



XPLORLABS[®]

The Science and Practice of Safety STEM

Kelly Keena, PhD | Sr. Director &
Bethany King Wilkes, PhD | Program Manager
Office of Research Experiences & Education (OREE)

STEM Innovation Forum | October 20, 2023

Discoveries in Safety™

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WHAT IS

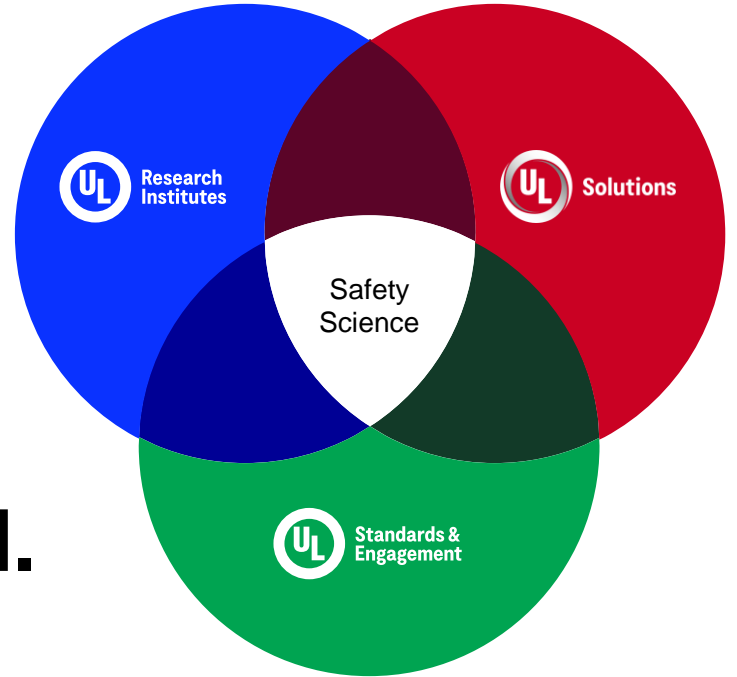
Safety?



ANNOUNCING OUR NEW BRANDS

Three organizations.
One shared mission.

Working for a safer world.



Our Three Grand Challenge Commitments

**Resilience for
a sustainable
future**

**Individual
and societal
health in the
21st century**

**Safety at the
human-digital
interface**

Our Institutes

Chemical Insights
Research Institute

Digital Safety
Research Institute

Electrochemical
Safety Research
Institute

Fire Safety
Research Institute

Materials Discovery
Research Institute



Research
Institutes

Office of the Chief
Research Officer

Our Offices

Office of
Partnerships

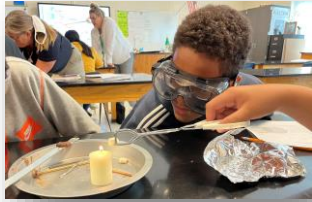
Office of Research
Experiences and
Education

Library & Researcher
Information Services



OREE | Building the future of safety science

Secondary Classrooms + Communities



Xplorlabs

Teacher Fellowships Partnerships

Post-secondary Academies



Standards Academy

Early STEM Academy Partnerships

Pathways to Safety Science



Cristo Rey High School Internships

REU

Graduate Fellowships

Engagement + Persistence



Mentorship

Professional Learning

Professional Growth

Research + Evaluation



Xplorlabs evaluation study

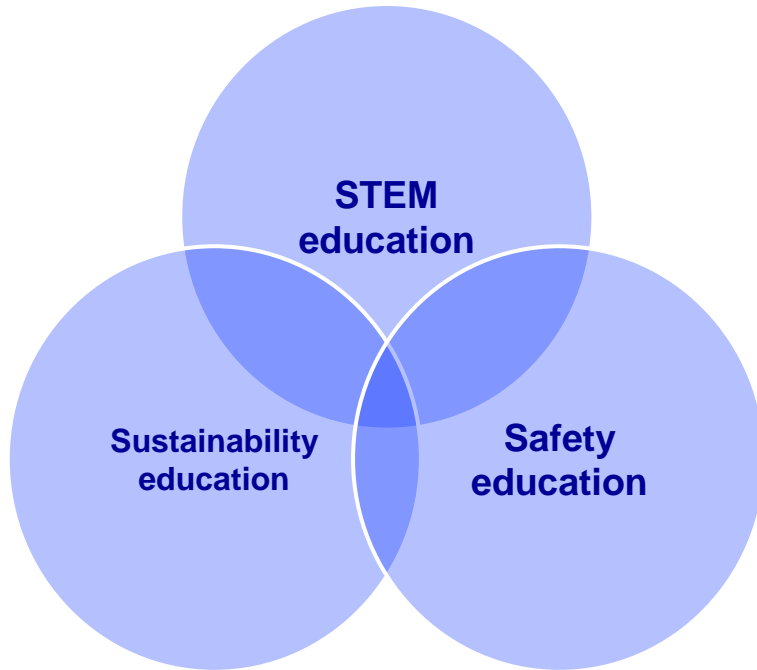
Early career focus group study

Equity + Access

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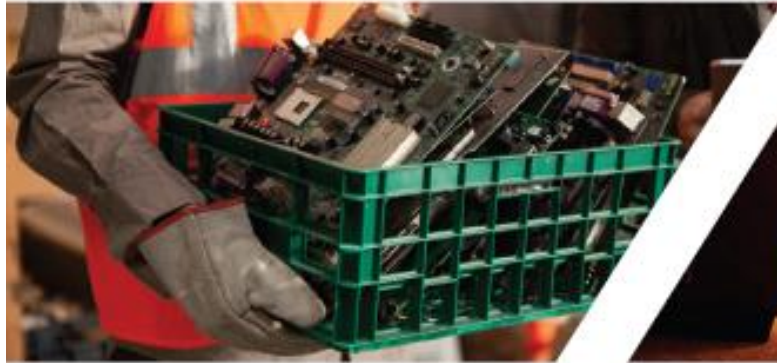


What is Safety STEM?



- drives **curiosity** to discover the why's of safety and sustainability using science
- provides **awareness and knowledge**
- opportunity to **practice** science and engineering skills
- rooted in real-world **phenomena**
- **empowers** action and engagement.

There's been a problem, you're here to solve it.



**The Science of
Extraction to E-Waste:**
Trade-Offs & the Supply Chain



**The Science of
Thermal Runaway:**
Engineering Solutions



**The Science of
Fire Forensics:**
Claims, Evidence, & Reasoning

The science of
Fire
Forensics
Claims, Evidence,
and Reasoning



Let's explore the science of _____

Fire Forensics: Claims, Evidence and Reasoning



Launch Pathway

View resources in this pathway



Quick Links

- [Cahier de école des enquêteurs](#)
- [Guide de l'enseignant Criminologique du feu](#)
- [Teacher Overview: The Science of Fire Forensics](#)
- [Investigators Academy Notebook](#)

Relevant NGSS Standards

- [MS-PS1: Matter and its Interactions](#)
- [MS-PS3: Energy](#)

With Support From

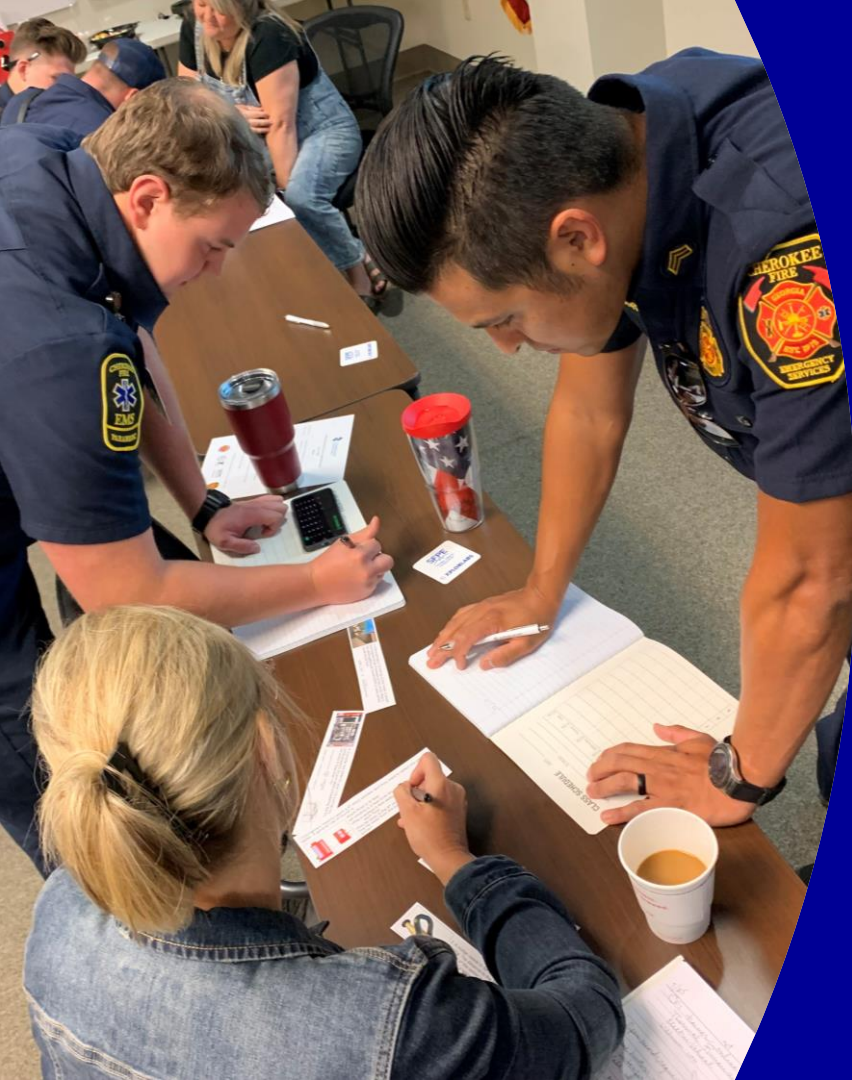
NIJ National Institute of Justice
STRENGTHEN SCIENCE. ADVANCE JUSTICE.

Fire Safety Research Institute

<p>VIDEO</p> <p>Pyrolysis</p>	<p>DOCUMENT</p> <p>Teacher Overview: The Science of Fire Forensics</p>	<p>VIDEO</p> <p>The Challenge: Make a Claim About the Origin of the Fire</p>	<p>VIDEO</p> <p>The Fire Triangle</p>
<p>INVESTIGATION</p> <p>The Fire Triangle: Student Guide</p>	<p>DOCUMENT</p> <p>The Fire Triangle: Teacher Guide</p>	<p>VIDEO</p> <p>Unlock the Answer: The Origin of the Fire</p>	<p>VIDEO</p> <p>Ventilation Limited Fire</p>



Research
Institutes



Community Education Partnerships

Teacher Fellowships



Post-secondary Academies

Standards Matter



Need: Standards-literate Workforce

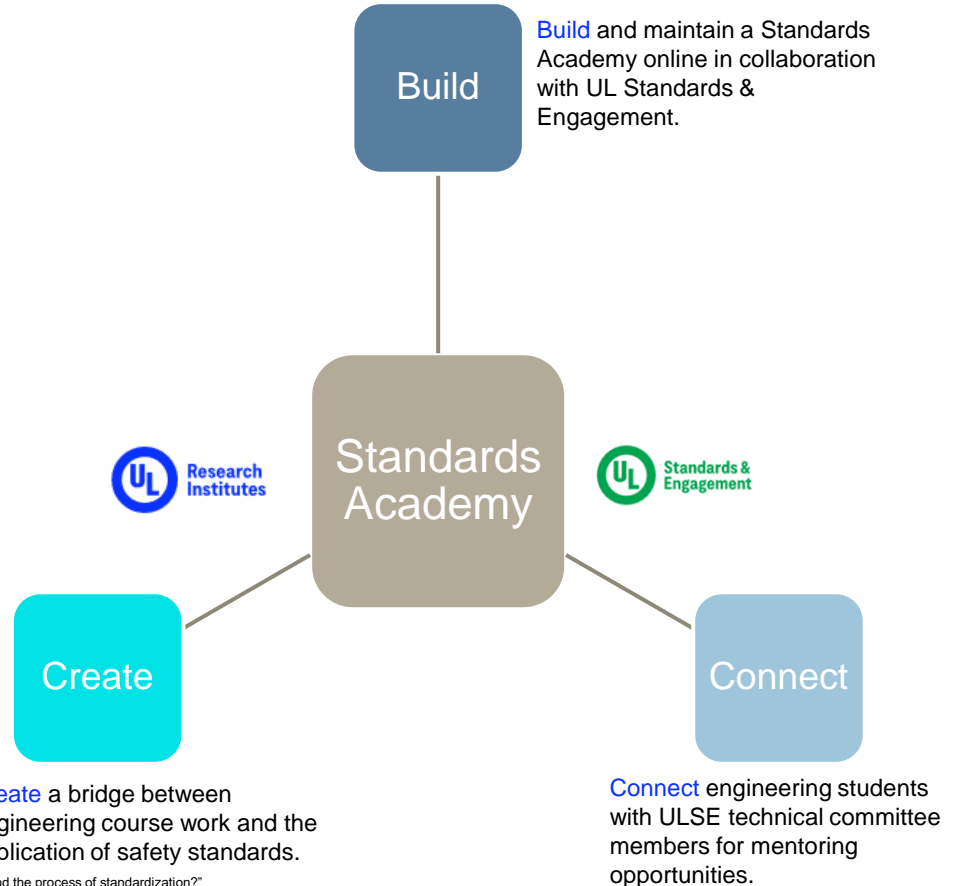
58% employers expect students to have knowledge of standards at time of hire.¹

15% standards professionals were exposed to safety standards while still in college.²

ABET criteria require students to apply standards to a culminating design project.³



Response: Standards Academy



¹Harding, B. & McPherson, P. (2010). "What do employers want in terms of employee knowledge of technical standards and the process of standardization?"

²UL Standards & Engagement Next Generation Stakeholder Survey (2022)

³Accreditation Board of Engineering and Technology Criteria

Standards Academy Approach



If you would like to share your experience with standards from the perspective of a professional, educator, or student, contact bethany.kingwilkes@ul.org.



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