

I AM Safety Tech UEF Grant

Short Report: Improving and Advancing Manufacturing Safety Using Emerging Technology

Funded by the United Engineering Foundation (UEF)

Executive Summary

The *Improving and Advancing Manufacturing Safety Using Emerging Technology* (I AM Safety Tech) initiative represents a year-long collaborative effort funded by the **United Engineering Foundation (UEF)** to strengthen safety, quality, and workforce readiness across the manufacturing ecosystem.

Led by the **American Institute of Chemical Engineers (AIChE)** with participation from multiple engineering societies—including **ASME, ASCE, AWS, ASHRAE, SNAME, SPE, and BWISE**—the program united professionals across chemical, mechanical, civil, electrical, materials, and maritime disciplines to address one shared concern: how to build safer, smarter, and more resilient manufacturing systems using both human expertise and emerging technologies

The initiative achieved its goals through:

1. **Workshops and Roundtables** engaging cross-disciplinary experts and skilled technicians.
2. **A national Engineering Safety Survey**, now updated monthly on the **UEF I AM Safety Tech webpage**, identifying immediate needs and best practices.
3. **Three training videos** summarizing key findings and practical applications for safety improvement.
4. **An open-access procedure report** documenting methodologies for reject-and-correct workflows, human-factor integration, and AI-assisted inspection.

1. Background and Motivation

The I AM Safety Tech initiative originated in response to recurring systemic failures observed across industrial sectors. Recent high-profile incidents—ranging from structural collapses to manufacturing defects in aerospace and maritime systems—highlighted the same root cause: fragmented communication between design, process, and operations

In 2025, AIChE, acting on behalf of a coalition of professional societies, proposed the I AM Safety Tech project to the United Engineering Foundation. The objective was clear: to identify and disseminate best practices in manufacturing safety through interdisciplinary collaboration, emerging digital tools, and modern workforce training.

Accomplishments – Workshops and Roundtables

A national workshop held in Dallas convened representatives from seven engineering societies, students, operators, and industry leaders. The group defined core safety gaps, assessed technology use cases, and produced shared recommendations for communication, design integration, and workforce development.

Accomplishments – Engineering Safety Survey

A nationwide survey was launched as a recurring instrument, capturing quantitative data on safety barriers, training needs, and modernization priorities. Findings are updated monthly on the UEF IAM Safety Tech webpage.

Accomplishments – Training Videos

Three educational videos were produced to summarize project findings. These videos outline the role of emerging tools, reinforce human-factor accountability, and provide a structured path for continuous learning for students, technicians, and practicing engineers.

Reporting and Knowledge Dissemination

A publicly accessible final report documents workshop findings, survey trends, and structured safety-improvement methods including Detect–Quarantine–Triage–Correct–Verify cycles, best-practice communication models, and human-factor integration strategies.

Impact

The program established a multi-society collaboration model that aligns technical knowledge, field experience, and data-driven methods into a practical framework for safer manufacturing systems. It created reusable training materials, a sustained national survey resource, and a roadmap for future programs seeking to modernize engineering safety.

Acknowledgment

This project and all its deliverables were **made possible through funding from the United Engineering Foundation (UEF)**. The leadership team extends its gratitude to all participating societies, workshop attendees, student contributors, and industry representatives whose insight shaped the content of this report and the accompanying training modules.

UEF IAM Safety Tech Webpage: [🌐 IAM Safety Tech](#)

Prepared by the IAM Safety Tech Steering Committee under the United Engineering Foundation grant UEF25-039.

