

# Building the Future of Safety Science

Recognizing the successes and contributions  
of 2024 UL Research Institutes and UL Standards  
& Engagement interns and fellows





# Introduction

The Office of Research Experiences & Education engages undergraduate, graduate, postgraduate, and early career professionals to encourage persistence in STEM. Internships and fellowships allow students to discover and explore different career paths, network, and gain confidence in the workplace. OREE strives to help students gain access to those internships and creates awareness of STEM careers they may never have encountered in their coursework.

At UL Research Institutes and UL Standards & Engagement, interns have a major impact every year and leave behind a legacy in their departments and across both organizations. Persistence in STEM is supported by OREE at the graduate and doctoral levels through our participation and support with the GEM Consortium.

GEM aims to increase recruitment and retention of underrepresented

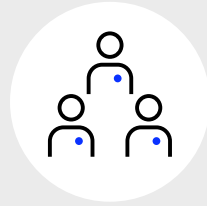
students, including African Americans, American Indians, and Hispanic Americans, in masters- and doctoral-level science and engineering programs. ULRI became a GEM Employer Member in 2022, hosting paid summer interns finishing their graduate programs.

OREE developed and piloted the Intern Engagement Initiative in 2023 to support and engage interns and early career professionals across ULRI and ULSE through professional development, mentorship, and connection building. Renamed the Student Engagement Program, this program seeks to increase connection between the interns and fellows, and the larger ULRI-ULSE organizations as well as to support relationship building, networking, and confidence in the workplace.





# Student Engagement Program: By the Numbers



**14**

Interns and fellows who participated in the 2024 program



**2**

GEM Fellows in 2024



**6**

Drexel University trained mentors certified in culturally responsive mentoring



**2023**

The year OREE piloted the program





# Once-in-a-Lifetime Experience: Intern Finds Success, Confidence with FSRI

Being able to make a difference through design work was Ava Casaus' biggest win from her 10-week internship with UL Research Institutes' Fire Safety Research Institute.

A graphic design intern with FSRI's digital media production team, Casaus helped with projects and the recent rebrand of the institute. She designed presentations, advertisements, graphics for training courses, and even a design featured in a peer-reviewed journal.

"It's exciting to have my work out in the world, where everything I've designed before has only been seen by my professors," Casaus said. "I'm able to make a difference with my work by communicating FSRI's cause and mission. All the rounds of feedback and editing are all worth it, because the mission is what really matters."

Casaus said that being able to create design projects that communicate important topics, and are seen and utilized by different audiences has boosted her confidence in her work.

"It's been a great experience interning at FSRI, and I'm so lucky to have been a part of a supportive team who pushes me to do my


best," she said. "Being able to have work that's published out in the world is setting me up for postgrad and the future."

Casaus also participated in the Student Engagement Program developed by the Office of Research Experiences & Education, an experience she said made her feel more connected to the organization as a whole and gave her a stronger understanding of how ULRI's institutes and offices worked together.

"The Student Engagement Program was a once-in-a-lifetime experience," she said. "Being able to meet and make connections with people in all different fields is going to have an impact when I'm in the workforce."

Casaus is a senior at Elon University, where she is pursuing a degree in strategic communications and communication design. After completing her summer internship, Casaus has been working part time for OREE as a communications consultant and graphic designer.

## Ava Casaus

A portrait of Ava Casaus, a young woman with long, wavy brown hair, smiling and looking slightly to the right. She is wearing a black turtleneck top and large gold hoop earrings. The background is a soft, out-of-focus grey.

“The Student Engagement Program was a once-in-a-lifetime experience. Being able to meet and make connections with people in all different fields is going to have an impact when I'm in the workforce.”





# Jay Damani



“I got to learn a lot, increase my skills across the board, and meet lots of new people with different experiences.”

## Intern Leads Vital Automation, Efficiency Efforts at MDRI

Jay Damani was an IT intern for the Materials Discovery Research Institute at UL Research Institutes, where he took on a huge project to improve the day-to-day work for researchers and staff at the new Skokie, Illinois, laboratory.

During his 10-week internship, Damani built a dashboard that researchers use to view any information on the machines in the labs, track who is using which machine, what time a machine will be available to use, alert staff when dangerous chemicals are in use, and keep accurate project tracking. Taking all of the manual work off of the researcher, the tool automatically populates with the information lab staff needs, and makes it accessible to them at any time.

Damani felt a sense of pride about the impact of his work.

“It feels good that I was beneficial to MDRI in a nonresearch related way, but in a way that I was providing a solution to them that will help their research.”

Damani, who moved to the United States to complete his master’s degree in computer

science, was excited to join a relatively new institute to help build processes and systems from the ground up.

“I had the opportunity to work on-site in a great office with good people, and learn more about the organization,” he said. “I got to learn a lot, increase my skills across the board, and meet lots of new people with different experiences.”

He also took part in the Student Engagement Program, which helped him understand how MDRI connected to the other institutes and offices at UL Research Institutes and allowed him to see how technology wove through other fields of research.

“Participating in the Student Engagement Program allowed me to get to know different areas, meet data scientists and researchers, and gather information that allowed me to think of new ideas for my work at my institute.”

Damani is continuing to work with ULRI until he graduates in 2025, focusing on python scripting, creating dashboards on PowerBI, and other projects that assist the Research Innovation and Technology Center.



# Battery Research Drew GEM Fellow to ULRI

Michael Henderson is not the same student and researcher that he was before he joined the Electrochemical Safety Research Institute for a 10-week fellowship. With renewed confidence and a major research project under his belt, he's ready to embark on the next steps of his professional journey.

Henderson joined ESRI at UL Research Institutes as part of the National Consortium for Graduate Degrees for Minorities in Engineering and Science (GEM), a nonprofit organization that offers fellowships to students pursuing graduate degrees in those fields. When he was choosing where to complete his fellowship, ULRI stood out because of the battery research being done by the research institutes.

Henderson's work with ESRI focused largely on flow batteries, which are rechargeable batteries where an electrolyte flows through one or more electrochemical cells from one or more tanks. His work with ESRI creating a flow battery for testing has energized and motivated him to start his master's in civil engineering at University of California, Berkeley.

"Flow batteries are an up-and-coming technology in renewable energy storage, and I'm excited to start looking at incorporating that in projects in graduate school," Henderson said. "I have already found a professor who focuses on batteries in civil engineering that I'll get to hopefully work with on future projects."

The Student Engagement Program helped Henderson find his confidence and voice, he said. When he started his fellowship, he was nervous to share his ideas and thoughts as a rising graduate student. After speaking with his mentor at ULRI, he discovered just how valuable his ideas were and that it was many researchers' first time doing certain projects, too. That shift in perspective allowed him to blossom throughout the remainder of his 10-week fellowship.

"Everyone felt like a family, and was so welcoming, kind, and encouraging," he said. "Being a part of the Student Engagement Program made my time at ULRI very enriching and beneficial. It was great getting to meet different scientists and others who have all taken different paths that led them to ULRI."

## Michael Henderson



“Being a part of the Student Engagement Program made my time at ULRI very enriching and beneficial. It was great getting to meet different scientists and others who have all taken different paths that led them to ULRI.”





# Enrique Hernandez



“ I like knowing that the work I’m doing is for a bigger purpose.”

## Purpose-Driven Work: Intern Brings New Perspective to Finance Teams

A passion for the renewable energy field and the desire to work for a company with a strong, lived mission drew Enrique Hernandez to UL Research Institutes.

During summer 2024, Hernandez served as a finance intern working with several different departments over his 10-week internship. From accounting to risk management to treasury, Hernandez got to experience the full spectrum of finance-related careers and opportunities throughout his time at ULRI.

Rotating through the finance department allowed Hernandez to connect with different teams and learn more about himself. His biggest project was a presentation to the finance team of a comprehensive risk control matrix, which included several new insights that he felt would benefit the organization. Hernandez said he discovered a clear view of what he wants to do with his life through his internship.

“I discovered what I want to really pursue, and what I have interest in,” he said. “I came in with certain interests and left with others. It’s very important for me as a finance major to understand what I like, because I can really go in any direction.”

Hernandez was originally interested in an internship with ULRI after hearing about the recent Workday launch, knowing that the organization would need someone with his background to help get the new system off the ground. He also was drawn to UL Research Institutes’ mission and putting his skills to work in a meaningful way.

“I knew it was going to be a hands-on experience,” he said. “And, I want to work for a company with a strong mission that aligns with my values. I like knowing that the work I’m doing is for a bigger purpose.”



# Accessibility and Equity for All: OREE Intern Codes for Good

TreShai Hubbard served as a digital media intern with the Office of Research Experiences & Education at UL Research Institutes. In her role, she made recommendations and provided feedback on websites, print collateral, educational materials, and presentations to ensure accessibility for people with disabilities, including visual and hearing impairments, who may use screen readers or other assistive technologies.

“I wanted to ensure the office’s resources were as equitable and accessible as possible, and usable for all people,” Hubbard said. “Having this experience this summer [2024] really solidified that this is what I want to do after college.”

Hubbard discovered the internship through a national conference hosted by the National Society of Black Engineers. She was drawn in by how eager the organization and OREE were about improving accessibility.

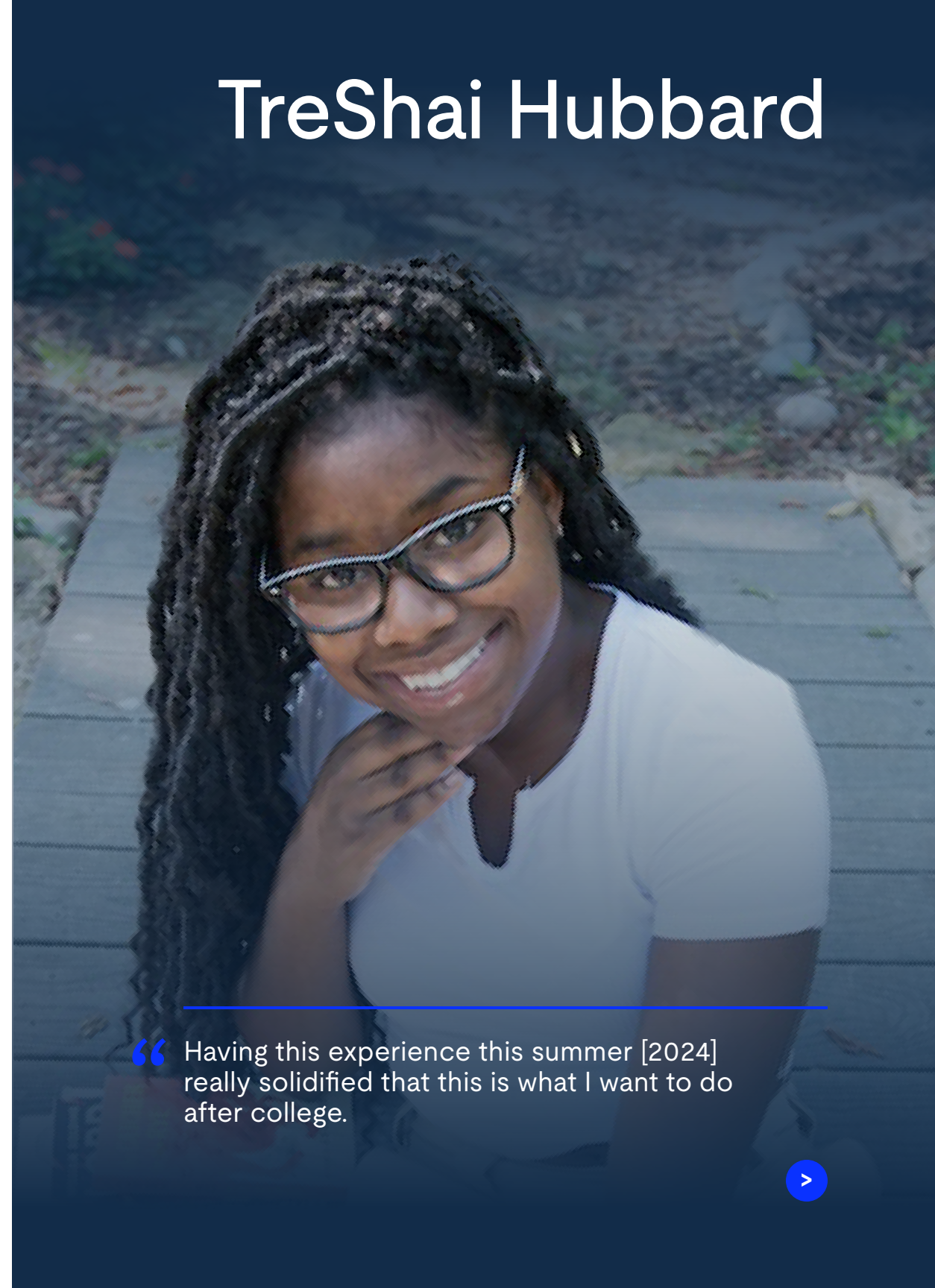
“Some companies are openly against improving accessibility because of the cost, amount of time it takes, and the amount of effort you have to put behind it,” she said. “UL Research Institutes and OREE found it to be super important, which is what made me want to work here.”

Hubbard started her higher education journey as a computer science major at Michigan State University. As she began working through her courses, she was surprised that accessibility wasn’t a requirement for a computer science major, it was an optional elective.

“That was the reason I switched majors from computer science to experience architecture — I thought it was crazy for everyone not to learn how to make their interfaces or coding accessible,” she said.

Hubbard will graduate in May 2026, and hopes to continue her career in accessibility and increase her skills in accessible coding.

## TreShai Hubbard



“ Having this experience this summer [2024] really solidified that this is what I want to do after college.





# Arielle Jackson

## Intern Pioneers First-of-its-Kind Battery Research with MDRI

Arielle Jackson is one the first people in the country to work on a one-of-a-kind printer at UL Research Institutes' Materials Discovery Research Institute.

This summer, Jackson's internship with MDRI led her to work with a nanoprinter that prints metal samples for characterizing catalytic activity. Her work with the printer, currently the only one in the U.S., focused on trying to identify a catalyst made from a nonprecious metal. Why? Precious metals are expensive, hard to recycle, and not sustainable.

"I was not an electrochemist or materials chemist before I got here, but I've been able to have a great time learning about chemistry that I had no experience with before I came to MDRI," Jackson said. "The work makes me feel good — like I'm doing something that will actually help the planet."

Jackson also started and kept a detailed log of her work with the printer to support those who go on to use it next. Her schooling and previous internship experiences mainly focused on renewable energy and biofuels, meshed nicely with her work with hydrogen fuel cells and

batteries at MDRI. Her experience working in MDRI's newly opened laboratory solidified her desire to continue working in research as she pursues the next step in her career.

"The work I did with batteries here was so multifaceted. There was so much to learn about, and it was all so relevant," she said. "The battery and renewable energy field is growing, and I want to be a part of it."

Jackson said it was invaluable being around other researchers and learning about the different pathways into their careers and experiences in graduate school. She participated in the Student Engagement Program, where she got to network and build friendships with interns from across the country.

"It's the beginning of our professional careers, and these are connections I'll have for a while," she said. "This experience is invaluable to my future career, and I'm so glad I did it."

Jackson will graduate from Purdue University with a double major in chemical engineering and biochemistry in spring 2025.

“The work makes me feel good — like I’m doing something that will actually help the planet.”





# The Man Behind the Machines: IT Intern Keeps Research Moving

Jack Lowrie, an IT intern with UL Research Institutes, started his internship working in the Evanston office at the tech café, helping solve problems and troubleshooting tech support tickets. He said that role allowed him to experience the work being done across the organization.

“UL Research Institutes is an organization that impacts everyone around the world, even if they don’t know it,” Lowrie said. “Being able to see and be a part of the research going on is really cool.”

Supporting employees on-site and remotely, Lowrie solved tech issues, managed assets, helped troubleshoot hardware and software, applied patches, set up equipment, and more. He said he sought out this role because he wanted to work somewhere he could make a difference. His work in IT allowed him to improve inefficiencies, create more effective processes that benefited employees, and automate workflows.

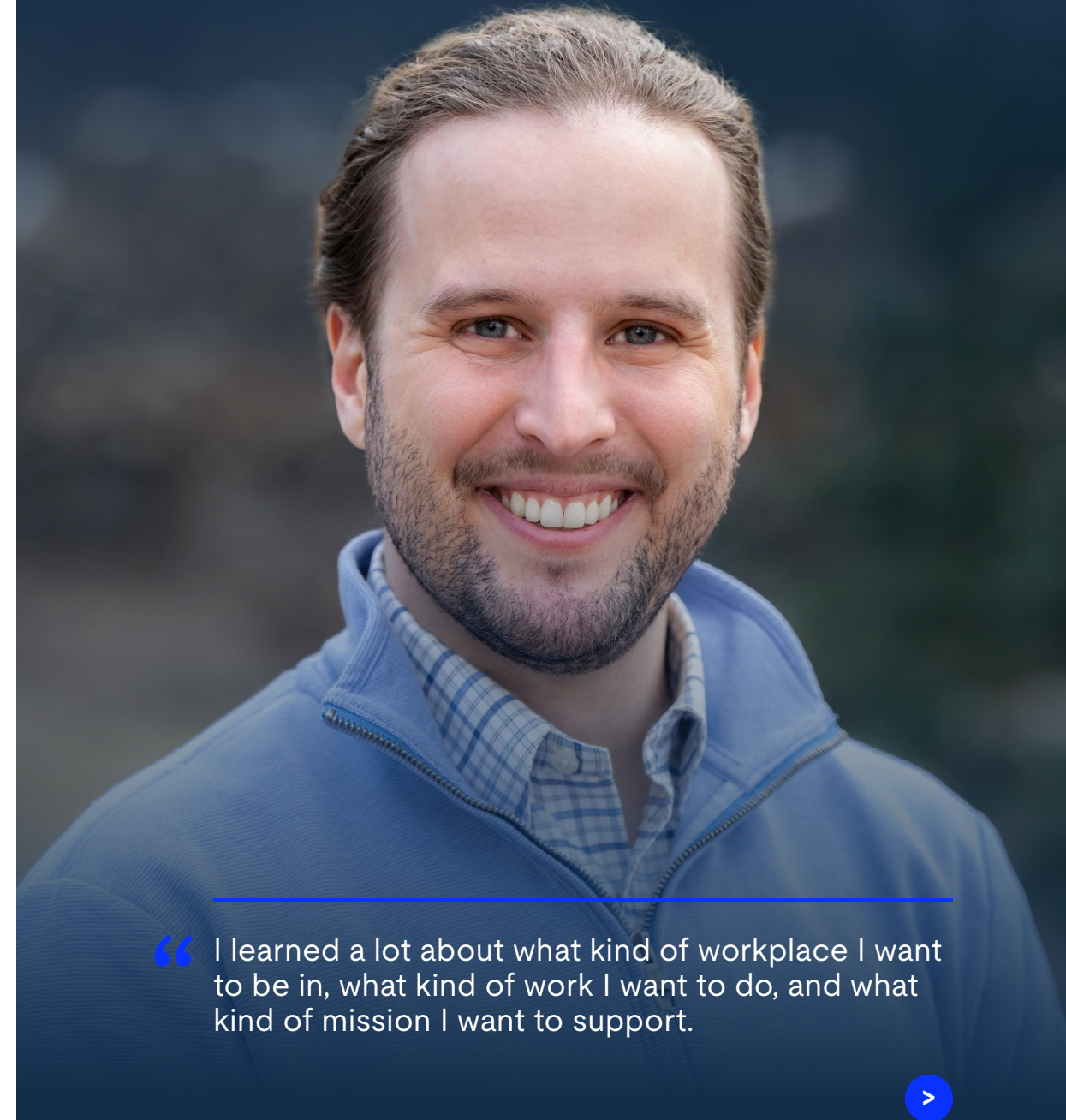
“I’m not doing direct research, but a lot of the important research being done at ULRI happens on a machine. And if that machine doesn’t work, the work doesn’t get done.”

Lowrie said one of the things he’s most grateful for in his internship was the real-world experience he gained that he wouldn’t have gotten through classroom work alone. And, a great understanding of how he can apply his degree in the corporate world after graduation.

“My internship was the best possible opportunity to get a birds-eye view of the work at UL Research Institutes as a whole,” he said. “I learned a lot about what kind of workplace I want to be in, what kind of work I want to do, and what kind of mission I want to support.”

Lowrie is a first-year master’s student in computer science at Purdue University.

## Jack Lowrie



“ I learned a lot about what kind of workplace I want to be in, what kind of work I want to do, and what kind of mission I want to support.





# Britney Mack

## GEM Fellow Contributes to the Future of Water Harvesting at MDRI

The Materials Discovery Research Institute at UL Research Institutes has enlisted the best and brightest to help uncover the answers behind finding new water sources. One of those researchers is a GEM Fellow from the University of Alabama, Britney Mack.

Mack, a second-year doctoral student, worked as a research assistant with MDRI focusing her attention on the institute's atmospheric water harvesting project.

"There's not a lot of research in the water harvesting space," Mack said. "The research we did here this summer [2024] will create a foundation for accelerated research for the next 25 years."

Mack chose ULRI for her GEM Fellowship because she wanted to work on research that was not federally funded and was aimed at uplifting women and minorities. With a background in materials science research and working toward her Ph.D. in chemical engineering, the role was a perfect fit.

During her fellowship, Mack found the lab experience extremely valuable, something she said not a lot of doctoral students

receive during internships. She also had the opportunity to help build and organize MDRI's newly opened laboratory from the ground up.

"I was able to help MDRI build on and finish their lab, assist with safety mitigation plans, tagged equipment, and was given autonomy in organizing the lab," she said. "I now have valuable experience with equipment that I would have never had access to. This 10-week internship has given me a year's worth of experience."

Mack participated in the Student Engagement Program during her 10 weeks at MDRI. She said the professional development workshops were helpful because they relieved some of the pressure she was putting on herself.

"I'm still in the learning part of my life, and it was helpful to hear that so many people are going through the same thing," she said. "I'm here to learn, so I was able to then ground myself and understand I don't have to know everything yet."

“ The research we did here this summer [2024] will create a foundation for accelerated research for the next 25 years.





# Mission-Driven FSRI Intern Leads Public Safety Communications

“This information is lifesaving.”

Lauren Moxley, a 2024 summer communications intern with the Fire Safety Research Institute at UL Research Institutes, had a big part to play in public safety collateral and messaging targeted toward fire safety professionals and the public.

Working with FSRI’s amplification team, Moxley helped with technical writing for research reports, established a new e-newsletter structure, and worked on the FSRI rebrand. She enjoyed building her technical writing skills by synthesizing and simplifying complex research topics for different audiences who may not have the time or in-depth understanding to read the full reports.

“Our mission impacts everything we do in communications,” Moxley said. “It’s so important, because this information is lifesaving. Lithium-ion battery safety and wildland-urban interface are all topics that the public and those in fire safety need to

understand. By synthesizing the information, we can reach fire safety engineers or members of the public who a report may not necessarily reach.”

Moxley participated in the Student Engagement Program during her 10-week internship, where she was able to connect FSRI’s mission with the missions and work of UL Research Institutes’ other institutes and offices.

“It’s great to meet others with diverse perspectives and understand the great work interns across our organizations are doing,” she said. “Understanding UL Research Institutes and our mission is important, and it was motivating to work alongside other interns who are passionate about working toward our mission as well.”

Moxley will graduate from the University of Maryland, Baltimore County in May 2025 with a degree in media and communications, and a minor in political science.

## Lauren Moxley



“ Our mission impacts everything we do in communications. It’s so important, because this information is lifesaving.





# Godrein Owusu-Ayeyi

## Standards Save Lives: ULSE Intern Uses Safety Science for the Greater Good

Godrein Owusu-Ayeyi was a data science and engineering intern with UL Standards & Engagement over summer 2024. In his role, he assessed the effectiveness of standards by evaluating associated incidents with those standards.

One of the standards Owusu-Ayeyi evaluated was for coffee makers, where glass cracking caused cuts or burns to the user. He then came up with ideas for mitigating those incidents and recommended them to his team, where they'll discuss whether the technical committee needs to reevaluate the standard and make changes. Over the course of his 10-week internship, Owusu-Ayeyi evaluated six standards in total.

"I got into engineering because I wanted to use technology to help others, and that's what I've been able to do in this internship," he said. "This experience has opened my eyes to the world of safety science and how we can make products safe with people."

He said that working with the ULSE experts and learning from the engineers on his team made him reconsider his previous decision to not pursue graduate school. Now, it's back on the table.

"Even my work as an intern is using technology to help people," he said. "I'm actually helping people — I'm not saving a life, but I am doing something that is assessed and used to potentially save lives and keep people safe."

As the only 2024 summer intern with ULSE, Owusu-Ayeyi said he benefited from participating in the Student Engagement Program, where he got to connect with others across organizations and take part in professional development opportunities.

Owusu-Ayeyi will graduate from the University of Illinois in spring 2026 with his degree in electrical engineering.

“I got into engineering because I wanted to use technology to help others, and that's what I've been able to do in this internship.”





# ULRI's Youngest Summer Intern Has Major Impact on Water Harvesting Innovation

The youngest summer 2024 intern with UL Research Institutes at age 19, Santosh Ramesh had a major impact not only on the work that the Materials Discovery Research Institute is doing, but on the future of sustainability.

"I'm contributing to a predictor model project that could save lives, which is daunting because there are real-world stakes to what I'm doing," he said.

Ramesh built a database from scratch that manually characterized and organized vital data in the work that MDRI is doing on water harvesting. He did all the manual work of searching and creating his own database of water absorption data that MDRI researchers now use for their projects.

"With this database, the team can do so much more with the information they want to test for," Ramesh said. "I created an algorithm where researchers can take a material they're looking at testing and create a prediction on how the data will look in an experiment when tested.

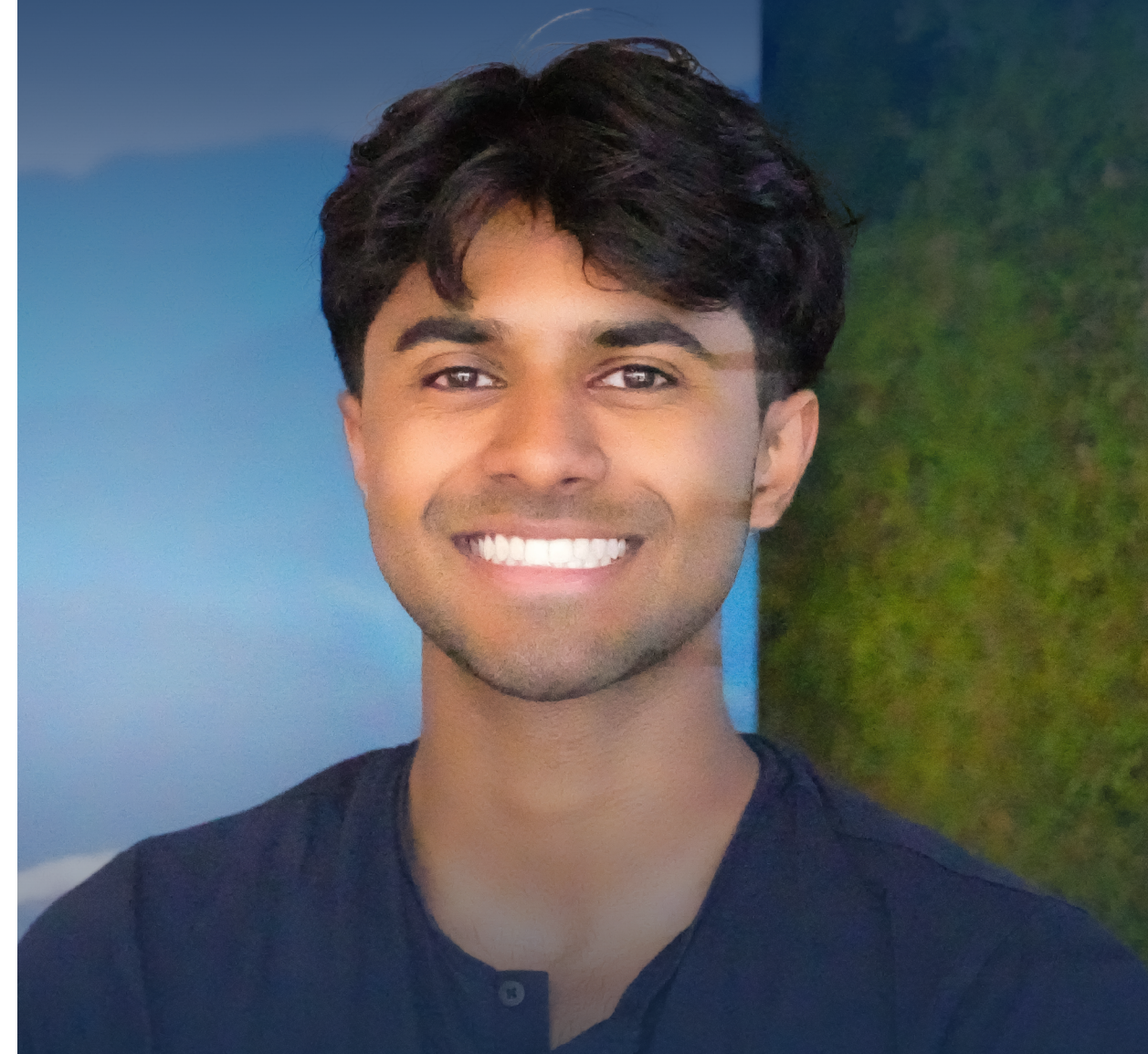
But first, the data had to be sufficient to show them whether a material can be tested or not."

Ramesh's groundbreaking work allows researchers at MDRI to investigate new materials for water harvesting, where they're creating technology to harvest water from the atmosphere. The research team wants to see how specific structures test in certain conditions and look for specific data in their experiments.

Ramesh is a junior at Purdue University majoring in data science. Even though he didn't come from a chemistry background, Ramesh was curious to see what he could bring to the table when it came to the research MDRI was doing.

"What I was able to do and accomplish here, you just don't see that kind of opportunity often as an intern," he said. "I wasn't expecting to be a part of something so important to the world."

## Santosh Ramesh



“What I was able to do and accomplish here, you just don't see that kind of opportunity often as an intern.





# Emma Sliwinski

## ESRI Intern Looks to the Future of Sustainable Battery Recycling

Emma Sliwinski can roll with the research.

Sliwinski was a summer 2024 research intern with the Electrochemical Safety Research Institute at UL Research Institutes, where she conducted battery recycling research over the course of her 10-week internship.

In her role, she conducted experiments to find new ways to recycle battery materials in a way that's economically and environmentally helpful. She collaborated with her research team focusing on low-impact ways to recycle waste with the least amount of energy as part of a bigger effort to make lithium-ion battery recycling a sustainable and viable process.

"A big lesson I learned during my internship is how to roll with the research," Sliwinski said. "No experiment goes as expected, but I learned to take what knowledge I can from it, adapt, and collaborate with my team to move forward."

Sliwinski encountered ULRI at a career fair at Northwestern University and was excited to work in a new area that aligned with her interests as a chemical engineering major. Following her internship, Sliwinski is excited to tie her work with ESRI into future research during her senior year at Northwestern.

"Electrification and batteries are an emerging field of research, and I'll be able to tie my learnings into any field I pursue, even if I'm not specifically doing battery research," she said. "I was given the ability to work independently on my project and direct my internship at ESRI. I gained a lot from being able to direct my own future, with the support of the other researchers and my supervisors."

“Electrification and batteries are an emerging field of research, and I'll be able to tie my learnings into any field I pursue.”





# Research Fellow Evaluates Climate Change Education — Initiating Positive Change

Eliana Stromberg is a graduate research fellow with the Office of Research Experiences & Education at UL Research Institutes. With extensive experience working with the Environment and Natural Resources Division of the U.S. Department of Justice, Stromberg has found her place at OREE working with each member of the team to research the effectiveness of programs, systems, and educational content on Xplorlabs.

Stromberg conducts literature reviews for OREE, supports the research team with studies, performs qualitative data coding, and is currently designing a research study on the mental health effects of climate change on young people. She said her fellowship has allowed her to see how the data collected is being put toward positive change.

“During my master’s program, I realized my passion for climate education and the social aspect of climate change,” Stromberg said. “I love the science behind climate, but I love the social aspect even more.”

Stromberg met OREE’s Senior Director Kelly Keena, Ph.D., in 2017 on a climate change education expedition in South America and attributes Keena with being one of the most

influential people in her life. Keena reached out in 2023 and contacted Stromberg about conducting research with the office that could impact future generations and the field of climate change research and education.

“Research calls for a lot of intense focus on miniscule things, and that’s what I’ve been able to offer the office,” she said. “I can pack the research nicely into a quick and readable medium and help lead generative conversations on where the office should focus their time.”

Stromberg’s work also allows her to support curriculum development for OREE’s no-cost education platform, Xplorlabs — guiding what’s effective in the current learning pathways for students and supporting new curriculum with her findings.

“OREE does a great job reflecting on data collected and using it to make sure voices are heard, and that the work we do is meaningful,” she said. “It’s fascinating and impressive.”

Stromberg will receive her Master of Science degree in climate change, policy, media, and society from Dublin City University in March 2025.

## Eliana Stromberg



“During my master’s program, I realized my passion for climate education and the social aspect of climate change.”





# Jamari Williams

## Data Analytics Intern Provides Valuable Fire Safety Insight to FSRI

In just 10 weeks, marketing analytics intern Jamari Williams made a huge impact on research scientists and marketing professionals across the Fire Safety Research Institute.

Together with a data scientist on his team, Williams was tasked with building a comprehensive dashboard for FSRI that housed information from their media monitoring, search queries, and media mentions focused on fire safety topics, including firefighter falls. With the insights gained from the dashboard, Williams was able to provide both the amplification and research teams valuable analytics to inform their work.

“It was really cool to grow along with the dashboard as I built it and gain insights while it was working and growing,” Williams said. “I’ve developed a new love for visualizations and creating dashboards. It’s great being able to develop something that so many people will be able to use for different purposes, and to help both research and marketing teams.”

Williams said his internship drew him into FSRI’s fire safety mission.

“Being around the data every day, I now am really tuned in to the importance of fire safety,” he said. “I’m super aware of fire exits and the impact of the ‘Close Before You Doze’ campaign.”

Williams hopes to pursue a career in data analytics following his graduation with a bachelor’s in computer information systems from Towson University in fall 2024.

“Being around the data every day, I now am really tuned in to the importance of fire safety.”





Learn more at [\*\*UL.org/OREE\*\*](https://www.ul.org/OREE)