



## ***Dow Lab Safety Academy***

# ***Promoting a Positive Safety Culture in Academia***

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April 2, 2019  
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# Safety is Non-Negotiable!



Source: <https://www.the-scientist.com/technology-profile/an-accident-waiting-to-happen-52199>

# Safety is a Journey – Then & Now



# Preventing Academic Lab Incidents: Opportunity/Challenge



Source: [www.csb.gov](http://www.csb.gov)

**2008:** A lab research assistant died from burns sustained while working with t-butyl lithium.



Source: [www.csb.gov](http://www.csb.gov)

**2010:** Two graduate students sustained injuries due to an explosion working with highly energetic materials



Source: [UCCLS 2016 Report](#)

**2016:** A post-doc lost her arm due to an explosion with a 13 gal storage tank of H<sub>2</sub> and O<sub>2</sub> mixture

*...Need to accelerate improvements in academic safety culture and reactive chemical hazard prevention*

# New Employee Observations

*"The striking difference [between University and Dow safety] was in the training & awareness"*



*Working safely is a priority at Dow*



*Inspection before use*

*"Dow makes safety a priority and a worker will not be penalized for a delay caused by being safe"*

*"It was very common to see people in (University) labs wearing sandals, even while working with strong organic solvents and acids"*



*Safety shoes (PPE)*



*Safe Operating Procedure*

*"The culture of actively writing procedures BEFORE experiments is something I've never seen before Dow"*



*Examples of Personal Protective Equipment (PPE)*

*"In Graduate School, pretty much every reaction was run wearing only safety glasses, thin nitrile gloves and maybe a lab coat. Having access to the appropriate PPE has been a major change."*



*Safety Shower*

*"I was not aware of the importance of safety showers, eye stations until I started working in a company"*



# Dow - University Safety Partnership

## *What's in it for Universities & Dow?*

- ✓ Creates a competitive advantage for university programs
- ✓ Safety education is congruent with the education mission of universities.
- ✓ Promotes a safety mindset in the future workforce of the chemical community
- ✓ Enhances reputation of academia and industry



# Dow - University Lab Safety Workshops

*University of Minnesota, Penn State, UC Santa Barbara, Northwestern, University of Chicago*

## Dow

- Shared EH&S Best Practices for lab research
- Hosted University delegations for 2-day onsite workshops
- Funded travel to Dow
- Employee visits to Universities



## University

- Established interdepartmental teams (ChE, Chem, MSE)
- Delegations\* visited Dow to observe, train and learn
- Adapted and implemented best practices across departments



*\*Includes students, faculty, post docs & EHS officers*



# Key Attributes of Dow's Laboratory Safety Culture



- Pre-task planning
- Hazard awareness
- Well defined protocols
- Emergency planning
- Leadership engagement
- Accountability
- Ownership
- Communication

Collaborate Across Disciplines

Develop Safety Measures

Focus on Accident Prevention



# Dow – University Lab Safety Workshops

Over 80 students, post-docs, faculty and safety officers attended workshops



Topics included:

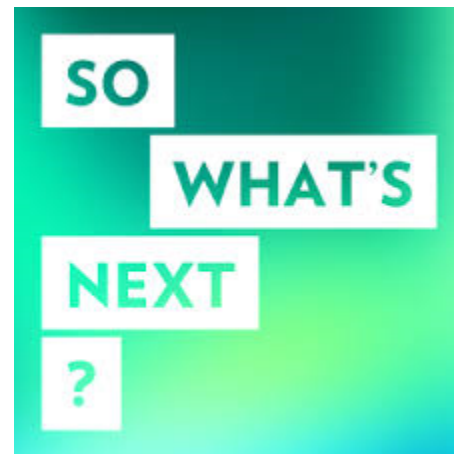
- *Reactive chemicals handling*
- *Hazard Assessment*
- *Glassware handling under vacuum or pressure*
- *Personal protective equipment*
- *Chemical labeling*
- *Nanoparticle safety*
- *Working with pressure reactors*
- *Risk Mitigation*

## **Plus:**

- *Making Safety Personal – Coaching & Intervention*
- *Near Miss and Learning Experiences*
- *Leadership Engagement*

# Key Learnings from Workshops

- Set expectations - Have an owner's mindset
- Leadership engagement is critical for success – use a dual approach
- Find change agents to lead the way
- Empowerment of EHS safety officers and students / post docs in lab is critical
- Protocols for safety procedures help establish expectations
- Positive reinforcement for safe behaviors is more effective than punitive measures
- Continual engagement and communication are key to sustaining culture



# Dow Lab Safety Academy Website

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### DOW LAB SAFETY ACADEMY

At Dow, our safety culture is part of everything we do and every decision we make. The Dow safety mindset is based on driving behavior toward incident prevention, sustained by renewed employee engagement and the responsibility to provide a safe work environment for our employees.

Our goal with the Dow Lab Safety Academy is to enhance awareness of safety practices in academic research laboratories and to promote a safety mindset in the future workforce of the chemical community.

[CLICK HERE TO BEGIN](#)

Since 2013 Launch...

- 75,000+ enrolled viewers
- >550,000 views
- >180 universities
- >400 Govt Agencies/National Labs
- >100 companies
- 150 countries
- 2 external awards
- > dozen media stories

<http://safety.dow.com>



2018 Howard Fawcett Chemical  
Health & Safety Award



## Sustaining the Momentum...



- ✓ Dow Lab Safety Academy Website
- ✓ On-going University Partner Network
- ✓ Safety expectations for Dow Principal Investigators leading sponsored university research programs
- ✓ Safety engagement included as part of new-hire recruiting
- ✓ Strategic partnerships across industry, academia, professional societies, national labs, etc.

