

American Chemical Society



## Safety in the Guidelines

**Julie Ellefson**

SOCED Task Force on *ACS Guidelines for  
Chemistry in Two-Year College Programs (2015)*  
251<sup>st</sup> ACS National Meeting, San Diego, CA  
March 13, 2016

**Safety in the 2015 two-year guidelines**

## Overview

- Major change regarding safety
- Fostering a culture of safety
- Integrating safety topics throughout the curriculum

Laboratory work is an essential component of chemistry and chemistry-based technology programs. The revised guidelines place an emphasis on the development of a culture of safety to help ensure a safe environment for faculty, staff and students and to promote safety education. This interactive presentation will highlight the changes in the guidelines regarding safety and provide a forum for discussing the integration of safety topics throughout the curriculum and how a culture of safety can be fostered.

## Overarching change

- Integration of safety language
  - Addresses culture of safety throughout campus and curriculum
  - Aligns with Committee on Chemical Safety ([www.acs.org/safety](http://www.acs.org/safety)) recommendations

One of the global changes was the incorporation of safety language throughout the Guidelines. This was done to support the development of a cohesive safety culture, which requires that safety be an integral part of all functions, not just relegated to one or two policies. The safety language used was adapted from documents developed by the Committee on Chemical Safety (CCS) and reviewed by CCS.

## Institutional environment

- Entire campus should contribute to a culture of safety. (2.5) **(NEW)**
- [Creating Safety Cultures in Academic Institutions](#)



## Infrastructure

- Safety resources compliant with county, state, and federal regulations must be provided. (4.5) **(MODIFIED)**

Entire campus should contribute to a culture of safety.

- A lot of this language comes from the 2012 publication, “Creating Safety Cultures in Academic Institutions,” by the ACS Committee on Chemical Safety (CCS). You can download it at [www.acs.org/safety](http://www.acs.org/safety) or email [safety@acs.org](mailto:safety@acs.org) for a hardcopy.
- In essence, organizations with the fewest injuries are ones in which there is a universal commitment to safety that goes beyond mere regulatory compliance. When leaders, faculty, and staff are all aligned on what constitutes safe practices and risk management, all are better prepared to prevent incidents and handle the unexpected.
- Not only do students learn better in a safe environment, they also learn that safety isn’t just something that happens in the lab.
- A culture of safety requires that all levels of leadership have appropriate involvement in the development and implementation of safety policies and programs.
- ACS has always recommended full compliance with county, state, and federal safety regulations, as well as best safety practices.
- Now the list of recommended resources is much more specific and features OSHA-mandated items. The list comes from CCS, so it is pretty comprehensive. However, you should check county, state, and federal requirements yourself, to be sure.

- It is also possible to request an EPA or OSHA inspection. These are typically free and non-committal—that is, you will not be penalized for any infractions found. But you will be aware of them. And the report could give you leverage in addressing them.

## Curriculum

- Safety topics should be integrated throughout the curriculum. (5.6)  
**(NEW)**



## Development of Student Skills

- Learning laboratory safety concepts ensures a safe learning environment and prepares students for safety-conscious workplace. (7.1) **(MODIFIED)**

- An overall culture of safety requires that safety be an integral part of the curriculum. Addressing safety topics in an isolated lesson or course can give the impression that they are not relevant outside of that section. Ideally, then, safety topics are introduced broadly in introductory courses and refined as the student progresses to more advanced courses. Topics that are appropriate to address in the first two years include:
  - Principles of safety, such as recognizing and identifying hazards, addressing risk, and safety ethics, etc.
  - Preparing for emergencies, such as evacuation actions, types of fire extinguishers, actions for various chemical spills, etc.
  - Recognizing/identifying hazards, such as language of safety (terms, signs, labels, symbols), safety data sheets (SDSs), current hazard recognition systems including as the Global Harmonization System (GHS), etc.
  - Assessing/evaluating risks of hazards, such as routes of exposure, evaluating risks of toxic hazards, etc.
  - Minimizing/preventing exposure to hazards, such as personal protective equipment, laboratory hoods and ventilation, handling chemical wastes, etc.

Section 7.1 has been modified with stronger language regarding the importance of lab safety. A list of key safety topics, paralleling that found in section 5.6, is also included.

- Image from Harper College Chemistry Department

## Resources

- [Resources](#) available through ACS Education in Two-Year Colleges website
  - [www.acs.org/2YColleges](http://www.acs.org/2YColleges) (click on “Chemical safety”)



For information on Chemical Hygiene Officer Certification go to <http://www.nrcc6.org/cho.html>

© American Chemical Society  
March 2016