Lab Safety Awareness for Non-Laboratory Personnel

Presented by: EHS Office
October 2014
Objectives

- Recognize potential laboratory hazards
  - Biological
  - Chemical
  - Radiological
  - Physical

- Ways to protect yourself from exposure to hazards

- Emergency Procedures
Hazardous Substances

What are they?
- Any material that poses a threat to human health and or the environment

How do you identify them?
- Labels, signs, smell, sight, safety data sheet, or a knowledge of what is in the space
General Considerations

- Assume items in lab may be contaminated
- Never touch or move lab equipment yourself – always ask lab staff
- Never touch a sharp
- Don’t take anything out of the lab (ie. Chemical containers)
- Ask for assistance

- When working on chemical fume hoods – notify labs affected
- Notify Campus Police of suspicious activity
- Notify building of all utility shutdowns (ie. Water & eyewashes)
- Keep egress path clear
Hazard Signage

Biological

- Indicated a biological hazard is present that may be infectious

Where can it be found:
- Doorway signs
- Containers
- Boxes
- May indicate biosafety level – BL1 or BL2
<table>
<thead>
<tr>
<th>Hazard</th>
<th>Signage</th>
<th>Chemicals</th>
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<tbody>
<tr>
<td><strong>Health Hazard</strong></td>
<td>- Carcinogen</td>
<td>- Irritant (skin and eye)</td>
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<td></td>
<td>- Mutagenicity</td>
<td>- Skin Sensitizer</td>
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<td></td>
<td>- Reproductive Toxicity</td>
<td>- Acute Toxicity (harmful)</td>
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<td></td>
<td>- Respiratory Sensitizer</td>
<td>- Narcotic Effects</td>
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<td>- Target Organ Toxicity</td>
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<td></td>
<td>- Aspiration Toxicity</td>
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<td>- Hazardous to Ozone Layer</td>
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<td></td>
<td></td>
<td>(Non-Mandatory)</td>
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<td><strong>Flame</strong></td>
<td>- Flammables</td>
<td>- Explosives</td>
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<td></td>
<td>- Pyrophorics</td>
<td>- Self-Reactives</td>
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<td>- Self-Heating</td>
<td>- Organic Peroxides</td>
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<td>- Emits Flammable Gas</td>
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<tr>
<td><strong>Exclamation Mark</strong></td>
<td>- Irritant (skin and eye)</td>
<td>- Acute Toxicity (fatal or toxic)</td>
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<td>- Skin Sensitizer</td>
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<td><strong>Gas Cylinder</strong></td>
<td>- Gases Under Pressure</td>
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<td><strong>Corrosion</strong></td>
<td>- Skin Corrosion/Burns</td>
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<td>- Eye Damage</td>
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<td>- Corrosive to Metals</td>
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<td><strong>Exploding Bomb</strong></td>
<td>- Explosives</td>
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<td><strong>Flame Over Circle</strong></td>
<td>- Oxidizers</td>
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<td><strong>Environment</strong></td>
<td>- Aquatic Toxicity</td>
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<td><strong>Skull and Crossbones</strong></td>
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Hazard Signage

Chemicals

- Labels on chemical containers
- Door Signs
- Storage Cabinets
- Packages
- Equipment
- Chemical Fume Hoods
Hazard Signage

Chemicals

- Danger Sign: Chemical Storage Area, Unauthorized Personnel Keep Out
- Caution Sign: Select Carcinogen, Use by Authorized Personnel Only
- Hazardous Substance Signs: Toxic, Flammable, Oxidizer, Poison, Non-Flammable Gas, Flammable Gas, Dangerous Goods
Hazard Signage
Radiological

- CAUTION RADIATION AREA
- CAUTION RF RADIATION HAZARD AUTHORIZED PERSONNEL ONLY
- CAUTION X-RAY RADIATION AUTHORIZED PERSONNEL ONLY
- CAUTION LASER RADIATION DO NOT STARE INTO BEAM CLASS 2 LASER
Physical Hazards

- Electrical hazards
- Extreme temperatures (ie. LN2)
- Trip Hazards
- Gas Cylinders
- UV lights
- Others...
Protection

- Information
  - Safety Data Sheets

- Personal Protective Equipment
  - Gloves
  - Eyewear
  - Clothing

- Safety Equipment
  - Fire Extinguishers
  - Eyewash and Safety Showers
  - Automatic External Defibrillator (AED)
Responsibilities

Lab Workers

- Maintain safe work area
- Follow safety rules
- Communicate potential lab hazards to non-lab personnel
Responsibilities

Non-Lab Worker (for entering a lab or hazmat area)
- Speak with a lab rep about potential hazards
- Enter when lab personnel present (preferably)
- Note hazard signage, follow noted entry requirements/restrictions
- Ask questions!
- Notify lab staff of any concerns
- Wear PPE if needed
- Wash hands after exiting the lab

Signs and Labels
Procedures if Exposed

- Wash affected areas – 15 minutes
  - Sink
  - Eyewash
  - Emergency Shower

- Let other know
  - Notify responsible lab rep
  - Notify your supervisor

- Seek medical attention - if needed

- Complete Accident Report Form OR Incident Report Form
Emergency Procedures

All emergencies dial x 5555 from a campus phone

Emergency Response Guidelines are posted in all labs
- Contact phone numbers
- Evacuation Procedures
- Spill Response
- Fire
- Medical Emergencies
Spill Procedures

- Evaluate the situation as best you can.

- Report immediately to a lab representative and your supervisor from a safe location. Supervisor will contact EHS and or Campus Police.

- Remove yourself from the area – the spilled material (can be a liquid, solid or gas) may be volatile and pose an inhalation risk. Put a sign on the door to prevent others from entering.

- EHS & lab rep will determine if outside assistance is needed.
Wash Your Hands!

- Before exiting the lab
- Immediately if something gets on them
- Prevents cross contamination of work areas
- Proven method for infection control
Alarms & Monitors

- Signage
- Response
- Who is accountable
- Examples
  - Chemical Fume Hoods
  - Oxygen
  - Freezers
Utility/Mechanical Spaces

- Ducts
- Air Handling Units
- Noise
- Waste Water
- Drains
- Obtain a permit for hot work