EMERGENCY RESPONSE IN A LABORATORY

Office of Environmental Health and Safety
Public Safety Building
578-5640

01/18/2011
PURPOSE OF TRAINING

- Provide Basics of Emergency Response.
- To Review Personal Protection Equipment Requirements.
- Improve Safety and Health in the Lab.
- Ensure Compliance with Fire Codes, University Policy, and Environmental Regulations.
Office of Environmental Health and Safety (EHS) Provides:

- Environmental and Safety Assistance
- Safety Training
- Additional Resources
  - LSU Safety Manual
  - EHS Web Page (www.ehs.lsu.edu)
BETTER THAN EMERGENCY RESPONSE

Is Prevention
PRE-PLAN YOUR WORK

- Be Aware of the Surroundings and the Potential Hazards.
- Think about what Could Happen.
- Plan for the Worst.
Personal Protective Equipment (PPE)

Always use your PPE when in the Lab.
Prevention First

Most laboratory accidents are a result of poor planning, clutter, or spilled chemicals.
Housekeeping

- A Clean, Well-maintained Work Area Improves Safety by Preventing Accidents, and
- Enhance Efficiency of Work Performed
- Laboratory Worker Responsible Include
  - Cleanliness of Personal Workspace
  - Common Areas of the Laboratory
THE BEST TIME TO PLAN FOR AN EMERGENCY?
IN AN EMERGENCY

What Do I Do?
REQUIRED ACTIONS IN AN EMERGENCY

- Do not Panic, Keep your Head
- Protect Yourself and Others
- Call LSU Police
  - 578 3231 or
  - 911 (Campus Landline)
- Let Surrounding People Know what Happened
MAJOR CONCERNS

- Chemical Spill
- Fire and Explosion
- Personnel Injury
Chemical Spills
RESPONSE TO THE SPILL DEPENDS UPON

- Amount of Chemical Spilled
- Chemical Properties
  - Flammable
  - Corrosive
  - Toxicity
- Potential for Impact Outside of the Lab
LEVEL OF SEVERITY

- Small Lab Spills (Bench top)
- Moderate Spill
  - Not Immediately Dangerous to Personnel or Property, but there is Potential for Impact Outside the Lab
- Large Spill
  - Potentially Dangerous with the Possibility of Impact Outside of the Lab.
SMALL CHEMICAL SPILL

- Can BeHandled Directly by Lab Personnel
  - If Clean Up Supplies Are Available
  - The Material has a Known Low Toxicity
  - There is No Impact Outside of Lab
- Lab Personnel Should
  - Use Proper PPE
  - Clean Up Immediately
  - Make Lab People Aware of Spill
  - Properly Disposal of Spill Material
MODERATE SPILL

- May Require EHS Assistance if
  - The Spill is Larger than Bench Top
  - There is a Chemical Hazard Issue
  - There is Impact Outside of Lab
- Lab Personnel Are Required to
  - Contain Spill if Possible
  - Call LSU Police (578-3231)
  - Make Surrounding People Aware of Spill
IT IS A LARGE SPILL IF

- A Significant Quantity of Material is Spilled.
- The material is Flammable, Toxic, or Corrosive.
- There is Potential for Impact Outside of Lab.

- Notification
  - LSU Police (578 – 3231)
  - Supervisor and Surrounding Labs
LARGE SPILLS ACTIONS

- Determine the Situation and IF Possible, Stop or Contain Source
- Call LSU Police (578 – 3231)
- Protect Yourself and Others from Exposure
- Control Ignition Sources if Flammables are Involved
- Render Appropriate First Aid
LARGE CHEMICAL SPILL
ACTIONS AS APPROPRIATE

- BEGIN EVACUATION IF NECESSARY
- Remain at a Safe Location Near the Scene
- Present Yourself to Emergency Response Personnel to Provide Information
- FOLLOW DIRECTIONS FROM EHS AND CAMPUS POLICE
FIND ADDITIONAL SPILL RESPONSE INFORMATION

- EHS Web Page (www.ehs.lsu.edu)

- Laboratory Safety
  - Laboratory Standard Operating Procedure
    - PRE-PLANNING FOR AND RESPONDING TO CHEMICAL SPILLS
FIRES AND EXPLOSIONS
FIRES AND EXPLOSIONS

- Remain Calm and DO NOT Enter a Dangerous Area
- PULL THE FIRE ALARM AND BEGIN EVACUATING THE BUILDING
- CALL LSU POLICE (578 -3231)
- Follow Direction of Floor Monitors
- Stay Out Until Police Give OK
Actions for Fire

- Pull the Fire Alarm
- Call LSU Police (578 – 3231)
- Alert People in the Area to Evacuate.
- Assist those with Disabilities.

- If you have been trained to use a fire extinguisher
  - You may put out the fire or
  - **Isolate/Evacuate** (The best option if there is any concern)
Fighting a Small Fire

- If you have been trained to use a fire extinguisher and **have a clear exit path behind you**, bring the extinguisher within six feet of the fire.

- Use the P-A-S-S procedure to activate the extinguisher:
  - **P** - Pull the **pin** located in the extinguisher's handle.
  - **A** - Aim the nozzle at the base of the fire.
  - **S** - Squeeze or press the handles together.
  - **S** - Sweep from side to side at the base of the fire.
Large Fire Response

- Pull the Fire Alarm and call LSU Police
- Alert People to Begin Evacuation
- Close Doors to Confine the Fire
- Move to your Designated Assembly Area
- Have Persons Knowledgeable about the Incident and Location Assist Emergency Personnel
- Do Not Re-enter the Building Unless the "All Clear has been Given"
LSU Art Department
Acetylene Tank Fire
Best Response Was to Evacuate and Allow Fire to Burn Out
INJURIES
INJURIES

- Check the Scene For Safety and Determine the Extent of Injury
- **CALL LSU Police (578-3132)**
  - LSU PD will Contact EMS, IF NEEDED.
  - INFORM LSUPD of Extent of Injury
  - INFORM LSUPD if Chemicals are Involved.
- Provide First Aid and CPR as Needed
- Do Not Move the Injured Unless the Situation is Unsafe. If Necessary, Move the Injured to the Nearest Safe Zone in the Building
INJURIES

- Avoid Contact with all Body Fluids
- DO NOT Leave the Accident Scene
- Assist Emergency Response Personnel
- Secure Scene for Accident Investigation
CLOTHING ON FIRE

- Drench Person With Water
- Pull Fire Alarm and Call LSU Police (578 – 3132)
- Roll Person Around on Floor to Smother the Flames
- Cover With a Fire Blanket
- Obtain medical attention, as required.
CHEMICAL SPILL ON BODY

- Flood Exposed Area with Running Water for at least 15 Minutes.
- **CALL LSU Police (578-3132)**
- Remove Contaminated Clothing. Check for Accumulation in Shoes
- Obtain Medical Attention as Required
- Report Incident to Supervisor
BIOLOGICAL SPILL ON BODY

- Remove contaminated clothing.
- Vigorously wash exposed area with soap and water for one minute.
- Obtain medical attention as required
RADIATION SPILL ON BODY

- Remove Contaminated Clothing.
- Rinse Exposed Area Thoroughly with Water.
- Obtain Medical Attention as required.
- Report Incident to Supervisor and Radiation Safety, 578-2747
HAZARDOUS MATERIAL

• Immediately Rinse Eyeball and Inner Surface of Eyelid with Water for 15 Minutes.
• Forcibly Hold Eye Open to Ensure Effective Wash Behind Eyelids.
• OBTAIN IMMEDIATE MEDICAL ATTENTION!
PUNCTURE WOUNDS AND MINOR CUTS AND WOUNDS

- Vigorously Wash Injury with Soap and Water for Several Minutes
- Obtain Medical Attention as Required
All laboratories where flammables are stored or used should have a fire extinguisher. Facility Services inspects extinguishers yearly to ensure that they are ready if needed.
SAFETY SHOWERS

The location of each safety shower and eye wash should be clearly posted. A three foot area around showers and eye washes must be left unobstructed. Laboratory personnel should inspect eyewashes weekly.
Each lab should have a first aid kit that is properly stocked for emergency first aid purposes.
All laboratories that employ hazardous chemicals must have a chemical spill kit that is capable of handling any spill in lab.
DELUXE SPILL KIT CONTENTS

- Absorbent spill pads
- Solusorb (solvent absorbent)
- Neutrasorb (neutralizes acids)
- Neutracit (Neutralizes caustics)
- 2% Wescodyne (disinfection)
- 12 inch Forceps
- Yellow Bags
- Hazardous waste labels
- Neoprene Gloves
- Safety Goggles
- Splash shield
- Scrub Suit
An inexpensive spill kit can be made with kitty litter and other items such as gloves, safety glasses, a broom, and a dust pan. Kitty litter is an excellent all-purpose absorbent and should be kept in any lab with the possibility of spills.
Summary

- Know what to do in an emergency: Call LSU Police (578 – 3132) and evacuate the room/building (for major spills);
- Know how to prevent spills of, and minimize personal exposure to, hazardous chemicals;
- Know the location, and proper use of, safety and personal protective equipment
EMERGENCY PHONE NUMBERS

LSU Police
578-3231

911 (Campus Landline)

EHS 578-5640

Radiation Safety 578-2747

Facility Services 578-2327
Goodbye from the
Happy Chemist

Questions or Concerns

Office of Environmental
Health and Safety

578-5640