

## Executive Summary and Recommendations from the 2022 ACS Presidential Safety Summit

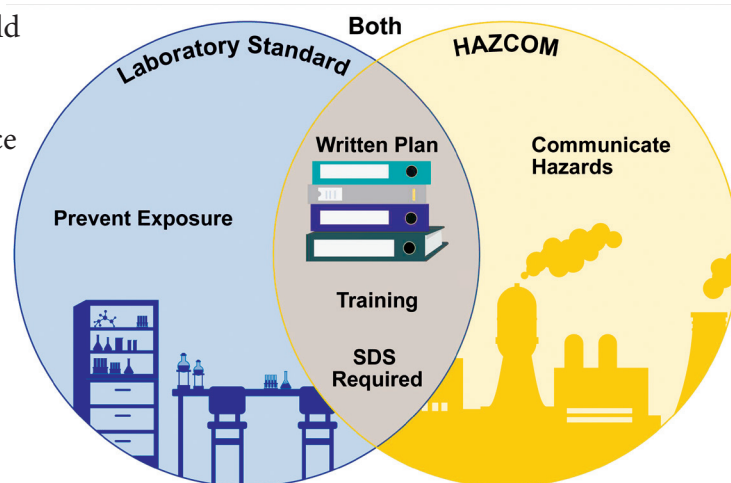
The fourth ACS Presidential Safety Summit was held on October 13–15, 2022, at ACS headquarters in Washington, DC. Co-organized by the ACS Committee on Chemical Safety (CCS) and the ACS Office of Safety Programs, the summit brought together 39 participants from industry, academia, national laboratories, graduate students and postdoctoral scholars, and ACS staff members. Three guiding questions focused discussions on articulating and communicating industry needs and expectations related to laboratory safety for new Ph.D. hires in research and development (R&D).

**Question 1: What laboratory safety competencies (knowledge, skills, and attitudes) do new Ph.D. hires need to reduce the time for onboarding in industrial R&D laboratories where chemicals are used?**

To prepare to address this question, summit participants reviewed survey responses from a select group of industrial safety professionals. The survey questions were designed to determine what safety expectations industrial employers have for their new Ph.D. hires. The framework of Recognize hazards, Assess risks, Minimize risks, Prepare for emergencies (the RAMP model) was used to organize the survey questions.

**The discussion of the survey results during the summit highlighted the specific safety knowledge, skills, and attitudes that were most desired in new Ph.D. hires. These included:**

- Awareness and appreciation of regulations from various federal agencies (OSHA, EPA, and FDA) affecting laboratories where chemicals are used.
- Ability to recognize hazards.
- Ability to locate and apply authoritative chemical safety information.



- Ability to implement the RAMP model by
  - ▶ Conducting risk assessments,
  - ▶ Applying the hierarchy of controls,
  - ▶ Selecting and using personal protective equipment (PPE),
  - ▶ Recognizing when a Management of Change procedure is needed,
  - ▶ Recognizing off-normal conditions,
  - ▶ Learning from near-misses and incidents, and
  - ▶ Applying ionizing and non-ionizing radiation safety practices.

**Human factors<sup>1</sup> were also identified as ways to reduce time for onboarding. These included:**

- Leadership skills that include prioritizing safety,
- Cultural acknowledgment in the context of safety,
- Safety mindset,
- Communication and listening skills, and
- Willingness to learn and adapt.

<sup>1</sup>As used here, “human factors” include those safety categories and items that can affect the performance of an individual, including risk perception, attitude, technical and non-technical skills, and competence.

