

## Report on the 2020 ACS Safety Summit: Opportunities in Chemical Safety Communication

To optimize the social benefits of the chemical enterprise, the practice of chemistry must include best safety practices from concept through research, development, manufacture, use, and disposal of its products. Only such a holistic approach will control individual and public risks associated with resulting technologies to acceptable levels. For this reason, in 2016, the ACS Board of Directors adopted **safety** as one of the Society's core values. This action established the expectation that the Society and its members will be leaders in this area, particularly in regard to chemical safety concerns. Living this commitment requires a thoughtful and proactive strategy for the ACS to pursue with stakeholders. Such a strategy will support a safer and more sustainable chemical enterprise for the benefit of Earth and its people. In order to develop this strategy, the ACS has sponsored a series of "safety summits" to better understand how this vision can be achieved. This report documents the outcome of the latest of these summits, held in February of 2020.

### ACS Safety Summit History

ACS President Peter Dorhout sponsored the first ACS Safety Summit in 2018 to move the Society forward in translating its core value of safety into an action plan. Since then, annual Safety Summits have become an integral part of implementing the Society's core value of "*professionalism, safety, and ethics*." These summits gather a number of ACS stakeholders, including ACS governance, technical divisions and staff as well as external experts in addressing the topics for the year. The resulting summit reports recommend Society projects related to different aspects of chemical safety to the appropriate body, with ongoing leadership provided by the ACS Committee on Chemical Safety.

Year	Date	Theme
2018	2/2 – 2/4	Developing Strategic Safety Goals
2019	3/1 – 3/2	Chemical Safety Education
2020	2/21 – 2/22	Chemical Safety Communication

Three key themes have unified these summits:

1. The ACS Governance and Executive Leadership Teams enthusiastically support this work: four current, past and future ACS presidents as well as the ACS CEO participated in these discussions, which has emphasized the Society's commitment to the core value of safety.
2. Chemical safety practice is an ongoing responsibility for a partnership between Society governance, technical divisions and staff. All of these stakeholders bring specific skills and resources to this discussion. The goal of the summit work is to highlight connections among their safety-related work and plan new activities to position ACS as the leader in the laboratory safety space.
3. There are important strategic partnership opportunities available with other scientific organizations in addressing the core ACS value of **professionalism, safety and ethics**. Leveraging these connections will strengthen both the ACS and its partners as scientific leaders in the public's eye.

### 2020 Summit

The overarching goal of the 2020 ACS Safety Summit was to develop a proactive chemical safety communication strategy that communicates ACS guidance, programs and resources to solidify ACS's position as the authority for laboratory safety.

2020 Participants included both representatives from the ACS Groups and Partner Organizations:

#### ACS Groups

- Committee on Chemical Safety

- Committee on Professional Training
- Committee on Public Relations & Communications
- Committee on Corporation Associates
- Division of Chemical Health & Safety
- Graduate Education Advisory Board
- Undergraduate Programs Advisory Board
- ACS Chemical Health & Safety
- Chemical & Engineering News
- Scientific Advancement
- Global Journals Development
- External Affairs and Communication
- New Product Innovation

#### Partner Organizations

- U.S. Chemical Safety and Hazard Investigation Board
- Center for Engineering Ethics and Society
- National Academy of Engineering
- Blue Seat Studios Animation
- American Institute of Chemical Engineers
- Center for Chemical Process Safety
- National Institute for Occupational Safety and Health
- Pistoia Alliance
- BASF Corporation
- FMC Agricultural Solutions
- American Association of Chemistry Teachers

During the Summit, ACS staff members from the ACS External Affairs and Communication office provided background presentations on developing communication plans, social media best practices, and effective metrics. Other invited guests presented success stories from video outreach and safety strategies in the chemical industry. Participants identified several key topics that ACS could champion within its current areas of engagement, which provided a number of important insights related to safety communication:

- ACS, through its vibrant engagement with the chemical safety and education communities has created a number of valuable safety resources, but these have not effectively communicated
- Summit participants should work with their individual groups to effectively communicate and evaluate success of the ACS chemical safety resources related to their communication programs.
- A new partnership between ACS's safety groups and ACS External Affairs and Communication opens the door for future collaborations and assistance with strategic planning.
- The communication topics identified for further development will provide clarity to external stakeholders about the strengths of ACS's Safety Program activities and resources.
- The enhanced safety communication channels will help ACS help to better understand its community's needs and concerns related to chemical safety.

Further discussions and small group work provided additional strategies and recommendations, which are organized around the three Summit goals.

#### **Goal 1**

*Identify key topics that ACS should champion, using current chemical safety resources, in order to assure the most impact for ACS programs.*

ACS and partnering organizations have collaborated to develop many safety resources over the years. These can be found online at <https://www.acs.org/content/acs/en/chemical-safety/resources.html>. Categorizing this

list into four current areas of ACS engagement resulted in distinct topics which the summit participants recommend that ACS champion.

- Area 1: Safety education for specific audiences
  - Secondary school students
  - Undergraduate students
  - Pre-service science education students
  - Graduate students and Postdoctoral scholars
- Area 2: Safe practice of chemistry research
  - Supporting a culture of safety
  - Safety leadership skills development for chemists at all levels
  - ACS expectations for safety statements in research articles
  - Lab scale hazard assessment tools
- Area 3: Support for EH&S practitioners
  - Professional development training
  - Research into chemical health and safety topics
  - Development of professional learning communities
- Area 4: Safety for the general public and lawmakers
  - Best safety practices for public chemistry demonstrations
  - Public education about safety policy, codes, and regulations
  - Management of chemical hazards and disposal practices

## Goal 2

*Develop four communication plans to provide examples of how to articulate a project's intended goal in quantifiable, measurable ways.*

Participants voted on topics in which communication plans would be the most impactful. Working in small groups, they developed initial drafts of each communication plan.

- Four topics were selected for communication plan development
  - Culture of safety
  - Safety leadership development
  - Chemical health and safety research
  - Graduate student education
- Each communication plan template identified these components
  - Goal
  - What (resources, information, message)
  - Why (purpose of message)
  - Who (target audience and communicator)
  - When (timing)
  - How (communication channel)
  - Evaluation metrics (goals, time frame)
  - New resources needed to successfully accomplish this plan

## Goal 3

*Reflect on the current areas of safety engagement and identify gaps in which ACS could produce new key resources.*

A large group discussion at the end of the Summit focused on identifying new resources which should be developed in the immediate future. Final recommendations are presented below, ranked in order of number of votes for most impactful.

- Discoverability of ACS resources on the website (27 votes)
- Clarify guidelines or recommendations for safety summaries in ACS publications (10 votes)

- Update small business and safety culture resources (9 votes)
- ACS expectations for a competent safety program (8 votes)
- Repurpose current resources for different audiences, for example art or pre-service (7 votes)
- Industry recommendations for safety competency (3 votes)
- Engage and partner with funding agencies (2 votes)
- Outreach to the faculty evaluation process (2 votes)
- Ranking for top 25 safety programs (2 votes)
- Safety coaches through career development process (2 votes)
- Training module for educators separate from workshops (2 votes)
- Assessments for how to market to different audiences (1 vote)

## Conclusion

The ongoing interest and participation in the safety summits by ACS leadership demonstrate the value of this work. We recommend that this tradition of annual summits to assess the ACS's safety programs be continued into the foreseeable future to track progress that has occurred on the ideas discussed. Reviewing the results of previous similar discussions, both within the Committee on Chemical Safety and with the broader community, we see that much progress is enabled by these strategic discussions, even if a linear path to project completion is not immediately evident. The resources described at <https://www.acs.org/content/acs/en/chemical-safety/resources.html> are important assets to the Society and the chemical enterprise as a whole and the ongoing development and use of these resources will be catalyzed by the future work of similar summits.

*Questions or suggestions for future ACS safety summits can be directed to [safety@acs.org](mailto:safety@acs.org)*

*Written by Ralph Stuart, Chair, Committee on Chemical Safety [ralph@rstuartcih.org](mailto:ralph@rstuartcih.org) and  
Kali A. Miller, Ph.D., Assistant Managing Editor, ACS Chemical Health & Safety [k\\_miller2@acs.org](mailto:k_miller2@acs.org)*