Laboratory Safety at Harvard Forest (HF)

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Important Note

• This is NOT a substitute for formal lab and safety training

• You must determine with your supervisor if formal training is necessary
If Lab Safety Training is Required…

• You **must** take it at Harvard University
  
  ➢ Environmental Health & Safety (EH&S)
  
  ➢ [Training seminar schedule](#)

  ➢ Annual training at Harvard Forest (late May)

  ➢ Contact Lab Manager for other options
Emergency Response Guide

Posted near all labs

• Instructions for specific lab accidents
• Required Personal Protective Equipment (PPE) - last page

• Lab Manager (Manisha V. Patel - x248)
• Nearest Medical Center - Athol Memorial Hospital
Emergency Exits & Routes

• Locate all exits and routes out of the lab
  ➢ 4 Exits out of Torrey Bldg.
  ➢ 2 Exits out of OEB Lab (Shaler Bldg. Basement)
  ➢ 1 Exit out of Paleo Lab (Shaler Bldg. 1st Floor)
Fire Extinguishers & Alarms

• Locate nearest fire extinguisher & alarm pull station
• In case of fire
  ➢ Alert others / Pull the fire alarm
  ➢ Get out of the area/building
  ➢ Call 911

USE YOUR COMMON SENSE. YOUR SAFETY IS MORE IMPORTANT THAN PROPERTY!
First Aid Kits

There is a kit in every lab space
Accident Report Forms

Fill out Accident Report Form for ANY incident resulting in injury and/or illness

Also available in Paper form

• Torrey Bldg. - bulletin board
• Shaler Bldg. - photo copy room

For all other incidents, contact lab manager
Safety Shower

• For chemical spill, fire, etc. on person
  ➢ douse in water for at least 15 min
  ➢ remove contaminated clothing
  ➢ seek medical attention

Torrey Clean Lab

Pull metal triangle ➔

Shaler Bldg. - Paleo Lab

Use like a hose
Eyewash Station

- For any irritant to eyes
  - Irrigate eye for at least 15 min
  - Seek medical attention

Shaler Bldg. - Paleo Lab

Torrey Bldg. - Support Lab
Shaler Bldg. - OEB Lab

Torrey Bldg. - Clean Lab

Push lever down

Pull eyewash down

Swing eyewash 90° left
Minimize the risk of injury/illness!

Harvard University Laboratory PPE Policy

If you don’t know what PPE is appropriate for your experiment, consult the lab manager

If you need specific PPE and we don’t have it, contact the lab manager (and I will get it for you)
Personal Protective Equipment (PPE)

Wear appropriate PPE at all times!

- Lab coats
- Safety glasses
- Gloves
- Air masks

Updated 05/01/2012 by Manisha V. Patel
Personal Protective Equipment (PPE)

Common Uses at Harvard Forest

- Always wear long pants & closed toe shoes in the Clean (Torrey), Paleoecology, & OEB (Shaler) Labs

- Wear Lab Coat, Gloves, and Safety glasses when handling chemicals (i.e. potassium chloride) and/or working at a hood

- Use oven gloves (long orange) when handling hot materials

PPE requirements for each lab are posted on the last page of the Emergency Response Guide
Caution Signs

• Located on lab doors & chemical containers to notify you of any potential hazard

• Common caution signs

  Ethanol

  Oxygen gas

  Helium gas

  Ammonium hydroxide

  Hydrochloric Acid
Fume Hoods & BioSafety

• Fume Hood: controls exposure to hazardous materials
  – Do not block rear air slots
  – NOT a place to store equipment or chemicals

• BioSafety Cabinets
  ➢ Yellow - flammable materials
  ➢ Light Blue - acids and bases
  ➢ Dark Blue - hazardous waste
Chemicals

- All chemicals housed/brought onto Harvard Forest must be registered into the chemical registry (see How to Register a Chemical Protocol)

- Chemicals should be stored in the appropriate cabinets (i.e. acids, bases, flammable materials)

- Locations
  - Torrey Bldg. – Clean Lab
  - Shaler Bldg. – Paleo and OEB Lab
  - Field - sheds for gases (see Gas Tanks slide)

  No chemicals allowed outside of these labs
Chemicals - Labeling

- Any chemical in any container should have a proper label - chemical name, your name, date

THERE ARE MANY CLEAR LIQUIDS IN A LAB,

WATER IN A CONTAINER SHOULD BE LABELED “WATER”
Chemicals

Material Safety Data Sheets (MSDS)

• Tells you everything you need to know about a chemical

• MSDS available for all chemicals housed at Harvard Forest at (website link)

• Online links to MSDS
  ➢ ChemAdvisor
  ➢ CCOHS
Chemical Spills

Clean-up spill **only** if you know the chemical hazards, have appropriate equipment and training to do so!
Otherwise, leave area and contact Lab Manager

Spill Kits Located in
- Torrey Bldg. - Clean Lab
- Shaler Bldg.
  - Paleo Lab
  - OEB Lab
Chemical Hygiene Plan

• Part I – General Administration Information
• Part II – General Safety Practices
• Part III – Harvard Forest specific policies and protocols

Copies available in all labs
Gas Tanks

- Should be registered into the chemical registry
- Must be anchored (chain, belt) to a wall in upright position
- Regulators should be removed, caps should be in place when cylinders are not in use.

All gas tanks in the field should be securely fastened in a shed
Waste

• Trash Bin - gloves, pipette tips
• Recycle - be careful what you recycle in a lab, if in doubt, throw it in the trash
• Universal – Batteries, light bulbs, electronics (see Oscar Lacawasan)
• Glass – All lab grade glass is not recyclable (dispose of in broken glass box, even if the glass is not broken!)
• Sharps – needles, razors (special bio hazard containers located in all lab spaces)

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Updated 05/01/2012 by Manisha V. Patel
Waste – Water

• Any container with
  - non-hazardous (i.e. potassium chloride) chemical residue can be washed in a lab sink
  - hazardous chemical residue, rinseate should be collected into a container and labeled hazardous waste

All sinks drain to the industrial waste water tank. This ensures no chemicals reach the Forest ground and well water!
Waste - Hazardous

• **Satellite Accumulation Area (SAA):**
  location of waste as it is generated (Clean, Paleo & OEB Labs)
  – Must have a hazardous waste label filled out from the moment the first drop is added
  – Should have chemical name (not abbreviation)
  – Primary container should be stored in a secondary container (i.e. grey bin)

• **Main Accumulation Area (MAA):**
  Blue cabinets in Clean (Torrey) and Paleo (Shaler) Labs
  – Hazardous waste label is dated when placed in MAA
  – Container should be in a secondary container (grey bin)

See HazWaste Collection and Disposal Protocol
Housekeeping

- You **must** keep all of your work areas clean and free from obstructions.
- Make sure you clean up after completing any experiment or at the end of the day.
- Don't use aisles, hallways, and stairways as storage areas.
- Dispose of non-hazardous and hazardous materials in a timely manner.
- Clean up all spills and broken glassware **immediately**.
- Do not overcrowd outlets.
Housekeeping – Labeling

• Anything stored in any area of the lab should have the following information on it:
  ➢ Name
  ➢ Contact information (email/phone)
  ➢ Date
  ➢ Description of Item
Lab Security

• All lab doors are locked after 4:00pm
• Do not prop lab doors open for any extended amount of time
• Account for and secure all sensitive material / information.

Be Prepared
Take time to familiarize yourself with building evacuation plans/route
Housekeeping - Food

NO FOOD OR DRINK IN THE LABS!

NO FOOD OR DRINK IN LAB REFRIGERATORS
Working Alone / After Hours

• For reasons of safety and security, avoid working alone/after hours

• If you must work alone or after hours, you will need to obtain prior approval from your supervisor and/or the lab manager.

• Please see the working alone/after hours policy for more specific information
For more Information…

Laboratories at Harvard Forest

Harvard University Environmental Health & Safety

- Massachusetts Right To Know

Massachusetts Workplace Safety and Health Program

Occupational Safety and Health Administration (OSHA)
Questions...

Contact the Lab Manager

Manisha V. Patel
Office: Torrey Bldg Room 101
Phone: 978-756-6148
Email: manishapatel@fas.harvard.edu
What to Do Next…(annually)

1. Print/Obtain Lab Safety Form
2. Fill it out
3. Have your supervisor sign it
4. Return it to the Lab Manager

You are now ready to work in the labs at Harvard Forest!