

Department of Biological Sciences

Teaching Laboratory Safety Information

**This booklet should remain in room _____, immediately
above the fire extinguisher.**

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LABORATORY SAFETY PROCEDURES

1. Each student is responsible for locating each piece of safety equipment available in each laboratory. Please see the appropriate safety location sheet. First aid kits are located in the office on second floor and in the stockroom on first floor. In addition, most teaching laboratories contain a first aid kit that is located in the instructor's desk.
2. Good laboratory practice dictates that sandals or shorts should not be worn in the laboratory. Purchase of a lab coat for department majors would be a wise investment in safety.
3. MSDS (Material Safety Data Sheets) are available in each teaching and research laboratory and from the stockroom. You must use extreme care in dealing with ALL chemicals. Do not get chemicals on skin or clothing. If you do, wash them off and notify your instructor.
4. DO NOT WEAR CONTACT LENSES IN ANY LABORATORY WHERE FORMALIN WILL BE USED. It will fix your eye lens. Eye wash stations are located at either the east or west halls on all four floors of this building. If you get a chemical in your eye, ask for assistance to hold your lids open and flush the eyes until all the solution is used up. The eyewash stations are designed to operate for 15 minutes. Immediately seek medical attention after using the eyewash.
5. DO NOT POUR ANY WASTE CHEMICALS DOWN THE SINK! Place used or waste chemicals in properly labeled containers. Instructors will be responsible for procedures involving hazardous waste generation.
6. Any broken glass, razor blades, syringes and needles are to be disposed of in the appropriate containers, i.e. broken glass boxes and sharps containers. DO NOT PUT ANYTHING SHARP IN THE WASTE BASKETS!
7. Do not pipette ANYTHING by mouth. There are pipette bulbs for this purpose. Always insert the pipette into the pipettor or bulb by holding the pipette near the end being inserted and insert using a twisting motion. Never insert a pipette by holding it at the middle or tip.
8. Food and beverages should not be consumed in the laboratories, unless instructed to do so. Chewing gum in any laboratories where chemicals are used is not allowed.
9. Bunsen burner, alcohol lamps, hot plates and other laboratory equipment should be turned off or extinguished when not in use.
10. All containers of chemicals, including water MUST be labeled to prevent accidents and facilitate disposal. Include you name, date, year, name of substance, class and section number.
11. Gloves must be worn when working with specimens that have been preserved in formalin.
12. Keep long hair confined, particularly near flames.

LOCATION OF EMERGENCY EQUIPMENT -- FIRST FLOOR

1. Showers

At the end of each hallway (east and west)

On the east wall of the stockroom (rm. 193) next to the fume hood

2. Fire Blankets

Stockroom (room 193) on the wall next to the office (room 192)

Room 137--left side just inside door

Room 138--right side on east wall

Rooms 139, 151, 52, 153 --left side just inside door

3. Fire Extinguishers

Stockroom -- west wall between rooms 191 & 192

Room 137 -- On the wall just inside the door

Rooms 138, 139 -- left side, just inside the door

Room 146 (EM suite) -- right side, just inside the door

Room 151 -- left side, just inside the door(north wall)

Rooms 152, 153 -- right side, just inside the door

Room 193 -- combustible metals extinguisher behind the southwest door

Above each drinking fountain

4. Eye washes

On the wall in the east hall is an EyeSaline Portastream, which provides ANSI Standard 15 minute rinse.

5. Fire alarms

Main hall just north of the elevator and stairwell

East hall between stairwell and room 140.

6. Fire hose

Above drinking fountains in the east and west halls

7. Wheelchair -- Room 132

8. Blood and body fluid kits

Instructors' desk drawers in teaching labs.

Stockroom (193).

9. First Aid Kit

A large first aid kit is located in the Stockroom (room 193).

LOCATION OF EMERGENCY EQUIPMENT -- SECOND FLOOR

1. Showers

There are no emergency showers on the second floor. There are showers at the ends of both hall ways on the first floor.

2. Fire Blankets

Room: Stockroom west wall between rooms 191 & 192

Rooms 237, 243 -- inside left hand (west) door

Room 247 -- inside door

Rooms 250, 251 -- inside right hand (west) door

3. Fire Extinguishers

Rooms 261, 263 -- front (east) wall

Room 272 -- north wall

Front office, south of main door

4. Eye washes

There is a Portastream eyewash between the two doors to room 261.

5. Fire alarms

6. Fire hoses

Above each drinking fountain in the north and south main halls, by the vending machines in the east hall.

7. Blood and body fluid kits

All teaching labs, in a front drawer of the instructor's desk

8. First Aid Kit

A large first aid kit is located in the Stockroom (room 193)

Room 240 -- in instructor's desk

Room 251 -- inside left (east door)

Biological Sciences Office -- above sink in 228

9. Spill tamer kit

Room 261, west wall

HANDLING HUMAN BODY FLUIDS IN THE LABORATORY

You will find a plastic covered box, which is the body fluid accident kit, in the instructor's desk at the front of each teaching laboratory. It contains a biohazard bag, 2 masks, 1 pair of goggles, 2 pairs of disposable gloves, a bottle of bleach which will need to be diluted before use, 2 kwik-wipe towelettes, 2 paper towels and instructions for clean-up.

ACCIDENTAL HUMAN BODY FLUID SPILLS

If such an accident occurs in the laboratory, **do not have any contact with the person until you have donned a pair of gloves.** **If there is any possibility of splashing of moist body substances onto your mucous membranes, a mask and some eye protection must also be donned first for your protection.** For small spills, use the Kwik-wipe towelettes. For larger accidents use the concentrated bleach which must be diluted with water to the line indicated on the bottle and may be used to disinfect counters, floors or any contaminated area. This must be left for 20 minutes and then wiped up with paper towels--WEAR GLOVES!

Put all contaminated materials in the biohazard bag. The bag will be taken to the stockroom IMMEDIATELY after the clean-up and will be placed on the contamination table with a sign which reads "HUMAN CONTAMINANTS".

All such accidents should then be reported on an accident form and filed with the Laboratory Materials Supervisor (Mary Ann Stoll).

LAB EXERCISE ANALYZING HUMAN BODY FLUIDS

Whenever such laboratories are being conducted, you MUST notify the stockroom and obtain the proper containers and a bottle of disinfectant/detergent, such as Calgon Vestal, if it is not available in the teaching laboratory. Have the students wipe the laboratory countertops with the disinfectant after each lab has been completed. Use the Nalgene containers for NON disposable labware that will be contaminated; mark these containers with the sign "HUMAN CONTAMINANTS REUSABLE", which is available in the stockroom. A biohazard container and bag for human contaminants, which are disposable, is available from the stockroom.

ACCIDENT REPORT

Date of Report: _____

Name of injured person: _____

Injured person's address: _____

Injured person's phone: _____

Injured person's student or SS #: _____

CONDITIONS SURROUNDING THE ACCIDENT

Date: _____

Lab or Class: _____ Room #: _____ Time: _____

Supervisor: _____ Supervisor's Office #: _____

Nature of Accident (in your own words):

What was the response to the accident? What first aid was administered?

Follow up:

Name of person filing report: _____ Title: _____

Signature: _____

HANDLING CARCINOGENS

ALL CHEMICALS WITH CARCINOGEN LABELS MUST BE WEIGHED OUT UNDER THE HOOD. USE THE FOLLOWING PROCEDURE:

1. Obtain a pair of disposable gloves, a dust/mist respirator, a plastic bag with tie and weigh boat, all of which will be disposed of when the project is completed.
2. Obtain a proper scale for weighing, spatulas, stir bar, glassware, damp paper toweling (for clean-up), and a pan of soapy distilled water (for contaminated glassware), then place all items in the hood. Turn the hood fan and light on, and drop hood sash to a comfortable working height, if possible.
3. Put on the respirator mask and the disposable gloves. THESE ARE NOT TO BE REMOVED UNTIL THE PROJECT IS COMPLETED.
4. Weigh out needed amount of chemical and place in a container, i.e. flask, bottle, etc. Add the proper liquid, dissolve and mix on the stir plate. Do not put any chemically contaminated items down on the hood surface. Place them in the disposal pan and submerge them.
5. DO NOT LEAVE THE HOOD AREA UNTIL EVERYTHING IS COMPLETED AND YOU HAVE CLEANED UP THE WORK AREA. Wipe off the chemical bottle, hood area and scale with the damp paper toweling. Place paper toweling in the plastic disposal bag.
6. Remove disposal pan to the sink and wash out all glass, spatulas, stir bar, etc. Empty the pan and rinse it out. Rinse all glassware with distilled water and place on the dirty glassware table.
7. Remove respirator and place in the disposal bag. Remove gloves by inverting them from the cuff. Discard them into the disposal bag. Seal the bag and take outside to the garbage cans.

INSTRUCTIONS FOR MERCURY SPILL CLEAN-UP

When liquid mercury spills, it tends to divide into small globules. The greater the number of these globules, the more vapor will be released into the air. Therefore, it is important not to use clean-up methods that would tend to break the mercury into smaller droplets. All mercury spills, even a broken thermometer, should be cleaned up immediately.

A mercury spill clean-up kit is located in the bottom left hand side of the stockroom hood.

1. Cover all visible mercury with Merconvap. Then treat all surrounding area with additional Merconvap. The mercury will react with the Merconvap lowering the vapor pressure of the mercury below the unsafe level.
2. Don gloves.
3. Use the mercury sweeper to scoop droplets into the center of the spill. Immediately repeat this procedure if mercury spill is in an area where sweeper can be used.
4. Scoop collected droplets into a glass jar with a tight fitting lid. Clean scoop with additional Merconvap poured onto merconwipes and add these to the glass jar.
5. If spill occurs in an area where it can not be retrieved, Merconspray can be used.
6. Surfaces should then be sprayed and wiped with Merconspray.
7. If the mercury spill is a large one or one with many droplets, you should also don a mercury vapor respirator.
8. Use Mercury Indicator to determine if any mercury or mercury vapor still remains. Sprinkle a thin opaque layer over suspect area and leave for 24hrs. Pink or black spots will develop directly over any contaminated area within 5 minutes up to 24 hrs. Repeat treatment if still contaminated.
9. If spill is in an area where the sweeper can not be used, we have another product called Hg absorb which can be used.

USED CHEMICALS & CHEMICAL WASTE

<p style="text-align: center;">Used Chemical</p> <p>Biological Sciences Department Chemical Description</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Total amount _____</p> <p>Physical state _____</p> <p>Room number _____</p> <p>Biology class _____</p> <p>Instructor</p>
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<p style="text-align: center;">Used Chemical</p> <p>Biological Sciences Department Chemical Description</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Total amount _____</p> <p>Physical state _____</p> <p>Room number _____</p> <p>Biology class _____</p> <p>Instructor</p>
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Put one copy of this label on the container, and turn in a second copy to the Stockroom.

FIELD SAFETY

1. Make sure the faculty member responsible for the laboratory knows where you will be going. Make sure Tammy, Connie, or Sandy knows where you will be going.
2. If you are taking students into the field check out a cell phone (from Pam Christensen, LS 117) and take it with you. These phones are for emergency use only.
3. If you are taking students into the field check out a first aid kit from the Stockroom Prep Room.
4. Anyone driving an ISU vehicle must sign a Student Driver Certification form and leave it on file in the Biological Sciences office. This includes any students in class laboratories who will be driving on field trips.
5. If you will be stopping along any roadside take at least one traffic cone for each vehicle, and place those cones behind the vehicle as soon as you stop.