2025

Research Institutes | Research Experiences & Education

Building the Future of Safety Science

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

Introduction

The Institute for 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. IREE 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 IREE at the graduate and doctoral levels through our participation and support with the National GEM Consortium.

The Institute for Research Experiences & Education leads ULRI and ULSE's employer membership with the GEM Consortium and supports GEM Fellows working with teams across ULRI-ULSE. ULRI became a GEM Employer Member in 2021, hosting paid summer interns finishing their graduate programs starting in 2022.

IREE 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.

GEM Employer Member since 2021

Student Engagement Program: By the Numbers

28
interns and fellows participated in 2025

7
GEM Fellows

4
Drexel University trained **mentors** certified in culturally responsive mentoring

“This internship was the perfect glimpse into the professional world. It makes me feel more confident going into other positions because I feel like I was given a fully comprehensive look into marketing and public relations. I wasn’t just an intern — I had an important role in many projects, and that’s what’s unique about working here.”

Ashlyn Bonner

Marketing and Public Education Intern

Fire Safety Research Institute

“During this internship, I’ve gained so many different opportunities and experiences that I wouldn’t have gotten anywhere else. People are so invested in their jobs here and the culture, and I felt like it was a connection at first sight when I interviewed.”

Lauren Ashley

Human Resources Intern

ULRI-ULSE Shared Services

“I’ve been lucky to be a part of both tangible and intangible work during my internship, and I get to help a lot of people in different ways. I enjoy having work that feels both relevant and important.”

Luke Dsouza

Partnerships Intern

UL Standards & Engagement

“There’s a lot of companies out there, but very few can actually make people’s lives better and safer, which is why I chose this internship. I love working with AI, but there are so many threats with that tool — I feel good knowing there are people at ULSE and ULRI who are working to make sure that AI is safer for people to use.”

Chukwudalu Dumebi-Kachikwu

Data Science and Engineering Intern

UL Standards & Engagement

“Through the Student Engagement Program, I was able to choose a mentor with a similar background as me. It was really nice hearing his career path, the advice he had, and I got to hear about the projects and work he was doing. I’ll be able to use his advice in my future career.”

Avkash Chandra

Research Library Intern

Library & Researcher Information Services

Clean Energy and AI: GEM Fellow Explores **New Nontoxic Materials** at MDRI

Amorette Chiossi had never been to Chicago before her GEM Fellowship with UL Research Institutes' Materials Discovery Research Institute in summer 2025. She joined what she describes as "one of the most supportive and collectively encouraging group of people she's ever worked with" in her role at MDRI.

Chiossi performed materials synthesis in parallel to developing a machine learning model. The data she produced is being used to build a model that she hopes can guide future streamlined experimentation, making it more efficient and easier to hone in on ideal synthesis conditions that can be used for many future projects.

"The work we're doing has positive implications for clean energy, including absorption for pollutants or battery synthesis, and a lot of it has to do with addressing environmental concerns," she said. "The idea is to use less materials and move forward on developing solutions that have been time consuming to experiment on."

What drew Chiossi to the GEM Fellowship at ULRI was how parallel the research was to her work and her background. Her current doctorate work is focused on finding nontoxic or biologically sourced materials that can be recycled and used for energy sources, and finding new methods to create new sources of energy that don't pollute the Earth.

"When I was selected, I was so amazed that I found an institute focused on clean energy and materials discovery," she said. "I've been able to pad my lab skills and work between the data research group, advancing my interdisciplinary skills as a scientist."

The materials Chiossi worked with are a useful class of novel materials, not widely produced, so the majority of her work is still theoretical.

"I've always been very protective of the environment and raw materials," she said. "Working with MDRI has been amazing. Like the name states, I feel like I'm doing both discovery and research, and have people supporting the different aspects of where I want to explore."

> *When I was selected as a GEM Fellow with the Materials Discovery Research Institute, I was amazed that I found an institute doing extremely novel scientific research focused on clean energy and protecting the environment."*

Amorette Chiossi

GEM Fellow

Materials Discovery Research Institute

GEM Fellow Advances **Solid-State Battery Research** at UL Research Institutes' Electrochemical Safety Research Institute

Zina Deriche, a Ph.D. candidate in chemical engineering at Rice University and GEM Fellow with the Electrochemical Safety Research Institute, is working to enhance the performance of solid-state batteries.

Solid-state batteries are considered a safer, more efficient alternative to lithium-ion batteries because they use a solid electrolyte rather than a liquid electrolyte found in LIBs. The solid electrolyte is expected to be less flammable, and at lower risk for thermal runaway, which is commonly found to occur with lithium-ion batteries when they are exposed to off-nominal conditions of electrical, mechanical, or thermal in nature.

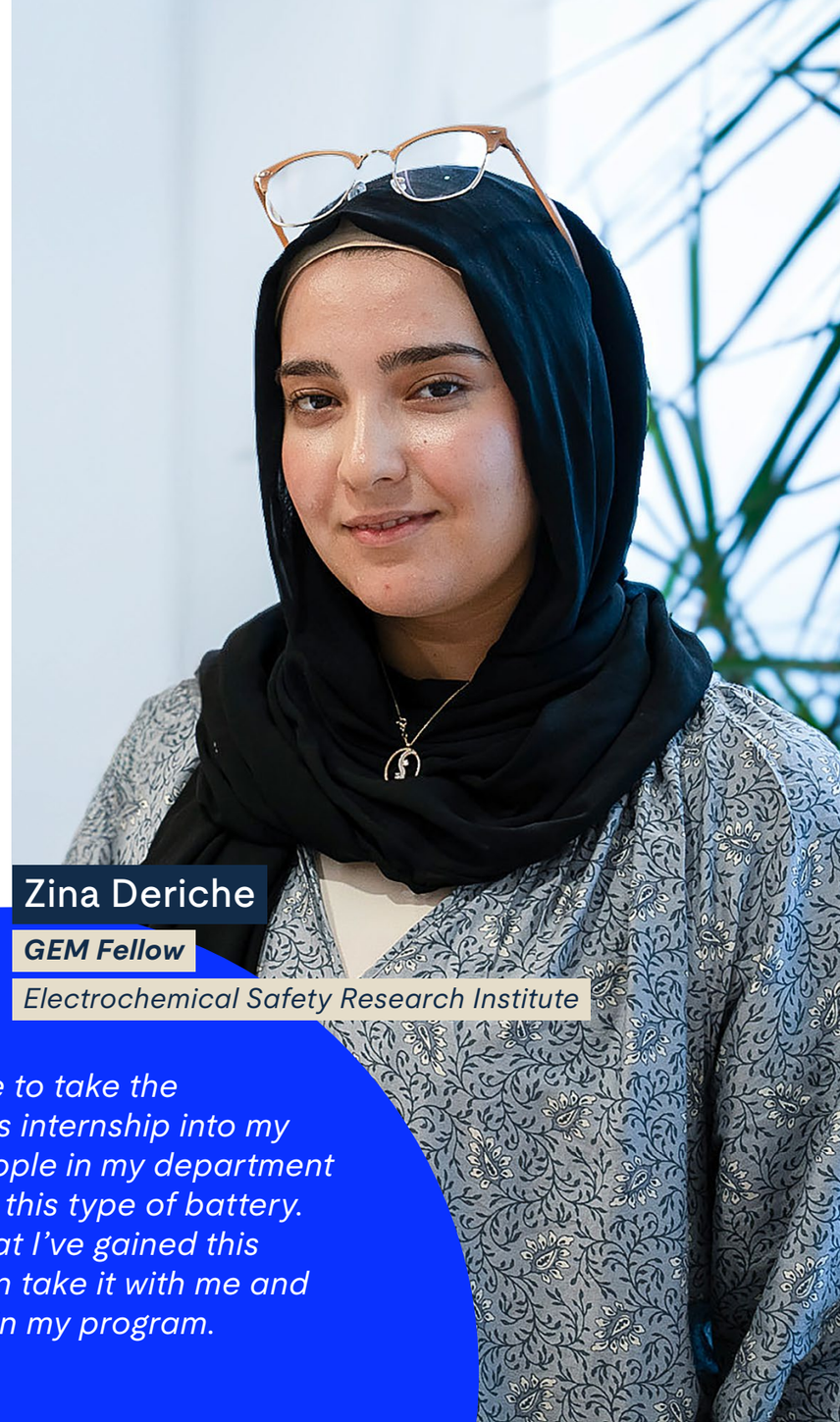
"By replacing traditional liquid-electrolyte lithium-ion batteries with solid-state lithium-ion batteries, we could theoretically achieve longer-lasting performance and significantly reduce the risk of thermal runaway," Deriche said, noting that solid-state batteries offer substantial advantages over conventional lithium-ion batteries, particularly in terms of thermal stability, nonflammability, and the potential for higher energy density.

Deriche noted the only issue is that solid-state batteries can't perform as well as lithium-ion batteries, which is where her fellowship research comes in — an experience she says will shape both her academic and professional future.

"I'm going to be able to take the knowledge from this internship into my Ph.D. Not many people in my department have experience in this type of new type of lithium-ion battery. I'm proud to say that I've gained this experience and can take it with me and even assist others in my program."

Deriche also participated in the Student Engagement Program during her fellowship at UL Research Institutes, where she benefited from workshops and professional development support.

"I loved learning about how working in research in the industry versus academia is driven by collaboration and innovation," she said. "It's great watching the institutes at ULRI work together and help each other."



Zina Deriche

GEM Fellow

Electrochemical Safety Research Institute

> *I'm going to be able to take the knowledge from this internship into my Ph.D. Not many people in my department have experience in this type of battery. I'm proud to say that I've gained this experience and can take it with me and even assist others in my program.*

“This internship has given me so many skills I can use in the future … skills in research, communication, how to work in a fully remote environment, and how to collaborate on a team. I can take all of these skills into any future career.”

Megan Fahrney

Youth Advisory Council Intern

Institute for Research Experiences & Education

“I never saw myself working in a corporate environment, but I was surprised at how much I liked working at ULRI headquarters in Evanston. Working in a corporate setting allowed me to see how much positive change I could make in making organizations more sustainable.”

Lena Hicks

Sustainability Intern

UL Research Institutes

“My internship was really focused on me — my learning, development, and growth. I was lucky to have a team that took the time to teach me everything I needed to know, understood roles, and answered all my questions. They were entirely focused on me and my learning.”

Alex Farkas

Finance Intern

ULRI-ULSE Shared Services

“The Student Engagement Program was a welcoming experience that allowed me to grow my confidence and get comfortable talking to other professionals. It granted me the space to feel welcomed while I explored different areas of the organization.”

Shuroq Hussein

IT Intern

ULRI-ULSE Shared Services

“I knew about safety science before I joined ULRI, but through my internship I’ve been able to learn so much more and gain appreciation for the importance of safety science and safety science education.”

TreShai Hubbard

Digital Asset Intern

Institute for Research Experiences & Education

Roulince Dukuly

GEM Fellow

Materials Discovery Research Institute

During my time with MDRI, I felt guided by leadership and my supervisor in accomplishing my goals, felt warmly surrounded by kind colleagues in the lab, and I feel like I've become a part of the MDRI family.

Fueling the Future: GEM Fellow Follows Vision for **Renewable Energy** at MDRI

Roulince Dukuly is passionate about making meaningful contributions to advancing renewable energy – something he's confident UL Research Institutes' Materials Discovery Research Institute will achieve in the future.

Dukuly is a GEM Fellow who worked with MDRI in summer 2025 while completing his Ph.D. in chemical engineering at Columbia University.

His work focuses on renewable energy — specifically researching the possibilities of hydrogen fuel use in modes of transportation.

"If we can design large-scale applications of these materials, we could potentially see the use of these hydrogen-based clean energy vehicles, and decarbonize the transportation sector," he said.

Part of his work focuses on the development and application of metal organic frameworks as efficient storage materials that could effectively store hydrogen so that it can be utilized in hydrogen-powered vehicles.

"We want to help drive the transition of our society from the fossil fuel-based energy economy to a renewable energy-based economy," Dukuly said. "Matching with MDRI during the GEM Fellowship matching process was perfect — MDRI's focus on cost-effective materials for renewable energy matched up well with my graduate work on using seawater electrolysis for generating clean hydrogen fuel that can replace harmful fossil fuels like oil and coal while also reducing the use of scarce freshwater resources in water electrolysis."

In his GEM Fellowship, Dukuly was able to gain greater insight into working in an industry career versus academia — a choice many Ph.D. students face as they near graduation. He said that his fellowship experience was critical in that decision-making process, and he now feels like he has enough context to understand how his education and training may prepare him to be successful in any environment. That was supplemented by the way his MDRI colleagues welcomed him into the professional research world.

"During my time with MDRI, I felt guided by leadership and my supervisor in accomplishing my goals, felt warmly surrounded by kind colleagues in the lab, and I feel like I've become a part of the MDRI family," he said.

GEM Fellow Shapes **Future Research Experiences** for Undergraduate Students at UL Research Institutes

Groundwork for a potential Research Experiences for Undergraduates program at ULRI has been laid by GEM Fellow **Makayla Headley**, who worked with the Institute for Research Experiences & Education in summer 2025.

Headley, a fourth-year Ph.D. student studying engineering and science education at Clemson University, said that the work she performed at IREE went hand-in-hand with her education background and research interests.

“Social science research is human subject research — our work focuses on lived experiences and making sure we interpret it properly,” she said. “At IREE, we’re trying to build a program that stretches across institutes by conducting interviews, transcribing and coding them, pulling out the themes, and getting a good scope of where the institutes are at to see what they need to do to collaborate, host, and launch a research experiences for undergraduates program.”

Headley said she can envision strong impact for her work, and that REUs hosted across institutes at ULRI would be beneficial for undergraduate students seeking opportunities.

“At ULRI, students can get a broad experience to figure out what they want, and help them with their career development,” she said. “Research work at a company like ULRI is different than at a university — you have more opportunities to rotate departments, and the work is different. It can help move students toward career readiness.”

What Headley does next in her career will be inspired by her passion for making the student experience better for those who come after her.

“A lot of what I do is because of my experience as an undergraduate student,” she said. “A lot of students in engineering or education don’t know where they might work after they graduate, and I’d like to help them see the opportunities and pathways available to them.”

My education experience goes hand-in-hand with the work I’m doing here to try and develop a research experiences program for undergraduate students across institutes. Students who participate in this at ULRI can get a broad experience to figure out what they want and help them with their career development.

Makayla Headley

GEM Fellow

Institute for Research Experiences & Education

Novel Battery Researcher Returns for Second Year as GEM Fellow with ESRI

1st Place

Research Presentation

National GEM Consortium Annual Board Meeting & Conference

Michael Henderson

GEM Fellow

Electrochemical Safety Research Institute

Michael Henderson's journey with UL Research Institutes' Electrochemical Safety Research Institute began in the lab, but he said it's the lessons beyond his work with batteries that shaped his growth as a researcher and communicator.

In the summer of 2025, Henderson, who is currently studying civil engineering at the University of California, Berkeley, served as a returning graduate research fellow with ESRI. In his first GEM Fellowship with ESRI in 2024, he conducted a research project on flow batteries — building and testing flow batteries at ESRI's labs, but it wasn't until the last day of his fellowship that he was able to get them working. At the end of his second summer fellowship, he was able to truly finalize his project by writing his manuscript and submitting it for publication.

"Last summer during my time with ESRI, I felt like that was the most I've ever grown academically or outside of the lab as a person," he said. "This summer, I've been learning how to properly communicate my research — I had a strong understanding of designing and conducting experiments, but not how to communicate it."

Henderson also participated in ULRI's Student Engagement Program, which he said influenced his growth in ways he didn't expect. He benefited from having a mentor throughout his 10 weeks at ULRI which helped him feel connected and involved as an intern working remotely.

Henderson said he's proud his research contributes to the global push toward electrification and the need for sustainable energy solutions.

"With all of the issues surrounding lithium-ion battery usage, this could open up opportunities for new storage systems like these types of [flow] batteries that could take their place," he said. "They've proven to be safer and stronger, but there aren't extensive bodies of work on how safe they are in all conditions. This work fills that gap and can influence standards for operating and manufacturing these systems."

> *The Student Engagement Program influences growth in ways I didn't expect. It gave me important skills I needed, and helped me with communication in and outside of science.*

“This internship has allowed me to see a career trajectory for myself that I wouldn’t have known about if not for this opportunity. The experience has made me want to do research when I go back to school to continue my master’s in computer science this fall, which I wouldn’t have considered if I hadn’t done this internship.”

Jack Lowrie

Research Intern

Digital Safety Research Institute

“This is my first internship and real-world experience, so it’s allowed me to see what working in corporate video is like, and how the creative process works from start to end. That’s not something I can learn in school, so it’s been great to be a part of that and absorb as much as I can.”

Sydney O’Clery

Multimedia Design Intern

Fire Safety Research Institute

“I really loved the Student Engagement Program, I felt like ULRI created a warm and welcoming environment for interns. It was great to learn something besides my research and focus on my personal growth and career development.”

Haein Kong

Research Intern

Digital Safety Research Institute

“I’m extremely grateful to be here, I love toxicology and didn’t know that I could make a career out of it. Finding this opportunity to have a summer internship in toxicology as an undergraduate student is so meaningful.”

Norah Nguyen

Toxicology Intern

Chemical Insights Research Institute

“It’s been great spreading awareness of safety science through my work with UL Standards & Engagement. I have been able to use my design skills to spread the word about something that’s important and valuable for people to know.”

Madison Luongo

Graphic Design Intern

UL Standards & Engagement

Everett-Alan Hood

GEM Fellow

UL Standards & Engagement

ULSE GEM Fellow Investigates **Ethical, Psychological Impacts of AI**

Have you ever considered the psychological impacts of AI on everyday users?

GEM Fellow **Everett-Alan Hood** has, and it's what he focused on during his 10 weeks with UL Standards & Engagement's Data Science & Engineering team in summer 2025.

Hood graduated with his bachelor's in computer science from North Carolina Agricultural and Technical State University before his fellowship and will begin pursuing his master's at the University of Washington in computer science and software engineering in fall 2025.

Being the only intern in the office came with a lot of anxiety and imposter syndrome. [Through the Student Engagement Program,] it was great to be able to talk to my mentor and the other interns, engage with my peers, and relieve the pressure I was feeling. It made my work feel a lot smoother.

At ULSE, Hood focused on social or ethical incidents related to AI hazards, specifically emerging hazards in the field. In contrast to his academic focus on computer science, his personal passion is in creative fields as well as psychology. Combining these interests led him to study how AI can be used unethically in some cases.

"The way I've seen AI impacting different groups in negative ways made me want to help standardize and regulate AI to make sure that it's being used ethically in the future," he said.

Hood's project focused on emerging hazards like overreliance in trusting or using AI systems and exploitation where AI could be used to socially manipulate individuals or groups.

Of course, he's not alone in his work. Hood has networked with other professionals and learned from experienced colleagues in the field.

Hood also said his participation in the Student Engagement Program eased his transition into both work and adjusting to a professional environment, noting that having a mentor and being able to speak openly about his fellowship experience with other interns relieved the pressure of the corporate world.

"One of my biggest takeaways from this experience is how to collaborate effectively within a team," he said. "In tech, it's easy to go solo, but projects like this take a lot of heads to come together and figure out what direction to go in."

One-of-a-Kind **Water Vapor Research** Performed by FSRI GEM Fellow

3rd Place

Research Presentation

National GEM Consortium
Annual Board Meeting
& Conference

Zahin Ritee

GEM Fellow

Fire Safety Research Institute

Zahin Ritee, a GEM Fellow with UL Research Institutes' Fire Safety Research Institute, recently graduated with a bachelor's in physics and mechanical engineering at Adelphi University and Columbia University, and is currently pursuing her master's degree in mechanical engineering at Columbia University.

Ritee contributed to upgrading the gasification apparatus to include laser-based water vapor measurement diagnostics at the Fire Safety Research Institute. Just a few weeks into her fellowship, she conducted literature reviews and experiments in the upgraded apparatus.

Ritee said her educational background led her to the GEM Fellowship with FSRI, and the research she was doing in her lab work in college lined up perfectly with the opportunity.

"I felt like I had a ton of book knowledge from my coursework, but now I'm actually able to apply it when I'm designing and running real experiments and working with real data from these experiments," she reflected. "It's combined a lot of things I've learned theoretically so far, while I've also been able to gain professional skills through my participation in the Student Engagement Program."

Ritee said that through ULRI's Student Engagement Program, she's been able to talk with the other interns and learn about their research and projects, which has allowed her to feel more connected to the organization.

"Being the only research intern in my office, it was great getting to know the other research interns across the country," she said. "I've also found the professional development workshops and career advice through the program to be very helpful."

Ritee said she may consider returning to FSRI after she completes her master's because of how much she's enjoyed both the work and her colleagues.

"In this fellowship, I'm in a position where I can propose my own ideas, and make my own decisions," she said. "I didn't expect that type of experience as an intern. It makes me feel valuable to the research and to the organization."

> *In this fellowship, I'm in a position where I can propose my own ideas, and make my own decisions. It makes me feel valuable to the research and to the organization.*

“My intern experience has been absolutely amazing. Everyone is so inclusive and welcoming to the interns, and I can tell that ULRI-ULSE is a great company to work for. … Because of this internship, I have developed a stronger interest in cybersecurity now that I have some experience and understanding of the field.”

Kate Sheeran

Governance Risk and Compliance Intern

ULRI-ULSE Shared Services

“I want to use what I’ve learned to help as many people as I can. Knowing that what I’m doing is making a difference is huge, and that’s all I’ve ever wanted to do. What I do with standards can directly impact the life of someone else.”

Godrein Owusu-Ayeyi

Data Science Engineering Intern

UL Standards & Engagement

“This internship has reinforced my passion for contributing to sustainability and global energy innovation. I’ve developed an understanding of how data supports decision-making, and how collaboration can turn ideas into action.”

Timilehin Oluwole

Research Operations Intern

UL Research Institutes

“I feel like I’m making really important, impactful work with the graphic design work I’m doing with the battery safety campaign. I’m creating materials that are important not just for firefighters, but everyone.”

Kaylin Ryan

Graphic Design Intern

Fire Safety Research Institute

“I have all the support from my colleagues at ESRI, and the work-life balance is great. ULRI is definitely a place I would devote myself to.”

Chen Wang

Research Intern

Electrochemical Safety Research Institute

“When I joined FSRI, it felt like I was walking into a family. Everyone was so nice and understanding, and it was clear they wanted to challenge me and help me learn. I was given so much opportunity to grow, and felt like my internship was centered around helping me grow.”

Lauryn Price

Public Education and Marketing Intern

Fire Safety Research Institute

2025

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Learn more at UL.org/IREE