JOINT SAFETY TEAM

Advances in Student-Led Safety at the University of Minnesota-Twin Cities

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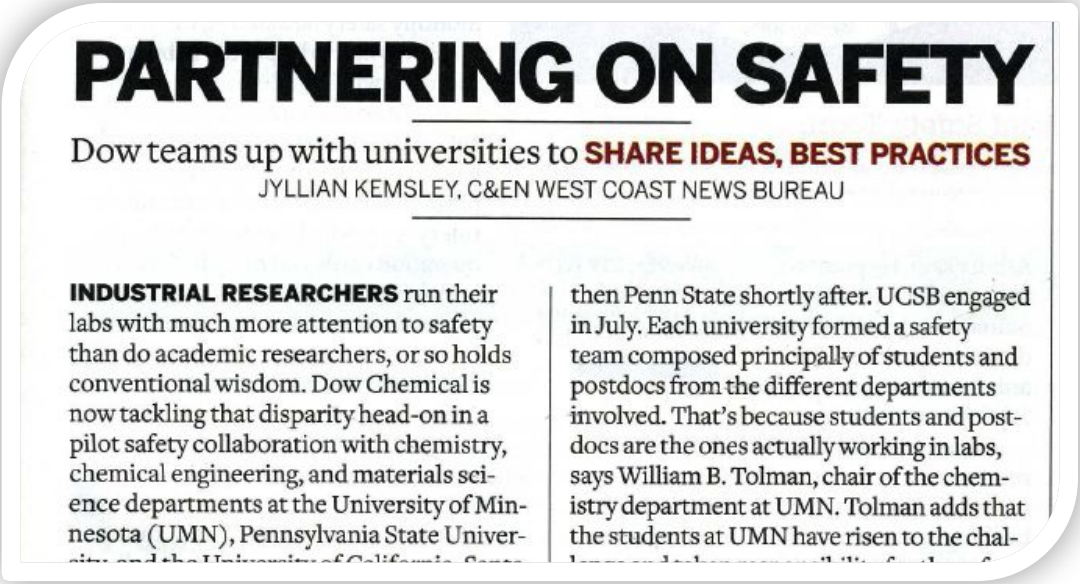
Why was the JST formed?

A need for improved safety and culture of safety

Safety survey reveals lab risk

Questionnaire suggests researchers not as safe as they feel.[3]

Recognized as leader in student-led safety.[2]



PARTNERING ON SAFETY

Dow teams up with universities to **SHARE IDEAS, BEST PRACTICES**

JYLLIAN KEMSLEY, C&EN WEST COAST NEWS BUREAU

INDUSTRIAL RESEARCHERS run their labs with much more attention to safety than do academic researchers, or so holds conventional wisdom. Dow Chemical is now tackling that disparity head-on in a pilot safety collaboration with chemistry, chemical engineering, and materials science departments at the University of Minnesota (UMN), Pennsylvania State University, and the University of California, Santa

then Penn State shortly after. UCSB engaged in July. Each university formed a safety team composed principally of students and postdocs from the different departments involved. That's because students and postdocs are the ones actually working in labs, says William B. Tolman, chair of the chemistry department at UMN. Tolman adds that the students at UMN have risen to the chal-

Why JST?

- Increased safety awareness
- Better prepared for career in industry or as a PI
- Encourage safe chemistry practice

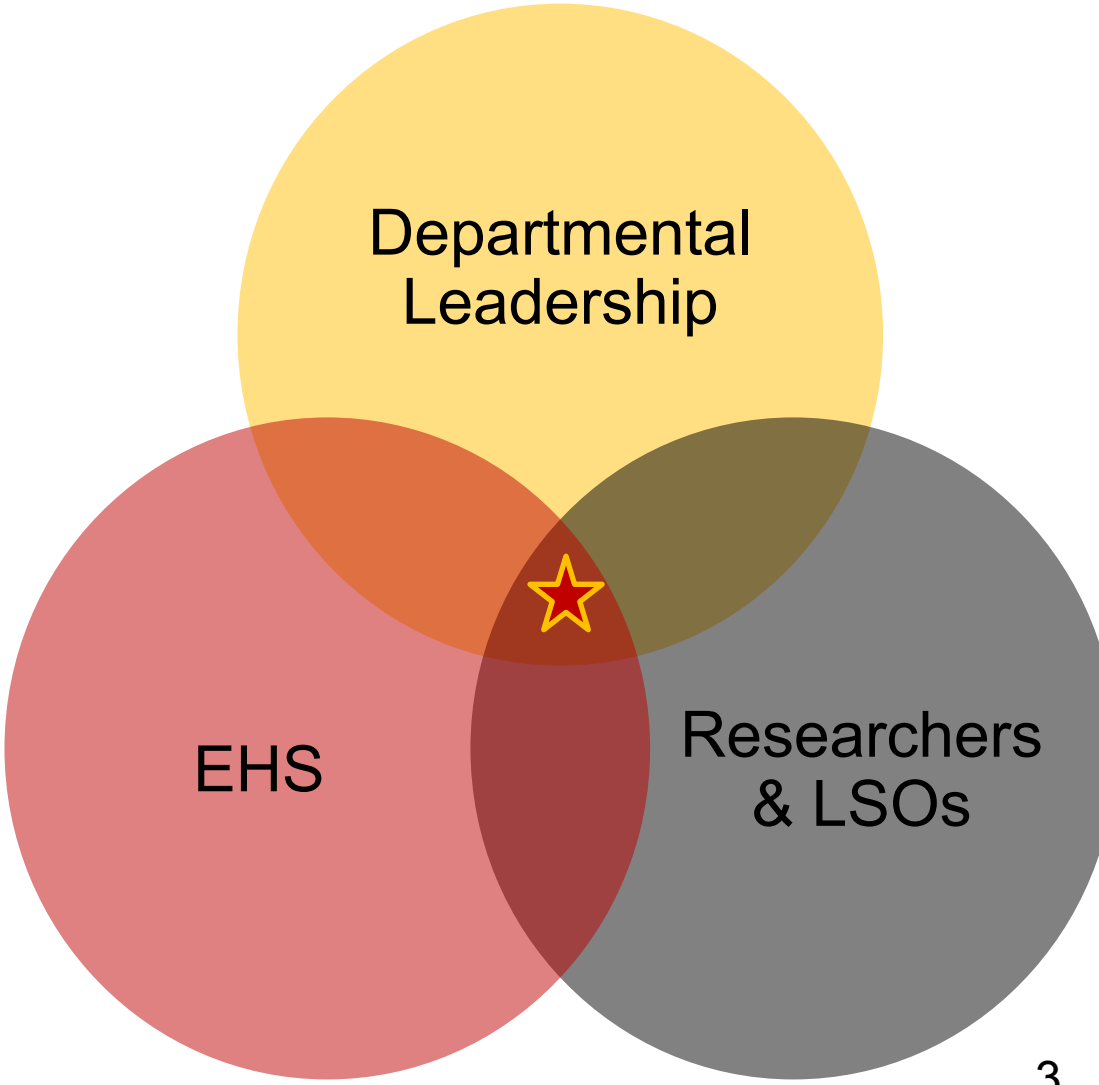
1) *C&EN,* 2012, *90*, 21–23. 2) *J. Chem. Ed.* **2021**, *98*, 158-166. 3)*Nature,* **2013**, *493*, 9–10.

Setting the Groundwork

- Lasting Changes

Joint Safety Team (JST)

Researcher-led initiative between CHEM and CEMS supported by departmental leaders and EHS



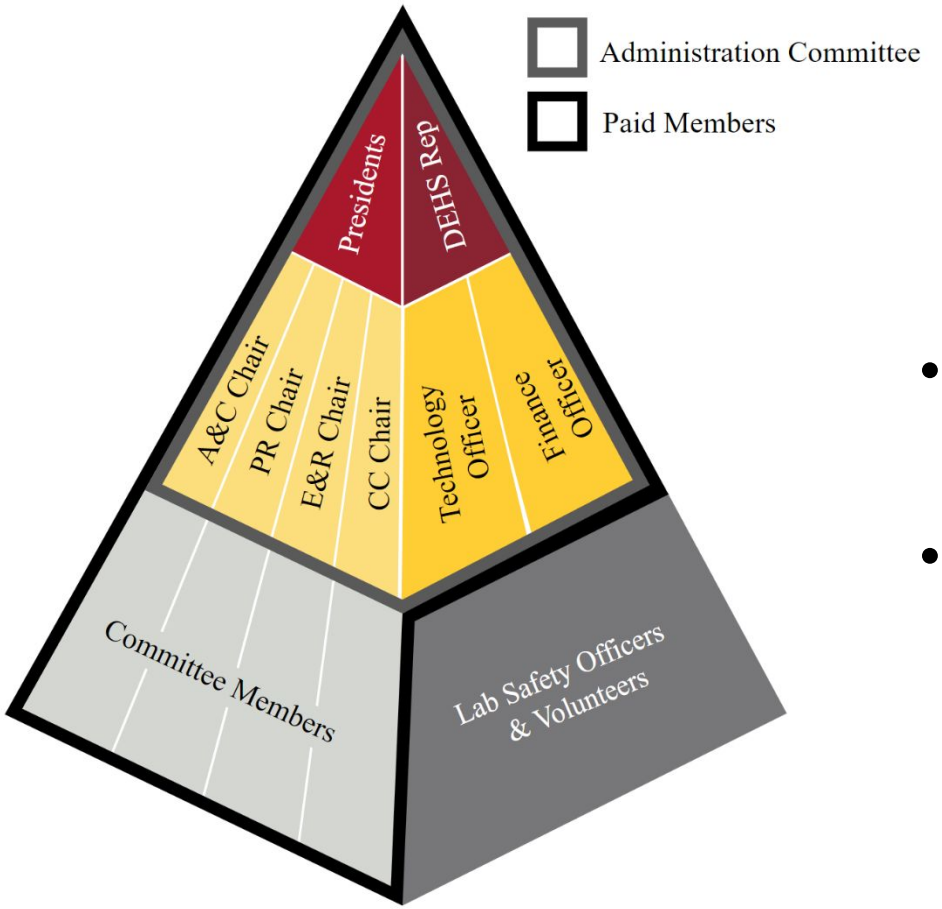
Mission Statement

Mission Statement: Student-led initiative to improve the safety culture in the CHEM and CEMS department at the University of Minnesota*

CARES

Compliance	Define and enforce standard roles and expectations through biannual lab audits
Awareness	Enhance safety through signage, safety moments, posters, and email communication
Resources	Provide easy access to information and establish a system for maintaining records
Education	Provide frequent and relevant safety education and training
Spread	Connect work to local chemical industry, PUIs, and high schools.

Organization Structure



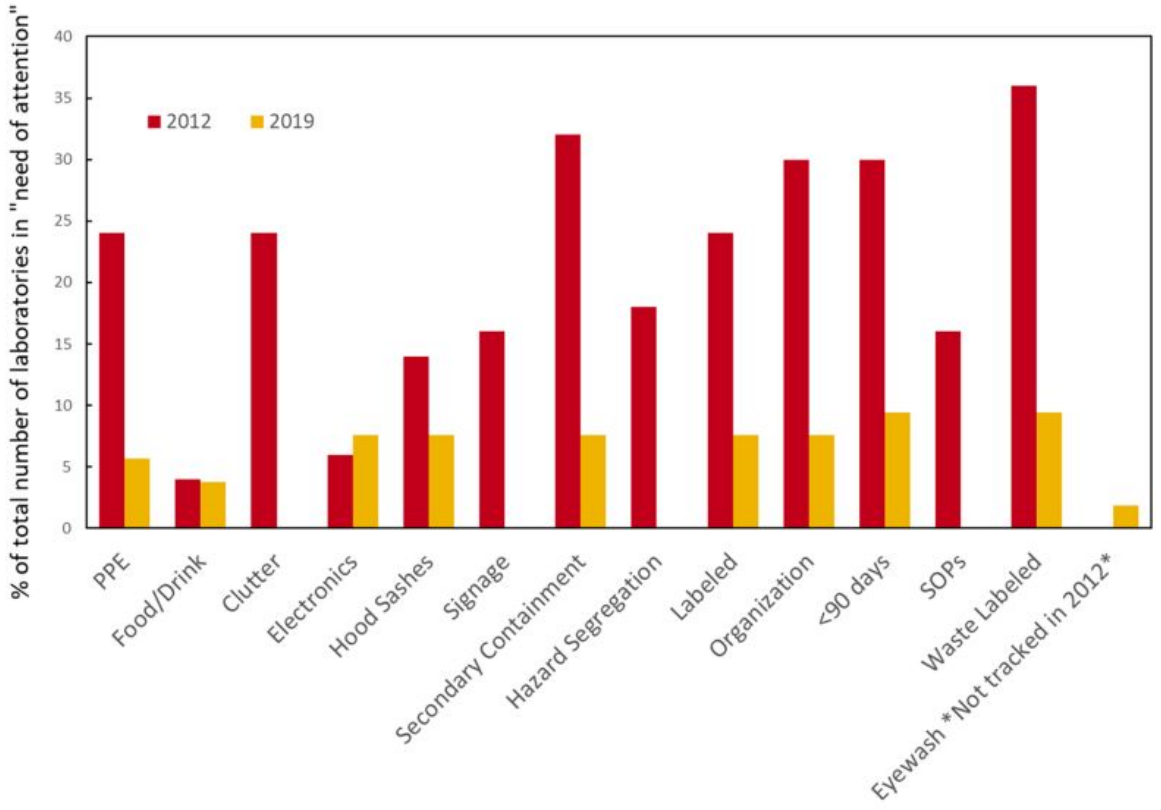
- Committees
  - Their initiative responsibilities
  - Membership
- Administrative committee members and their roles
- Relationships with EH&S and department admin.

CARES: Compliance

Analysis & Compliance Committee

Ensuring safety protocols are maintained

- Lab walk-throughs
- Yearly Surveys

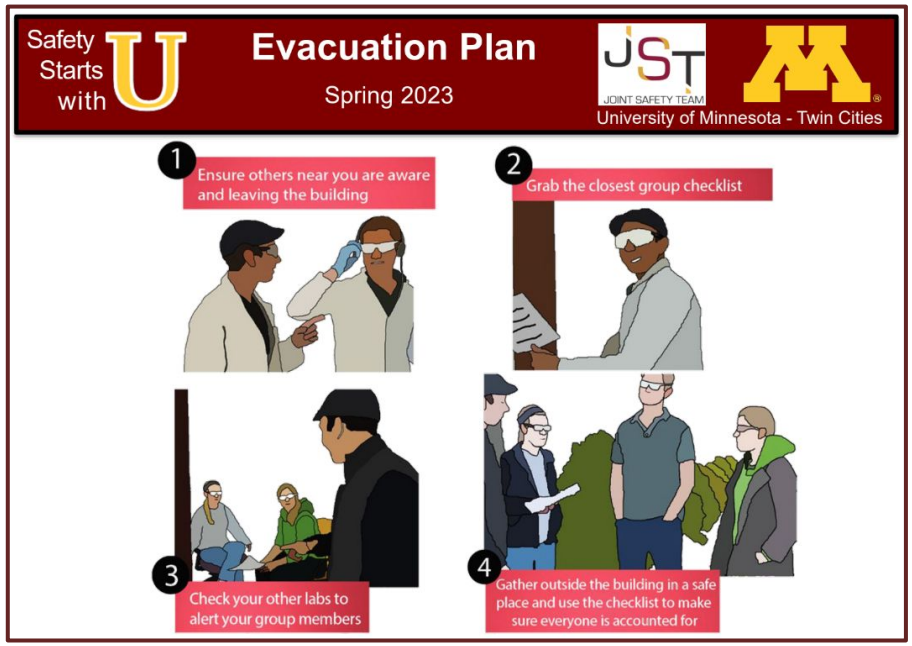


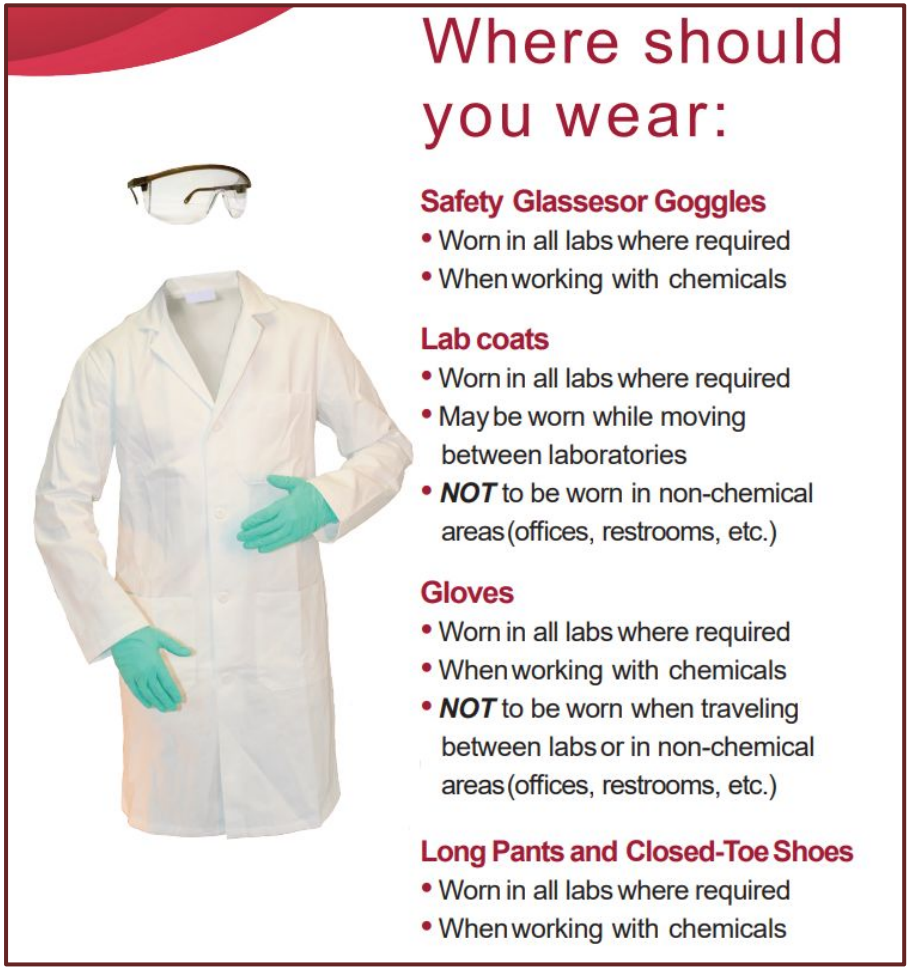
CARES: Awareness

Public Relations Committee

Increasing safety visibility

- Posters, signs, and fliers
- Social media presences
- Safety moments

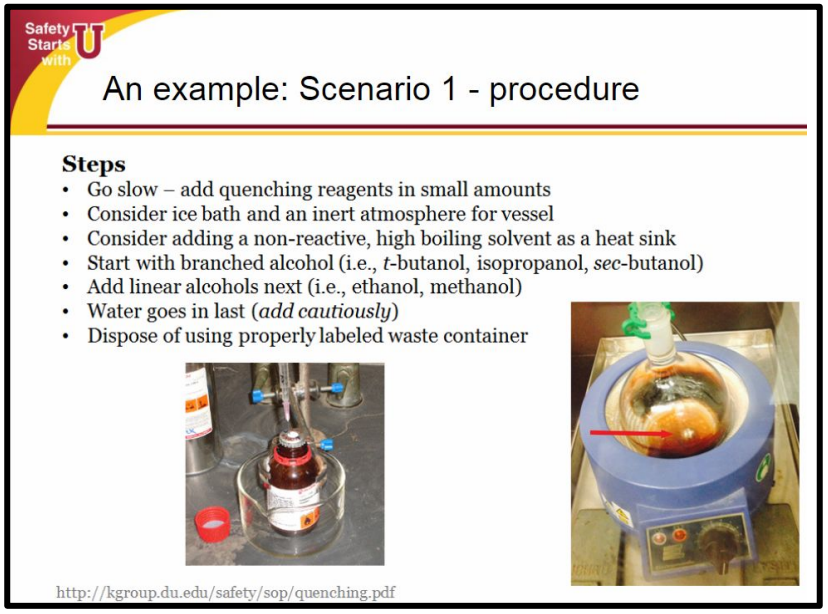


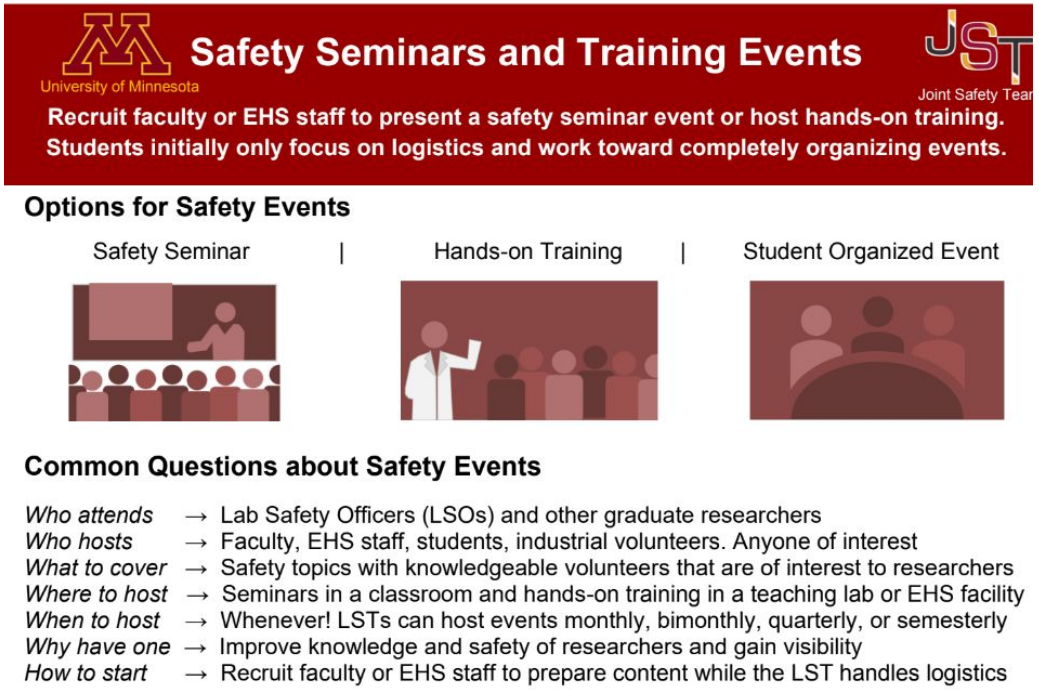


CARES: Resources & Education

Education & Resources Committee

- New LSO training
- LSO Guidebook
- Specific hazard training (Compressed gas, laser safety)





CARES: Spread

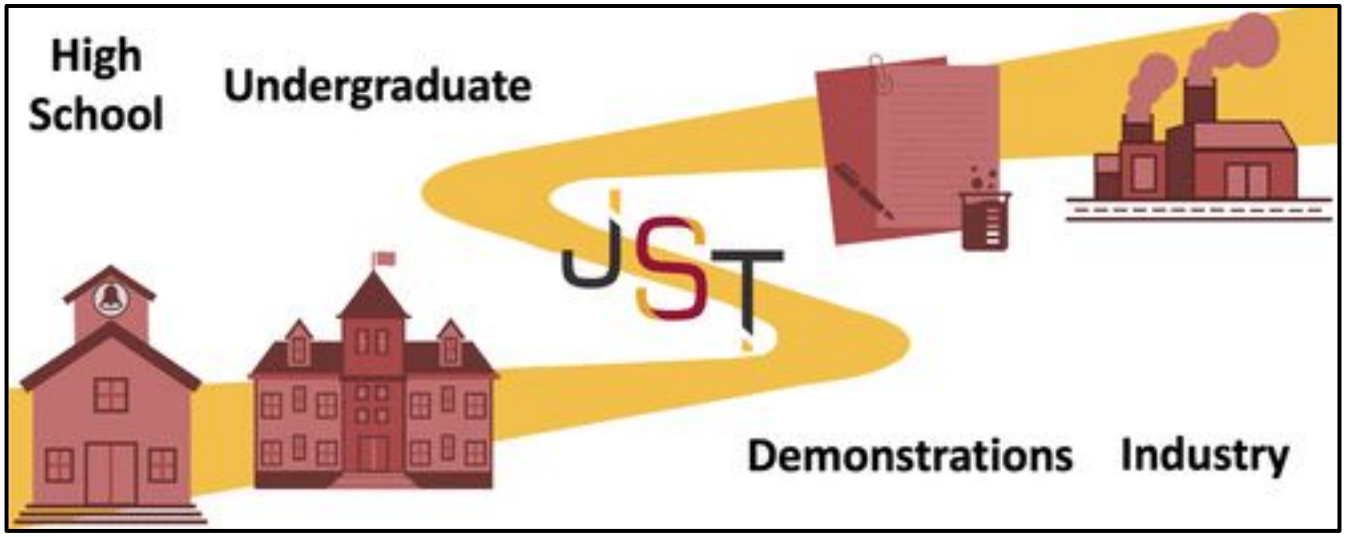
Community Connections

Connecting goals JST to the larger Minnesota community

- local chemical industries
- primarily undergraduate institutions
- high schools

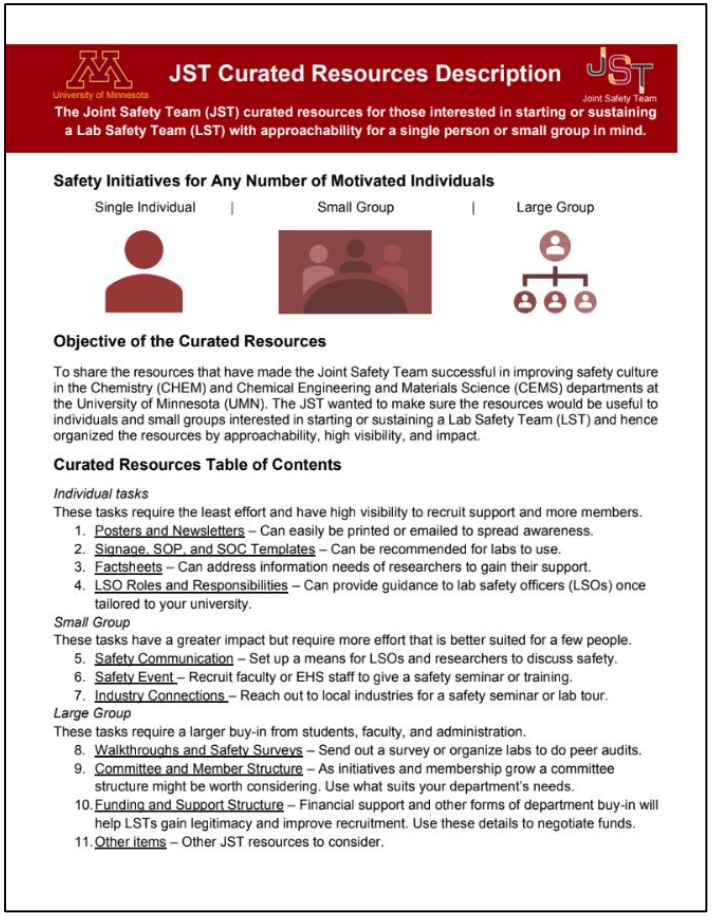
Recent Programs

- Lab safety for training for high school teachers
- PUI tours and JST discussion



ACS Chem. Health Saf. **2024**, *31(4)* 324−333

JST's 10 Curated Resources



JST Curated Resources Description

University of Minnesota — Joint Safety Team

The Joint Safety Team (JST) curated resources for those interested in starting or sustaining a Lab Safety Team (LST) with approachability for a single person or small group in mind.

Safety Initiatives for Any Number of Motivated Individuals

Single Individual | Small Group | Large Group

Objective of the Curated Resources

To share the resources that have made the Joint Safety Team successful in improving safety culture in the Chemistry (CHEM) and Chemical Engineering and Materials Science (CEMS) departments at the University of Minnesota (UMN). The JST wanted to make sure the resources would be useful to individuals and small groups interested in starting or sustaining a Lab Safety Team (LST) and hence organized the resources by approachability, high visibility, and impact.

Curated Resources Table of Contents

Individual tasks

These tasks require the least effort and have high visibility to recruit support and more members.

1. Posters and Newsletters – Can easily be printed or emailed to spread awareness.
2. Signage, SOP, and SOC Templates – Can be recommended for labs to use.
3. Factsheets – Can address information needs of researchers to gain their support.
4. LSO Roles and Responsibilities – Can provide guidance to lab safety officers (LSOs) once tailored to your university.

Small Group

These tasks have a greater impact but require more effort that is better suited for a few people.

5. Safety Communication – Set up a means for LSOs and researchers to discuss safety.
6. Safety Event – Recruit faculty or EHS staff to give a safety seminar or training.
7. Industry Connections – Reach out to local industries for a safety seminar or lab tour.

Large Group

These tasks require a larger buy-in from students, faculty, and administration.

8. Walkthroughs and Safety Surveys – Send out a survey or organize labs to do peer audits.
9. Committee and Member Structure – As initiatives and membership grow a committee structure might be worth considering. Use what suits your department's needs.
10. Funding and Support Structure – Financial support and other forms of department buy-in will help LSTs gain legitimacy and improve recruitment. Use these details to negotiate funds.
11. Other items – Other JST resources to consider.

Individual

1. Posters and Newsletters.
2. Signage, SOP, and SOC Templates
3. Factsheets
4. LSO Roles and Responsibilities

Small Group

5. Safety Communication
6. Safety Event
7. Industry Connections

Large Group

8. Walkthroughs and Safety Surveys
9. Committee and Member Structure
10. Funding and Support Structure

Printable Information

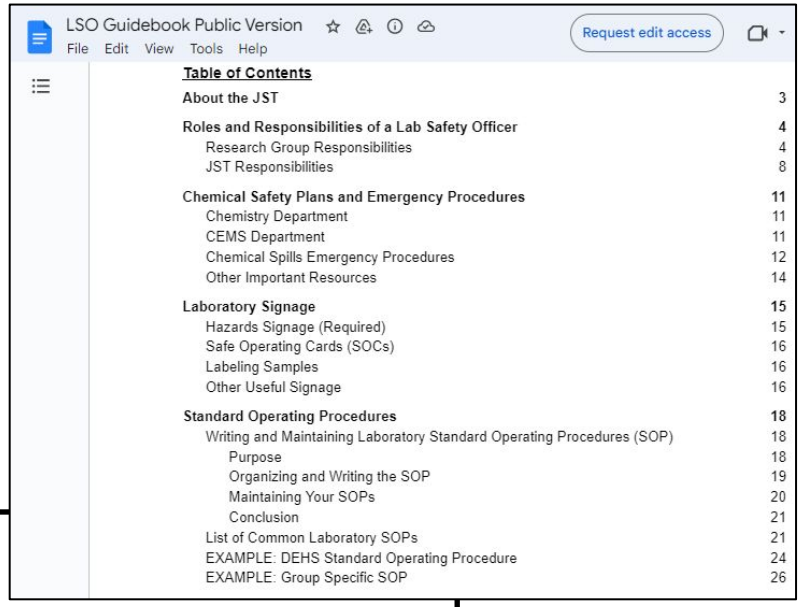
1. Posters and Newsletters
2. Signage, SOP, and SOC templates
3. Factsheets

J. Chem. Educ. 2013, 90, 11, 1414–1417. https://doi.org/10.1021/ed400305e

Clarifying LSO Roles & Responsibilities

Graduate researchers are often assigned as a lab's safety contact, sometimes without documented instructions

- Lab Safety Officer
- Lab Safety Contact
- Safety Designate
- Chemical Hygiene Officer


LSO Guidebook Public Version

File Edit View Tools Help

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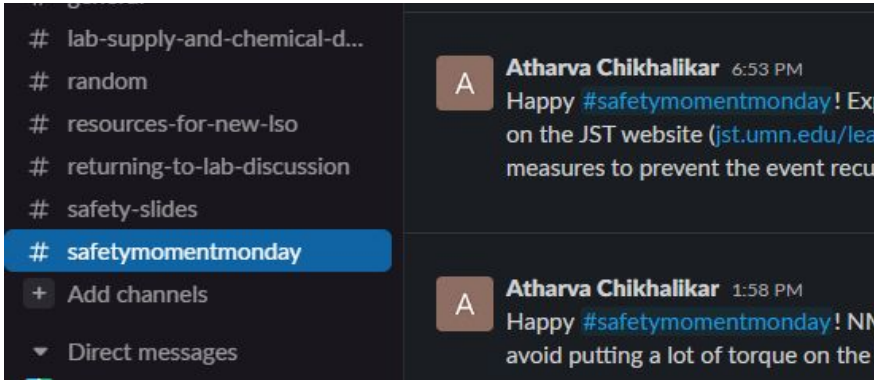
Table of Contents

Accessibility
- Easy for 1 person to email to other LSOs
- Motivate other students to get join the cause

Encouraging LSO Safety Communication

- Set up an X account (Twitter) to share safety tips
- Discussion topics for an LSO messaging group/app
- Learning Experience Reports



Learning Experience Reports

If you experienced or observed an incident, an accident, or an 'almost!' situation, please report it here:

Learning Experience Report Form (requires a University of Minnesota e-mail address)

Important:

If someone was injured (even minor cuts or exposures), please be sure a First Report of Injury form has been completed first! See our Incident Reporting page for more.

What is required:

The submission form is anonymous and only requires a brief description of the incident and the suggested measures that could be taken to solve the problem. Anyone with a UMN account can create a submission.

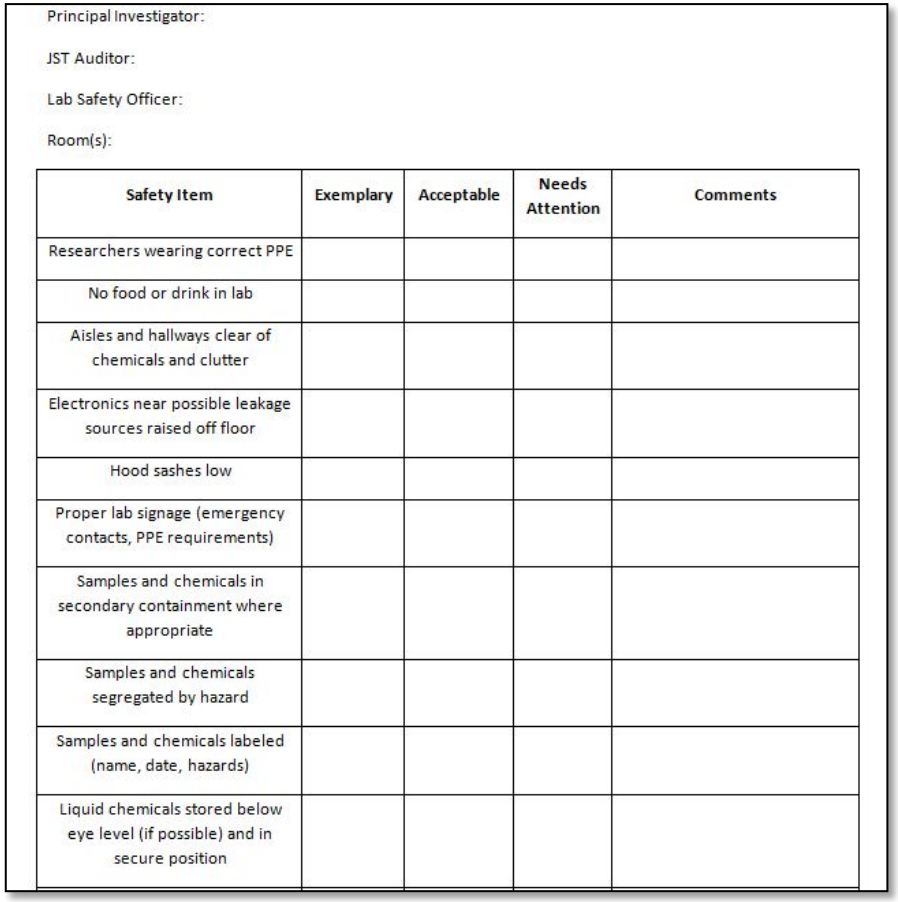
Engaging Event Volunteers

6. Request university staff or faculty to give safety seminars
   - Waste disposal
   - Hazard specific
     - Cryogenic
     - Lasers
     - Gas cylinders

7. Recruit from industry for safety panels, tours, or funding

Standardized Walkthrough & Survey Templates

- Semesterly peer-to-peer walkthroughs allow LSOs to inspect each other's labs
  - General and hazard specific rubrics
- Safety surveys gauge safety sentiments in labs



Principal Investigator:

JST Auditor:

Lab Safety Officer:

Room(s):

Safety Item	Exemplary	Acceptable	Needs Attention	Comments
Researchers wearing correct PPE				
No food or drink in lab				
Aisles and hallways clear of chemicals and clutter				
Electronics near possible leakage sources raised off floor				
Hood sashes low				
Proper lab signage (emergency contacts, PPE requirements)				
Samples and chemicals in secondary containment where appropriate				
Samples and chemicals segregated by hazard				
Samples and chemicals labeled (name, date, hazards)				
Liquid chemicals stored below eye level (if possible) and in secure position				

10 JST Resources for LSTs

1. Posters and Newsletters
2. Signage, SOP, and SOC templates
3. Factsheets
4. LSO Roles and Responsibilities
5. Safety Communication Network
6. Education Event Recruitment
7. Industry Tour or Panel Recruitment
8. Peer Walkthrough Rubrics & Safety Survey Templates
9. JST Structure and Initiatives
10. Department and Industry Funding

Email us at jst@umn.edu

Visit our website jst.umn.edu

Thank you

- UMN Chemistry Department and Chemical Engineering & Material Science Department
- PPG
- DOW
- Valspar
- JST members past and present

Departmental Support

Industrial Support