

We will start momentarily at 2pm ET



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Fan of the Week

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Beginning in 2014 all recordings of ACS Webinars will be available only to current ACS members.

We appreciate your patience while we work to complete the migration of past and current episodes, which we hope to have available as soon as possible.

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Upcoming ACS Webinars®

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Thursday, February 27, 2014

**“2014 Drug Discovery Series:
Overview of the Drug Discovery and
Development Process”**

Dr. Derek Lowe (Vertex), **Dr. Richard Connell** (Pfizer) &
Dr. Nicholas Meanwell (Bristol-Myers Squibb)



Thursday, March 6, 2014

**“From Waste to Wealth Using Green
Chemistry”**

James Clark, Director, Green Chemistry Centre of
Excellence
Dr. Joseph Fortunak, Professor, Howard University

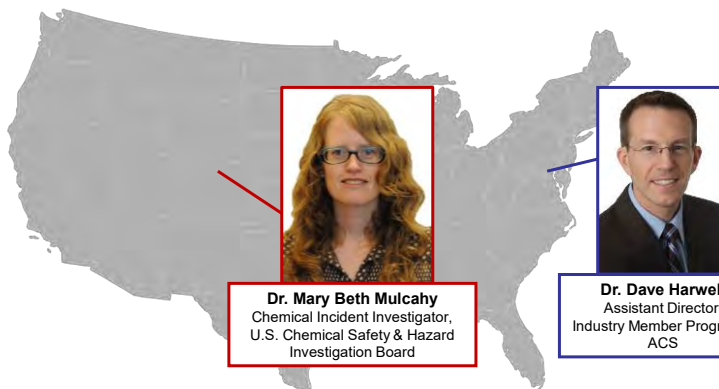
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Tragic Chemical Accidents: Tales, Investigations, and Lessons Learned



Dr. Mary Beth Mulcahy
Chemical Incident Investigator,
U.S. Chemical Safety & Hazard
Investigation Board

Dr. Dave Harwell
Assistant Director,
Industry Member Programs,
ACS

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U.S. Chemical Safety and Hazard Investigation Board



Tragic Chemical Accidents – Tales, Investigations, and Lessons Learned

Mary Beth Mulcahy, Ph.D.
Chemical Incident Investigator
U.S. Chemical Safety & Hazard Investigation Board

ACS Webinar
February 20, 2014



Chemical Safety Board (CSB)

- Independent Federal Agency
- Non-regulatory

Mission

To prevent chemical accidents

- Conducting root cause investigations
- Reporting findings publicly
- Making recommendations to organizations and agencies that can affect change
 - Companies
 - Government Agencies (local, state and federal)
 - Standard setting bodies/professional organizations

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Audience Trivia Question

- The **most effective** means to protect yourself from a chemical accident?
 - **Engineered Controls** (ventilation systems, automatic shut off devices, etc.)
 - **Personal Protective Equipment** (goggles, gloves, hardhat)
 - **Training**
 - **Warnings** (signs, placards, etc.)

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Natural Gas Explosion



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Hydrogen Explosion



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Fire, Explosion, Blowout



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Ammonium Nitrate Fire and Explosion

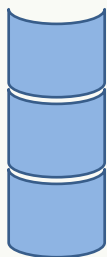


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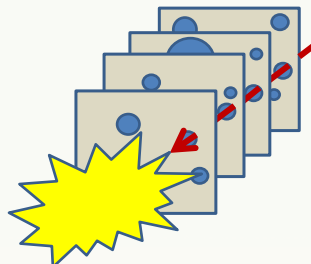


Outline

Hierarchy of Controls



Swiss Cheese Model



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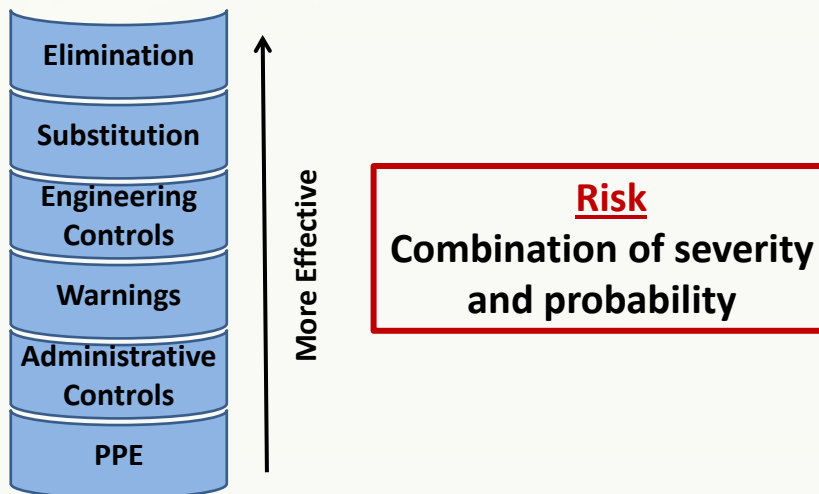
Audience Trivia Question

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Hierarchy of Controls

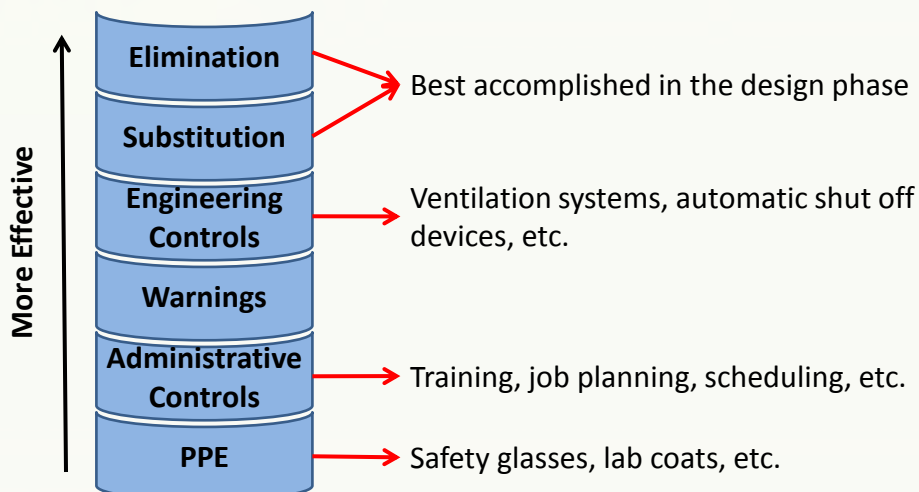


American National Standard Institute (ANSI), *Occupational Health and Safety Management Systems, ANSI/AIHA Z10-2012.*

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Hierarchy of Controls



American National Standard Institute (ANSI), *Occupational Health and Safety Management Systems, ANSI/AIHA Z10-2012.*

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Explosion at Kleen Energy



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Natural Gas Explosion



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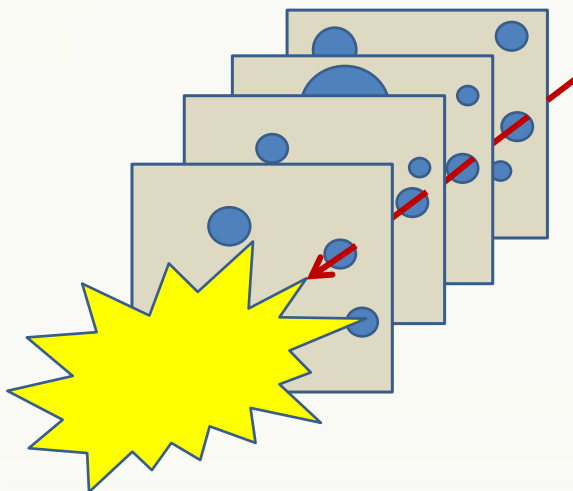
Audience Trivia Question

- Have you ever worked in a laboratory and not put on your safety goggles when chemicals were out and in use?
 - No, I always wear goggles
 - Yes, but these occasions are infrequent
 - Only if they match my outfit...

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Swiss Cheese Model



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Laboratory Explosion

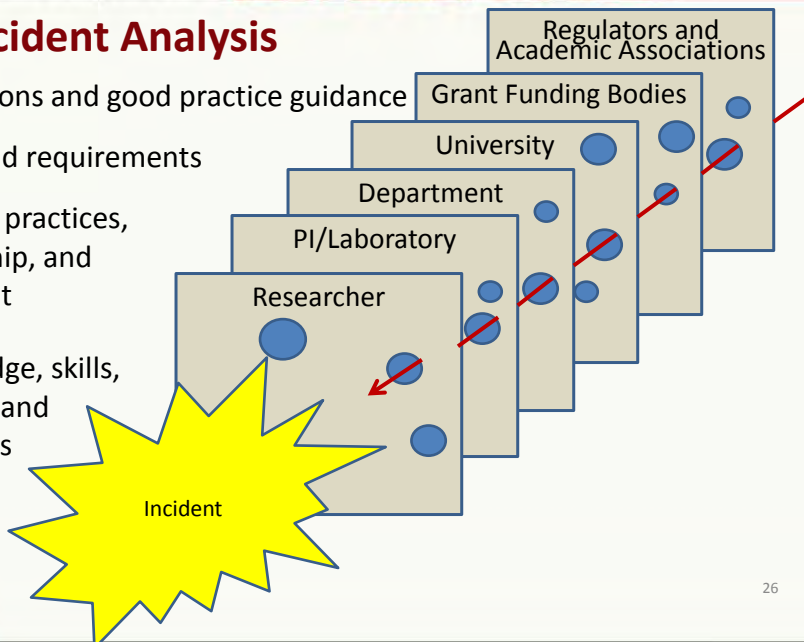


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Incident Analysis

- Regulations and good practice guidance
- Rules and requirements
- Policies, practices, leadership, and oversight
- Knowledge, skills, actions, and decisions



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marybeth.mulcahy@csb.gov

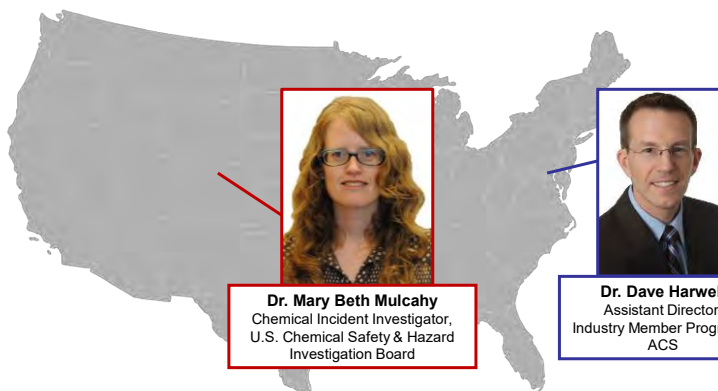
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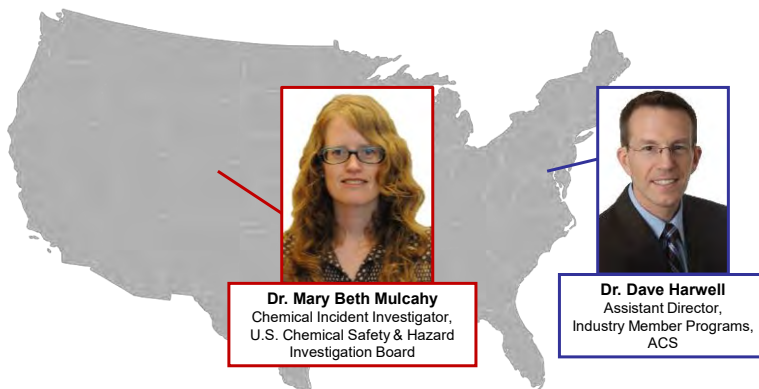
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