

Creating a Culture of Safety

Safety Culture

Promoting and maintaining safety is not a procedure, it is not a form to sign, it is not a protocol, it is not a chore or a burden.

It is a culture.

Safety Culture

National Academy's Word on Safety:

“Principal investigators and department chairs are responsible for establishing a strong, positive safety culture in the laboratories they oversee, by demonstrating safe practices and wearing personal protective equipment, ensuring researchers are properly trained in safety before they begin any work, and encouraging open, ongoing dialogue about safety concerns.”

-National Academy of Science Report (7/31/14)

http://www.eurekalert.org/pub_releases/2014-07/naos-nrc073114.php

Safety Culture Tip # 1

**Dedicate time: 1-2 slides (3-5 minutes)
before a scientific presentation to safety.**

**It could be before the seminar,
or before the group meeting.**

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**Borrowed
from Dow
Chemicals**



**Borrowed from
University of MN**



**Borrowed from Physical
Chemistry Group
Meetings at USC**



**NS Division
Meetings
Cascadia
College**

Safety slide example

Safety Starts with U

Smart Phones in the Lab

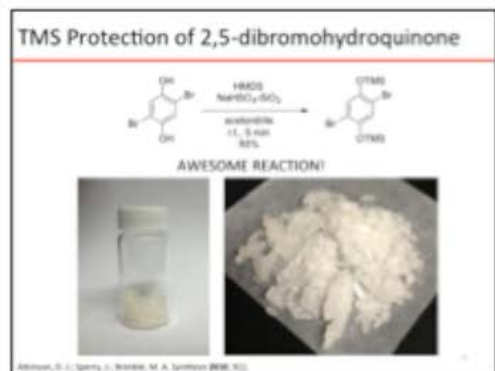
Upsides: A useful tool, photographic evidence (makes for eye-catching slides)

Phone uses:

- Lab timer
- Calculator
- Look up information on the internet
- Pictures of experiments



chemiluminescence captured (Yong)



Wegs shows us her awesome reaction & crystals

Safety slide example

Safety
Starts
with **U**

Smart Phones in the Lab

Phone uses:

- Talk
- Text messages

Risks: Transferring hazardous chemicals



Safety Culture Tip # 2

Model the behavior you want to see in your students:

- **Research lab**
- **Academic lab**

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- ✓ **PPE**
- ✓ **Training**
- ✓ **Knowledge of experiments – hazards**

Safety Culture Tip # 2

Onboarding students/group members:

- Establish a baseline of the students experience and teach from there
- Training – all members have the same safety expectations
- Instruction – Standard Operating Procedures (SOPs)
- Checklist for training – you don't want to miss anything!
- Devise a safety assessment – Quiz; Checklist
- Set regular intervals for re-training for everyone

Safety Culture Tip # 2

ACS: RAMP to safety

Recognize hazards

Assess the risks of hazards

Minimize the risks of hazards

Prepare for emergencies

RAMP perpetuates a sustainable cycle of lab safety management

<https://www.acs.org/content/acs/en/chemical-safety/ramp.html>

Safety Culture Tip # 2

SOPs:

- Hierarchy of Control Measures
- Be familiar with your institution's EH&S protocols

Safety Culture Tip #2

Teaching labs and accessibility

- **Model the behavior you want to see**
 - **Faculty; lab technicians**
 - **Prepare yourself well for each lab expt**
- **Accommodations for disabilities may be warranted for safe laboratory work**
 - **It's the law!**
 - **Work with DSS office**
 - **ACS Symposium Series Publication – Accessibility in the Laboratory, Sweet et al (2018)**

Safety Culture Tip # 3

Be aware of your Power and Authority

Think, Pair, Share:

Examples of ways that your power and authority can adversely affect lab safety.

Safety Culture Tip #4

Be aware of influences on group safety culture

- **Other groups**
- **Culture in teaching lab**
- **Friends**
- **Online videos**

Safety Culture Tip #5

Categories of Unsafe Behavior

- **Honestly unaware that the behavior is unsafe.**
- **Know that the behavior is unsafe but do not know other options.**
- **Know that the behavior is unsafe but too lazy to correct.**
- **Cavalier attitude.**
- **Deliberately seeking risk.**

Safety Culture Tip #6

Gray Areas

- **Gray areas exist and will continue to exist for safe chemistry.**
- **Ambiguous safety procedure.**
- **Balancing risks between options.**
- **Informed judgement calls.**

**Think, Pair, Share:
Examples of gray areas.**

Safety Culture Tip #7

Thanking and Appreciating the Safety Officer

- **Safety officer is a thankless job.**
- **Give verbal praise in a group meeting.**
- **Ask for a round of applause for managing a safety related situation.**
- **Written appreciation and praise (as in a group email, or in a card).**

Safety Culture Tip #8

Reporting and Guilt

- **Formally (verbal and written) announce that there is no guilt with reporting incidents.**
- **Create a space where incidents are thoroughly investigated.**
- **Share in a methodical way the outcome of even the most minor lab incidents with the group.**

Safety Culture Tip #9

EH&S: Relationship with the Safety Inspectors and Officers

- **They are your friends, not enemies.**
- **Ask for their advice in advance.**
- **Create a respectful and professional relationship with them.**

It is never complete ...

- **You will never achieve perfection.**
- **Your lab will never achieve perfection in safety, but we continue to strive toward it.**