – BACHELORS OF SCIENCE

Julia Braithwaite
Nicholas Candow
Ethan Esposito
Katrina Frazer
Adisa Gjonbalaj
Alyssa Gouveia
Quinn Havard
Julia Horlitz
Lily Johnson
Xinhao Li
Kaitlyn Lombardi
Elise Mcallister
Kateryna Pekar
James Reid
Shawn Carter Shay
Grace Shvodian
Lucy Temple
Jeffrey Valentine
Cody Voorhies
Suki Zheng

MASTERS OF SCIENCE

Naomi Rose Adler
Dominic Richard Anziano
Ogochukwu Deborah Chibuko Okeke
Salem Smith
Tasnim Zaman

PH.D.

Hayley S. Clos
Nafis Fuad
Kang He
Mariam Khanam
Ummul Khaira
Sharmin Akter
Iram Sifat
Tasnim Zaman

“The faculty’s consistent support and mentorship during this time shaped my professional and personal development, leaving me well prepared to take the next step in my career as an assistant research professor. Their diverse expertise also helped me build meaningful connections, both within and beyond engineering, that I’m confident will continue to support and inform my work in the years ahead.”

Michael Vaccaro Jr., Ph.D.
Civil Engineering, 2025

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COLLEGE OF ENGINEERING

SCHOOL OF CIVIL AND
ENVIRONMENTAL ENGINEERING