

CHEMICAL AND MISCELLANEOUS ASPECTS

Research Administrator Training

Stumbling Block #1

- Research Administrators sometime assume the researchers...
 - Know all their regulatory requirements
 - Obey them...
- (Psst!) They don't.

Stumbling Block #2

- Thinking that because your department does not have chemical laboratories that chemical issues need not be considered. You also need to consider:
 - Compressed gases
 - Laser and laser cutters
 - 3D printing
 - Soldering
 - Cleaning or sterilizing materials
 - Paints (including spray paints)

Approvals are the Key

- Somewhere in the process of producing a proper protocol, people need to approve many things:
 - Compliance with applicable safety regulations
 - Compliance with applicable environmental regulations
 - Compliance with University requirements
- Of course, these are requirements in any day-to-day activity as well

Departments of Concern

- Laboratory Areas:
 - Chemistry
 - Physics
 - Biology
 - Chemical Engineering
 - Mechanical Engineering
 - Materials Science & Eng.
 - Civil and Environmental
 - Computer and Elect. Engineering
- Non-lab areas
 - Art
 - Drama
 - Architecture
 - Design
 - Robotics
 - Computer Science
 - Psychology
 - More!

Chemical Use Requirements

- **Training** of all applicable personnel
 - Lab Safety
 - Hazard Communication (non-lab chemical use)
 - Hazardous Waste Generation
 - Fire Extinguisher Use and Fire Safety
 - Lasers
 - Shipping/Receiving of Hazardous Items
 - Hand and power tools
 - Driving (What? Driving?)

Training

- **OSHA** requires training for all employees in designated roles:
 - Chemical use, chemical exposure, protective equipment
 - Physical safety, ladders, confined spaces, electricity, equipment use
- **EPA** requires training for all persons who produce hazardous waste, including things you might not think of as hazardous...

Training

- **DOT** requires training for all persons involved in the transportation of hazardous materials
 - Shipping (including dry ice, lithium batteries, etc.)
 - Transporting hazardous materials
 - Receiving
- **Carnegie Mellon** requires training:
 - Driving university vehicles
 - Purchasing hazardous materials on P-card
 - Use of ChemTracker inventory system

Regarding safety...

- Although OSHA addresses *EMPLOYEES* only, it is the policy of EH&S to apply the same requirements to students (who are technically not covered under OSHA)
- EPA, DOT and other regulatory agencies do not differentiate between employees and non-employees

Where to Get the Training

- EH&S provides (or arranges) for MOST of this
- Go to the EH&S web page to enroll
- Many courses are on-line, other need to be requested
- Researchers ALSO need to training their people in area-specific tasks

The screenshot displays the Carnegie Mellon University Environmental Health & Safety (EH&S) website. The header includes the university name, a search bar, and navigation links for BIORAFT, MSDS, CHEMTRACKER, TRAINING CLASSES, EMERGENCY RESPONSE, and MISSION STATEMENT. The main content area is titled "ENVIRONMENTAL HEALTH & SAFETY > Training Classes" and lists various training courses offered by Env. Health and Safety, such as Accident Investigation and Reporting, AED Training, Aerial Lift Truck Safety, Asbestos Awareness, Back and Lifting Safety, Biological Safety, Blood Borne Pathogens, ChemTracker Version 4 User Introduction, Compressed Gas and Toxic Gas Procedures, Confined Space Entry, Confined Space Rescue Apparatus, Defensive Driving, DOT Hazardous Materials Receiving, DOT Security, DOT Shipping, DOT Shipping with Dry Ice, Electron Microscope Safety Training, Emergency Responders Training, Fire Extinguisher Use, Fire Prevention Safety, Forklift Safety, and Hand & Power Tools. On the left side, there is a navigation menu with links for Biological Safety, Chemical Safety, Emergency Response, Facilities and Construction Safety, Fire Safety, Occupational and Office Safety, Radiation Safety, Safety in the Arts, Environmental Waste and Recycling Programs, Directions - Where to find us, EHS Staff - Who We Are, Fact Sheets, MSDS, Newsletters, Policies, Safety Committees, and Training Classes. On the right side, there are three informational boxes: a blue box for BIORAFT stating that users should visit the BIORAFT website for online training modules and history; a purple box for non-CMU personnel stating that all EHS training courses require authentication with a CMU ID and providing contact information for summer interns or temporary personnel; and a dark grey box for administrative personnel stating that administrative personnel should contact the office for signing up multiple people from their department.

Approvals

- Given how one activity impacts another here at the university...
- And given how grant funders insist on certain things...
 - Approvals are needed throughout much of your administrative processes!

University Approvals

- EHS needs to approve the use of certain materials:
 - “terrorism” or “drug enforcement” chemicals
 - High hazard items, explosives, deadly gases, etc.
- EH&S, FMS, Student Affairs all need to approve projects or activities on university property and grounds
 - Mostly on the criteria of safety to persons or property

Agency Approvals

- Governmental funding is usually tied to special requirements and approvals
 - Department of Defense
 - Department of Energy
 - Armed Forces
- Overseas funders
 - Many have European Union or other safety or environmental, quality or other requirements or certifications.

Sign offs

- EH&S is often required to sign-off that these requirements are being met
- We need certification that they are, from the PI or lead researcher
- We also may need to prepare special plans or submittals which take time to prepare
- **PLEASE DON'T WAIT UNTIL THE LAST MINUTE FOR THESE!!!**

Facility Issues

- It is important to understand that much of the research we do needs to be done in spaces equipped and approved for the work
- CDFD, FMS and EH&S all need to be involved in creating and approving a space for research work
- In addition to the requirements for biological and radiological safety, there are requirements for safe chemical and miscellaneous material use

Facility Issues

- All areas must have a complete and accurate inventory of hazardous materials:
 - An OSHA requirement
 - A Building Code requirement
 - Available in **ChemTracker**, the university inventory system
- Areas must be outfitted with proper features
 - Ventilation, safety equipment, proper storage
 - Emergency response equipment, aisle width, exits

EH&S View

- We will try our best to allow any activity requested for research to be done, except if
 - It is illegal
 - It cannot be done safely