

University of Portland 

University of Portland Laboratory Safety Manual

Prepared by Environmental Health & Safety
Version 1 January 2020

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GENERAL INFORMATION AND ORGANIZATION

The Laboratory Safety Manual is intended to be a resource for information, guidelines, policies, and procedures that will enable and encourage safe research and to eliminate, or reduce, the potential for exposure to various hazards. The information presented here also reflects the requirements and guidelines of federal and state regulations.

This manual is applicable to all laboratory, research, teaching, service, and support activities conducted in laboratories at the University of Portland. The policies and procedures in this manual apply at all laboratory locations at the University of Portland. Any laboratory that meets the definition of a chemical laboratory must adhere to the Chemical Hygiene Plan. Laboratories that do not meet the definition of a chemical laboratory may refer to this manual for general safety information but must comply with industry regulations concerning chemical management.

The EH&S website, www.up.edu/ehs, contains information about Environmental Health and Safety policies for all University of Portland work areas.

IMPORTANT CONTACT INFORMATION

Department	Contact
Public Safety	Dispatch publicsafety@up.edu 503) 943-7161
Environmental Health & Safety	Sarah Schmits Environmental Health & Safety Officer ehs@up.edu (503)943-8973
Chemistry	Susan Lair Science Lab Coordinator Radiation Safety Officer/ Chemical Hygiene Officer lair@up.edu 503 943-7746

ROLES AND RESPONSIBILITIES

UNIVERSITY OFFICERS AND ADMINISTRATION

University of Portland is ultimately responsible for ensuring a safe, healthful, and environmentally responsible workplace, facilities and campus.

To maintain regulatory compliance and to protect employees from hazards, University of Portland must:

- Maintain a written Chemical Hygiene Plan
- Maintain a written Hazard Communication Plan
- Maintain a written Regulated Waste Management Plan
- Appoint a Chemical Hygiene Officer
- Appoint a Biological Safety Officer for the institution.
- Ensure appropriate training is provided to all employees working with hazards

- Ensure compliance with all federal and state regulations including but not limited to Occupational Safety and Health Administration, National Institute for Occupational Safety and Health, National Fire Protection Association, American Chemical Society, Environmental Protection Agency, Department of Transportation, Department of Energy, Oregon Department of Environmental Quality, and Oregon Fire Code.

ENVIRONMENTAL HEALTH & SAFETY

Responsibilities of Environmental Health & Safety (EHS) include:

- Provide guidance on lab safety inspections and laboratory safety to laboratory personnel.
- Provide technical guidance on University policies and programs to laboratory personnel. This includes but is not limited to the Hazard Communication Plan, Chemical Hygiene Plan, Regulated Waste Management Program, Bloodborne Pathogens Plan, and Respiratory Protection Plan.
- Review the Chemical Hygiene Plan and Hazard Communication Plan and update as necessary to remain current with regulatory requirements.
- Oversee the training of laboratory personnel in all mandated University policies and programs.
- Maintain records of safety training documentation, accident investigation forms, and safety equipment certifications such as annual chemical fume hood certifications.
- Oversee and arrange for the monitoring of student and worker exposures to hazardous materials as defined by the Standard.
- Ensure the University Safety Data Sheets system is accessible to all students and employees 24 hours/day.
- Review and monitor the safe disposal of hazardous materials according to appropriate federal and state regulations.
- Conduct annual inspections of all areas covered by this plan and following up on corrective actions.
- Maintaining knowledge of the current legal requirements concerning regulated substances.
- Promote compliance with all federal and state regulations included but not limited to the Occupational Safety and Health Administration, National Institute for Occupational Safety and Health, National Fire Protection Association, American Chemical Society, Environmental Protection Agency, Department of Transportation, Department of Energy, Oregon Department of Environmental Quality, and Oregon Fire Code.

DEPARTMENT LABORATORY PERSONNEL

The department directors, faculty, and staff are responsible for the safe maintenance of laboratories and safe performance of day-to-day work with hazardous chemicals and substances within their respective work areas. Department directors, faculty, and staff (hereinafter Laboratory Personnel) must:

- Adhere to all University policies regarding laboratory management, including but not limited to the Laboratory Safety Manual, the Chemical Hygiene Plan, and the Regulated Waste Management Plan.
- Follow all laboratory practices, protocols, and comply with all applicable policies, procedures, and guidelines.
- Adhere to approved emergency plans for handling accidental spills and personnel contamination.

- Follow documented lab or work procedures and operating equipment in accordance with the manufacturer's and University of Portland's specifications and SOPs.
- Ensure Personal Protective Equipment (PPE) is provided and used in laboratories as required.
- Ensure compliance with state and federal regulations and fire code as directed by EHS.
- Know the location of safety and emergency equipment and how to operate it.
- Maintain personal work areas in accordance with housekeeping guidelines.
- Supervise laboratory personnel to ensure that the required safety practices and techniques are employed. Correct work errors and conditions that may result in accidents, injuries, or the release of biohazards.
- Ensure that all laboratory personnel are aware of, and familiar with, emergency procedures and the proper use of emergency equipment. Fully comprehend all hazardous chemicals, biohazards and select agents and toxins being used in the lab and the potential risks associated with exposure, as well as fully understand the associated emergency response procedures.
- Participate in appropriate training and instruction to ensure training in all safety policies and protocols.
- Instruct, train and supervise laboratory personnel/students in laboratory practices and techniques required to ensure safety, and procedures for dealing with spills or potential exposures to hazardous materials
- Place defective or unsafe equipment out of service and arrange for servicing of equipment with department staff.
- Maintain an up-to-date chemical inventory, obtain SDS data for chemicals used in their laboratory, and ensure that hazardous materials are handled, stored, transported, and disposed of in the correct manner.
- Use hazardous chemicals in a manner that prevents exposure via inhalation, ingestion, injection and skin absorption.
- Develop specific standard operating procedures for hazards used in laboratories when required.
- Comply with permit and shipping requirements for all hazardous materials.
- Report all incidents (security incidents, accidents, spills, contamination) within their area of supervision and submit accident information to EHS and Public Safety.

CONTRACTORS

All University of Portland personnel utilizing outside contractors are responsible for ensuring that the contractor is informed of relevant information related to safety.

REQUIRED TRAINING AT UNIVERSITY OF PORTLAND

Depending on your role and exposure risks, you may be required to complete in person or online training sessions conducted by Environmental Health & Safety. Laboratory Personnel must complete chemical safety and hazard communication training and when relevant, bloodborne pathogens training. If you have any questions about trainings, contact the Environmental Health & Safety Officer at ehs@up.edu.

In addition, students, faculty, and employees must be provided area-specific training on the hazards to which they may be exposed and the means to avoid these hazards. Training must be updated when a new hazard is introduced into the work place. EHS can provide assistance in the development of this training and ensuring that training is provided to all laboratory students and employees. At a minimum, area-specific training must include:

- Requirements of applicable health and safety standards at UP and where employees can access copies of such documents.
- Operations in their work area where hazardous substances/agents are present
- Emergency and first aid procedures .
- Location and availability of the University Chemical Hygiene Plan.
- Location of SDSs/MSDS forms.
- How to read labels and review SDS/MSDSs to obtain appropriate hazard information
- How to react to a chemical spill, leak, or other exposure and how to use emergency equipment
- Methods or techniques students and employees may use to determine the presence or release of hazardous substances/agents in the work area.
- Types of controls (ventilation, chemical fume hoods, personal protective equipment, etc.) used to control or minimize exposure to hazardous substances/agents.
- Review of Standard Operating Procedures if required.

Training documentation should be completed and stored for at least 3 years. All laboratory safety training documentation should be forwarded to EHS at ehs@up.edu.

HAZARD COMMUNICATION AND CHEMICAL HYGIENE

The University of Portland is required to provide a Chemical Hygiene Plan (CHP) to provide guidance for the control of potentially hazardous occupational exposures to chemical and physical agents in the laboratories of the University of Portland. Any employee using hazardous chemicals on campus should receive training in the University's Chemical Hygiene Plan and Hazard Communication Program. Consult the EHS officer for specifics.

Consult the University of Portland Hazard Communication Plan and the University of Portland Chemical Hygiene Plan for further information.

BLOODBORNE PATHOGEN TRAINING

Bloodborne pathogens are diseases and microorganisms that are transferred via blood or other potentially infectious material. It is the policy at the University of Portland that only employees that have been trained in the bloodborne pathogen plan are to handle or cleanup any infectious material. Training is required annually by all designated laboratory personnel working with human blood. Contact EHS if you are uncertain whether you or your staff/students require this training. The targeted pathogens covered in this training specifically include, but are not limited to, Hepatitis B (HBV), hepatitis C, and human immunodeficiency virus (HIV).

Follow these guidelines related to bodily fluid exposure:

1. Report known or suspected contact with human bodily fluids, pathogens, and other potentially infectious materials to the Public Safety Office (x7161) as soon as possible.
2. Use Universal Precautions: Treat all bodily fluids, animals parts, and other potentially contaminated materials as if they were contaminated with a pathogen or infectious material.

IF YOU ARE EXPOSED TO BLOOD:

Notify your supervisor and contact Public Safety and EHS immediately. You will be required to fill out an exposure report form available at the Public Safety office.

CPR TRAINING

CPR training is offered through the Red Cross at the University. If your position requires you to know CPR, contact your EHS to schedule training.

RESPIRATORY PROTECTION PROGRAM

A respirator is a device designed to protect the wearer from inhaling hazardous atmosphere matter such as dust, airborne microorganisms, or hazardous fumes, vapors, or gases. If a respirator is required for any job you may do, OSHA requires evaluation by a physician, a fitting session (called a FIT test), and training. In order to complete a respirator FIT test you must complete the OSHA mandated Respirator Medical Evaluation Questionnaire and have it evaluated by a health professional. The health professional may recommend a medical evaluation by a licensed physician before an employee is eligible to wear a respirator. A respirator is only as good as it's fit. A respirator that does not fit properly will look the same as one that does, so it is critical that a respirator FIT test be performed.

In order to wear a respirator on the job, an employee must complete Respiratory Protection Program training. Contact EHS to schedule a training.

Air purifying respirators must be used to protect against the following airborne contaminants:

- Organic Vapor
- Acid Gas
- Radionuclides
- Pesticides
- Toxic Dusts
- Chlorine Gas

OSHA requires employers to meet certain obligations for workers who voluntarily wear respirators on the job. If you use a voluntary respirator such as an N95 classified dust mask you must fill out OSHA's voluntary respirator Appendix D form. This document must be on file with the EHS office. Appendix D advises you:

- to read and follow the manufacturer's instructions provided with the respirator. These instructions include information on how to properly use, maintain, and care for the respirator, along with warnings on the capabilities and limitations of the respirator;
- to choose respirators that have been certified by NIOSH for protection against the contaminant of concern;
- to keep track of your respirator so that you do not use someone else's respirator by mistake; and
- not to wear your respirator in areas with contaminants that the respirator is not designed to protect against. For example, remember that a particulate respirator does not protect you against gases, vapors and the non-particulate components of fumes, mists, fogs, smoke and sprays.

Voluntary use is only permitted when it has been determined that there is no airborne hazard that would require the use of a respirator. If you are unsure if there is an airborne hazard in your laboratory, please contact EHS. Consult the University of Portland Respiratory Protection Program for further information.

In some applications, researchers at the University use low levels of radiation. Areas where radiation research is conducted are properly marked with signage. The University of Portland's radioisotope work is covered under a State of Oregon Broad Scope C License. To work with radiation, you must complete radiation safety training at OHSU. The University of Portland has a designated Radiation Safety Officer, which manages the radiation license and communicates to users about the use and storage of radiation on campus.

Please contact the Radiation Safety Officer to arrange training and to apply to work with radioactive materials.

GENERAL SAFETY IN THE LABORATORY

GENERAL SAFETY GUIDELINES

Safety takes precedence over all other considerations when working in the laboratory. Laboratory Personnel must be leaders in safety: teaching safety to students, continuously promoting safety, demonstrating the importance of safety through their actions, and accepting responsibility for safety.

Laboratory safety education and training is an ongoing process and therefore must be integrated into every laboratory course or project.

Standard Safety Guidelines in all Laboratories at University of Portland are listed below:

Washing Hands:

Wash hands well with soap and warm water after removing gloves and before leaving the laboratory area. Never wash with organic solvents.

Food & Drink:

Food and drink consumption in the laboratory increases the chance of exposure to chemicals. Consumables are prohibited from being stored, prepared, or consumed in University laboratories. The only exception is for food and beverages used in research and teaching projects, which must be labeled "Not for Human Consumption."

- Glassware/utensils: glassware and utensils used in the laboratory must never be used to prepare or consume food or beverages
- Laboratory refrigerators, ice chests, cold rooms, or freezers are not allowed for storage of food for human consumption
- Laboratory microwaves or heating devices are not allowed for preparation of food or beverage for human consumption
- Do not eat, drink, smoke, chew gum, apply cosmetics, or take medicine in laboratories where hazardous materials are handled or stored.
- Do not use laboratory water sources or deionized laboratory water for drinking water.

Housekeeping:

Laboratory bench tops and other work surfaces should be kept clean and free of clutter, allowing enough space to safely execute procedures. Aisles and egress routes must be clear to allow for prompt evacuation in the event of a spill, fire, or other emergency.

The following housekeeping procedures must be maintained at all times:

- Flammable materials kept away from ignition sources
- Incompatible materials and chemicals must be separated
- Emergency equipment and supplies (eyewash, shower, spill kit, fire extinguisher) readily accessible
- Fume hoods uncluttered
- Orderly chemical storage
- Chemical labels complete, legible, and visible when stored
- Limited use of the floor for storage; avoid trip hazards
- Clean work surfaces
- Sinks should remain clear of clutter

Doors:

Doors to laboratories and chemical areas should remain closed when not actively in use. Fire rated walls and doors serve to compartmentalize the building into smaller fire zones and provide safe exit passage in the event of a fire. Lab doors help maintain proper functioning of the building ventilation system. Lab and chemical use areas are designed to sit at a negative pressure to keep contaminants within the space and protect surrounding areas. Propping open laboratory doors defeats the fire safety and ventilation design.

Electrical Panels:

Electrical panel access must not be obstructed. All electrical equipment must be on a table, desk, bench top, or other raised surface and should not be on the floor.

Hazard Warning Signs:

Warning signs and labels should be posted in areas or on equipment where special or unusual hazards exist, such as biohazards, lasers, radiofrequency, high voltage, restricted access, etc. These signs may be mandatory depending on the degree of the hazard. These signs may provide information such as emergency contact information, required measures of PPE, or prohibited behavior. It is the responsibility of the faculty and staff of a laboratory to ensure adequate signage of the lab.

The American Chemical (ASC) Guidelines recommend that all Laboratory Personnel follow this safety approach:

- Recognize Hazards**
- Assess Hazard Risks**
- Minimize Hazard Risks**
- Prepare for Emergencies**

APPROPRIATE CLOTHING & PERSONAL PROTECTIVE EQUIPMENT (PPE)

The use of appropriate clothing and Personal Protective Equipment (PPE) is essential to safety in the lab environment. The following guidelines are to be followed by all Laboratory Personnel in University of Portland laboratories. Laboratory Personnel may be asked to cease activity and leave the lab if they fail to adhere to these guidelines regarding appropriate clothing and PPE.

APPROPRIATE CLOTHING

Appropriate clothing must be worn in laboratories. Wearing the correct clothing can reduce the dangers of spills, splashes, and burns. The following clothing guidelines are imperative when working in a laboratory.

Laboratory Appropriate Clothing includes:

- Close toed shoes – no sandals, no flip flops
- Long pants – clothing should fully cover your legs

It is also important to avoid loose clothing, jewelry, or scarves that can be caught on equipment. Long hair should be pulled back so that it does not come in contact with equipment or chemicals. Shirts should have tight-fitting long sleeves and pants/slacks with socks that cover your ankles.

It is the responsibility of laboratory staff and faculty to ensure that all Laboratory Personnel including students wear appropriate clothing in the laboratory. For labs where only data analysis or other computational work is performed, and no hazardous materials are present, the above appropriate guidelines do not apply. Faculty and staff must use their discretion to determine the appropriate attire for a laboratory setting. Contact EHS for questions regarding appropriate laboratory attire.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Personal Protective Equipment, or PPE, is equipment worn to minimize hazard exposure that can cause serious workplace injuries or illnesses. PPE commonly used in labs include gloves, lab coats, foot protection, safety glasses, hearing protection, and masks. The type of laboratory or equipment in use will dictate the type of PPE required. Principal investigators, laboratory managers, and staff are required to assess the exposure hazards and risks based on the procedures performed in the laboratory and determine the appropriate PPE for the laboratory. Faculty and staff working in UP laboratories are responsible for ensuring that employees and students they supervise are properly trained in how to use PPE. If PPE is required, the University must provide it at no cost to an employee. Students may be responsible for purchasing their own required PPE.

Refer to the University of Portland Radiation Safety Handbook for PPE precautions when working with or near radiological chemicals.

Gloves:

Gloves are required for any hand contact with hazardous chemicals, cultures, blood, microorganisms, animals, and potentially contaminated equipment. Gloves are required when handling hazardous waste or cleaning up laboratory spills. Gloves should never be reused.

There are many types of gloves to use for different activities. It is important to select the appropriate type of gloves for the work being done. Due to latex allergies, the University does not use latex gloves. The gloves commonly used in UP laboratories include:

- Nitrile gloves – nitrile protects against solvents, harsh chemicals, fats and petroleum products. Nitrile gloves should be used when handling hazardous chemicals or waste.
- Rubber gloves
- Cut-resistant gloves
- Chainsaw gloves
- Heat-resistant gloves

- Cold resistant gloves

There are several important rules you should follow when using gloves in a laboratory:

- If your gloves become contaminated, remove and replace them. Discard used gloves and never attempt to wash and reuse gloves. Replace contaminated gloves
- Remove gloves inside out without touching the contaminated surface of the glove
- If the gloves you are using have been in contact with hazardous materials, place them in hazardous waste bins rather than in regular trash bins
- Remove gloves before leaving the laboratory
- Do not touch common areas such as door knobs, elevator buttons, etc. with gloved hands

Lab Coats:

Lab Coats are required in some UP laboratories. Lab coats provide a barrier between your clothing and/or skin and hazardous materials. It is the responsibility of lab faculty and staff to ensure that Laboratory Personnel are wearing lab coats when needed. Lab coats should only be worn in the lab and not in public areas where contamination could occur. If lab coats are contaminated with hazardous chemicals, they should be removed immediately. Lab coats are required whenever working with hazardous substances or biological agents (BSL2).

Safety Glasses:

Safety Glasses should be worn at all times when working with chemicals, or anytime there is potential impact into the eye area. In some UP laboratories you may be required to wear safety glasses. If this is the case, signs will indicate this requirement and safety glasses will be available at the lab entrance. The following are important guidelines to consider when using safety glasses.

- Proper laboratory eye protection has side splash protection from every angle
- Safety glasses should be American National Standards Institute (ANSI) rated safety glasses
- Eyeglasses are not safety glasses
- Wear safety glasses for any laboratory projects that involve drilling, gluing, hammering, or activities that cause any material to spray or fly up from your work area

Dust Masks:

Dust Masks are flexible pads that should be held over the nose and mouth by elastic or rubber straps to protect against dusts encountered during procedures or while using equipment. Projects generating dust should be done with adequate ventilation and vacuuming to prevent the spread of dust. Dust masks should not be shared between individuals but can be used more than one time by a single individual. If using an N95 dust mask, you must complete the OSHA form Appendix D indicating voluntary use of a respirator (see the Respiratory Protection Program).

Hearing Protection:

Certain lab facilities or activities can produce excess noise in which hearing protection should be provided. Excess noise levels should be reported to EHS for proper noise hazard assessment. Noise levels above 85 decibels for extended periods of time can lead to potential hearing loss. Hearing protection should be available to laboratory users or occupants who may be or are exposed to noise levels above 85 decibels. Ear protection can include ear muffs, earplugs, and canal claps.

When possible, equipment that produces irritating noise and vibration should be replaced with equipment designed to produce less noise and vibration. If equipment is producing noise at a level that requires individuals to raise their voice to be heard while standing next to others, potentially hazardous

noise levels are being produced. Contact EHS to have noise levels of a particular laboratory space evaluated. Equipment should not be purchased that produces noise levels greater than 80 decibels without written approval from EHS.

PPE OUTSIDE THE LABORATORY

In public areas, such as hallways and lounges, wearing personal protective clothing and equipment is not recommended due to the possibility of contamination. If transporting a hazardous chemical from one laboratory to another, it is recommended to use a cart to avoid handling the chemical directly.

LAUNDERING LAB COATS & CONTAMINATED CLOTHING

Contaminated clothing or lab coats with mild chemical or biological contamination should be laundered separately from other clothes using one of the following methods:

- A professional service company is used to wash contaminated lab coats in the Biology department. Contact the Biology Lab Manager with further questions.
- Contaminated Clothing. Clothing that is contaminated with blood, blood products, or other bodily fluids must be removed and contained in leak-proof bags or boxes at the location where it was used. Containers or bags must be marked with the biohazard symbol. Contaminated clothing may not be sorted or rinsed in the location of use, and may never be sent home with for personal laundering. Clothing that is overtly contaminated with chemicals must be disposed as hazardous waste. Clothing contaminated with radiological material must be disposed as radiological waste.

EMERGENCY PROCEDURES

Emergencies can come without warning at any time. Being prepared to handle an emergency incident is an individual and organizational responsibility. The Department of Public Safety has developed an Emergency Guidebook to assist with in minimizing the effects of such events. The Emergency Guidebook is located inside every laboratory by one of the primary exit doors. In addition, emergency equipment is located in campus laboratories.

Emergency Phones:

- Emergency Phones are located in most laboratories or laboratory hallways
- To contact Public Safety dial x4444
- Many campus hallways have emergency landlines on the wall.

Emergency Exits:

- Always locate any exits from any building you are in including stairs, windows, or fire escape ladders
- Elevators are not to be used in the event of a fire or natural disaster such as an earthquake. If alarm systems are activated, the doors in front of the elevators will close
- Access to exits including emergency exits must never be blocked. Storage, even temporary storage, and equipment must not block doorways, corridors, aisles, and stairways

FIRE SAFETY

Fire is one of the most serious hazards that one faces in a laboratory. You must be prepared to deal with a fire emergency should it occur. Faculty and Staff are responsible for knowing fire evacuation routes, the locations of fire extinguishers, and locations of fire alarm pull stations in their laboratory building. Faculty and Staff should provide guidance to students on fire safety.

In the event of a fire, call 911 and then call Public Safety. Activate the alarm system and evacuate as soon as possible.

Fire Alarms:

- If a fire alarm sounds while you are working in a laboratory safely shut down any machines you are operating and exit the building immediately
- Do not stop to collect personal belongings.
- Wait outside and a safe distance away from the building until you are given permission to return
- Remember to treat all alarms like a real emergency. Do not assume it is a false alarm.

Evacuation routes are posted in every hallway. Faculty and Staff are responsible for knowing the proper evacuation route from a lab space and directing students and other Laboratory Personnel to evacuate safely.

Stairway Doors: Stairways act as a barrier system to restrict fire and smoke from exit ways. Do not block stairway doors open, which would allow fire and smoke to fill the escape route if a fire occurs.

Unobstructed Corridors:

- Clear exit corridors are a basic requirement for a quick exit from a burning, smoke filled, or earthquake-damaged building.
- Hallways are not to be used as storage areas
- Hallway obstructions seriously hinder or prevent personnel from exiting a building quickly and easily during emergencies

Elevators:

- Stairways should be used for exiting upper floors of a building during an emergency
- Do not attempt to use the elevator during a fire

If you are unable to exit a building, the safest place of refuge during a fire is a stair enclosure if contact can be made with rescue personnel. If your clothing is on fire, STOP, DROP, and ROLL on the ground to extinguish the flames. If you are within a few feet of a safety shower, use this to douse the flames. If you are trapped in a room due to a fire, place a cloth material around or under the door to prevent smoke from entering the room. Retreat and close as many doors as possible and prepare to signal to authorities from the window.

FIRE PROTECTION EQUIPMENT

Fire blankets: Fire Blankets should only be used to smother small fires such as paraffin or wax fires.

Fire extinguishers: Fire extinguishers are found in laboratory building hallways as well as in some laboratories. Make sure you and the personnel working in your laboratory know where the nearest fire extinguisher is located. Fire extinguishers are located in obvious, easy to notice areas of the laboratory.

University employees should not use a fire extinguisher unless they have been formally trained in the proper operation of extinguisher use. If you would like to be trained on how to use a fire extinguisher, please contact EHS. Individuals who have been trained in the principles of fire extinguisher use and the hazards involved may attempt to extinguish small and early stage fires if there is an escape route.

Fire extinguishers are inspected monthly and serviced annually. If a fire extinguisher is out of date or missing contact EHS.

EMERGENCY EYEWASH & SAFETY SHOWERS

Emergency Eyewash Stations: Eyewash stations are required if a laboratory uses corrosives (acids and caustics) strong irritants, and toxic materials that can be absorbed into the skin. Emergency Eyewash facilities must be accessible (unobstructed) and personnel should be able to reach eyewash equipment within 10 seconds (approximately 50 feet). Equipment must be accessible at all times without requiring a key or access through other security guards. All Laboratory Personnel, including students, should know where the nearest eyewash station is in proximity to their workspace.

An eyewash station provides a soft stream of aerated water. In the event of an eye emergency:

- Hold your eyes open and flush them for 10-15 minutes to get the material or chemical out of your eyes. Eyelids must be forcibly held open in order to ensure enough water is able to reach the eyes.
- Contact lenses must be removed in the event you must use an eyewash station

Eyewash stations must be flushed weekly by laboratory staff to ensure they are operating correctly.

Emergency Safety Showers: Safety showers must be provided in areas where a corrosive chemical or fire hazard exists, for immediate first aid treatment of chemical splashes and for extinguishing clothing fires. Laboratory Personnel should know the location and how to use emergency safety showers. Laboratory Personnel should be able to reach an emergency safety shower within 10 seconds of an incident. Always keep the path to a safety shower clear.

If an eyewash station or safety shower is used, you must fill out an incident report and contact Public Safety. Faulty equipment shall be reported to EHS.

EMERGENCY RESPONSE

Faculty must be aware of the provisions for emergency procedures and preparedness. Each laboratory should have a written emergency plan specifying the appropriate response to potential emergencies. Accidents and spills of infectious materials will be discussed in Emergency Procedures below. In addition, each principal investigator will submit to EH&S the following:

- A completed Incident Report
- An annual chemical and biological inventory.
- A Health Hazard Assessment for each biological agent and toxin stored or used in the laboratory.

MEDICAL EMERGENCIES

If a medical emergency requires immediate medical attention or is life threatening, call 911 and then the Public Safety Office immediately. If it appears that the patient should not be moved wait for Public

Safety or 911 officials to arrive In all cases, report medical emergencies and hospitalizations as soon as possible to public safety. Public safety will notify the required administrative officer.

On Campus: Call the public safety office x7161 or x4444. Give the exact location of the victim and description of the injury.

Off Campus: Call the public safety office at 503-943-7133 or call 911. Give exact location of the victim and description of the injury. This is important because Public Safety has a record of all emergency contact numbers for UP students and employees.

Emergencies after Normal Business Hours: Public Safety is open 24 hours, seven days a week. Call public safety at 503-943-7161 or 503-943-4444. If you have been injured while working for the University, contact your supervisor. When injured at work you must fill out a Report of Injury form (on the HR website) within 24 hours of the incident.

MAINTENANCE EMERGENCIES

Laboratory Personnel are responsible for providing a clean and unobstructed work area for all maintenance and service personnel. Floors should be cleaned regularly and kept free of obstructions. If facility workers need to service an area or equipment in a laboratory, Laboratory Personnel must ensure the area/equipment is emptied of chemicals and decontaminated.

EMERGENCY MAINTENANCE REQUESTS

Emergencies (e.g. major utility failures, gas leaks, floods, etc.) should be reported immediately.

Physical Plant (work hours)	503) 943-7306
Public Safety (after work hours)	(503) 943-7161

NON-EMERGENCY MAINTENANCE REQUESTS

The Physical plant online *iServiceDesk* can be used to submit requests. Link is found available at:<http://www.up.edu/physicalplant/default.aspx?cid=5268&pid=1143&gd=yes> Either click the *iServiceDesk* button to the right of this page or enter *work request* into the webpage's URL. Once there, just follow the prompts.

FIRST AID

Oregon OSHA regulations require first aid supplies to be available in all work areas for the immediate treatment of minor injuries. Every laboratory should have a first aid kit designated for that laboratory. All individuals working in University of Portland laboratories must know where the laboratory first aid kit is located and inform students where these kits are. First aid supplies must be stored in clearly marked containers and adequately protected from damage and contamination.

Each department is responsible for maintaining first aid kits for their laboratories. first aid kit maintenance should be assigned to one individual, and first aid kits should be inspected monthly. First aid kit supplies should be replenished when necessary.

Some basic First Aid Guidelines to follow are listed below:

- When assisting with a first aid emergency, always wear gloves to protect yourself from being injured or exposed.
- Strong acid or base burns should be placed under running water for at least 15 minutes to flush away the corrosive substance.
- For sharps accidents, cuts, or abrasions, cleanse the wound with soap and water, treat with antiseptic from the First Aid Kit, and then seek medical attention if necessary
- First aid kits are not meant to replace proper medical care, and all injuries must be reported

EXPOSURE TO BIOHAZARDS

In the event of an exposure to a hazardous chemical or biohazard, the following guidelines should be used:

INTACT SKIN

1. Remove contaminated clothing. Clothing should not be pulled over the face as contact with eyes, nose, and mouth may occur. Shirts should be cut off.
2. Vigorously wash contaminated skin for 1 minute with soap and water.
3. Call public safety or 911 or seek medical attention if necessary.
4. Inform the laboratory's principal investigator, Public Safety, and EHS.

BROKEN, CUT OR DAMAGED SKIN OR PUNCTURE WOUND

1. Remove contaminated clothing. Clothing should not be pulled over the face as contact with eyes, nose, and mouth may occur. Shirts should be cut off.
2. Vigorously wash contaminated skin for 5 minutes with soap and water.
3. Call Public Safety or 911 or seek medical attention if necessary.
4. Inform the laboratory's principal investigator, Public Safety, and EHS.

EYES

1. Immediately flush eyes for at least 15 minutes with water, using an eyewash. Hold eyelids away from your eyeball and rotate your eyes so that all surfaces may be washed thoroughly.
2. Remove contaminated clothing. Clothing should not be pulled over the face as contact with eyes, nose, and mouth may occur. Shirts should be cut off.
3. Call public safety or 911 or seek medical attention if necessary.
4. Inform the laboratory's principal investigator, Public Safety, and EHS.

INGESTION OR INHALATION

1. Move to fresh air immediately.
2. Call public safety or 911 or seek medical attention at the UP Health Services, if necessary.
3. Do not induce vomiting unless advised to do so by a health care provider.
4. Inform the laboratory's principal investigator, Public Safety, and EHS.

REPORTING INCIDENTS

If you or another person is injured, call Public Safety immediately to report the incident at 503.943.4444. Additionally, notify the direct supervisor of the injured employee. The employee will fill out and complete an 801 Form located on the HR website. Human Resources will then contact the Environmental Health and Safety Officer for an Incident Investigation.

University of Portland provides workers compensation insurance for employees injured while on the job and in fulfillment of regularly assigned duties. Employees are required to report all job-related accidents or injuries to their supervisor immediately and to complete all necessary paperwork associated with the accident or injury. UP will promptly investigate all student- or employee-reported incidents/accidents in which there is a possibility of student or employee overexposure to a hazardous chemical, biohazard, or physical agent. If symptoms are present, student(s) or employee(s) should arrange for a visit to the company authorized medical facility through their instructor or supervisor.

GENERAL SAFETY PROTOCOLS

Laboratory Personnel should follow all campus safety procedures and protocols. In addition, the below guidelines outline additional safety procedures for laboratory areas.

SECURITY

Laboratory security is an integral part of an effective safety program. Follow these basic guidelines to ensure a secure working environment in your laboratory:

- Keep laboratory doors closed and locked when unoccupied
- Keep stocks of organisms and hazardous chemicals locked when the laboratory is unoccupied
- Keep an accurate record of chemicals, stocks, cultures, project materials, growth media, and those items that support project activities
- Notify Public Safety if materials are damaged or missing from laboratories
- Inspect all packages arriving into the laboratory
- When tasks are completed ensure that chemicals and biological materials have been stored properly and securely
- Decontaminate materials and work surfaces after completing work
- Turn off equipment, flames, steam supply, and electrical appliances after completing work
- Do not allow unauthorized personnel into laboratories
- Discuss other security-specific requirements with your supervisor and colleagues
- Report any security issues to Public Safety immediately

WORKING ALONE

According to the National Safety Council, the term “alone” means that a person is beyond the visual or auditory range of any other individual for more than a few minutes at a time. Laboratory work known to be hazardous must not be undertaken by a student who is alone in a laboratory. At least two persons must be present.

All individuals working alone in a laboratory where hazardous conditions exist should:

- Obtain written permission (e.g., e-mail, letter) from the Principal Investigator or Laboratory Supervisor to work alone in the laboratory
- Ensure that a means to contact emergency response personnel is available when working alone in the laboratory

All Laboratory Personnel working alone in an area where hazardous conditions exist should have knowledge of the following:

- Emergency Contacts
- Emergency Response Procedures
- Evacuation Routes
- First Aid Procedures
- Health and Safety Training Requirements
- Personal Protective Equipment Requirements
- Procedures to Report Unhealthy and Unsafe Conditions
- Safety Policies and Procedures
- Spill Response Equipment and Procedures

Precautions should be taken for unattended laboratory operations that are carried out continuously or overnight. Unattended operations should be designed to be safe, and plans should be made to avoid hazards in case of failure. If possible, make arrangements for routine surveillance (e.g., each hour) of the operation, leave the lights on, and leave an appropriate sign on the door to indicate that the operation is going but has been left unattended.

LABORATORY SAFETY EQUIPMENT

Various equipment used in the laboratory provides safety from chemicals and other incidents. The below section covers some, but not all, of this equipment and how it can be utilized to maintain safety in the laboratory.

FLAMMABLE LIQUID STORAGE CABINETS

Flammable liquid storage cabinets are required if storing over ten gallons of flammable liquids. Flammable liquids storage cabinets should be used for the storage of flammable and combustible liquids only. **Do not store corrosives, oxidizers, or other reactive chemicals with flammable or combustible liquids.** Flammable liquid storage cabinets are designed to protect the contents from extreme temperatures for a limited period of time to allow time for evacuation. Flammable cabinets are not fireproof. Flammable cabinet storage should not exceed its rated capacity. Flammable liquid storage cabinets must be labeled “Flammable.” Only containers designed for flammables storage should be used in a flammable storage cabinet. Makeshift containers, such as plastic cups, should never be used even for short-term storage.

Flammable storage cabinet doors should never be propped open. Combustible materials should not be stored on or beside flammable cabinets.

CHEMICAL FUME HOODS

A fume hood is ventilation equipment that vents separately from the building's heating ventilation, and air-conditioning (HVAC) system. Fume hoods are designed to evacuate dangerous fumes away from the laboratory worker. The primary means for controlling airborne chemical exposure is a fume hood. Chemical fume hood must meet the provisions of 29 CFR 1910.1450 (e)(3)(iii).

The following standards apply to fume hood use:

- Chemical fume hoods should be considered as backup devices that can contain and exhaust toxic, offensive, or flammable materials when the material being used generates vapors, gases, or dusts
- Hoods are not means for disposing chemicals via evaporation
- Hoods should be evaluated prior to and during each use by means of simple visual indicators for adequate air-flow
- The hood sash should be kept closed. If the hood does not have a bypass grill, then the sash should be open at least six inches to avoid flow from being choked off
- Vertical sashes should be left down when hood is not in use
- During operation, keep the face opening of a hood as small as possible. Reducing the opening for the hood may also provide protection from explosions due to chemical reactions, over pressurization, etc. Each hood should have arrows (that match up) to indicate the maximum height of the sash when the hood is in-use to meet the air-flow rate requirements
- Hoods are not intended for long term storage of chemicals. Materials stored in hoods should be kept to a minimum. Stored chemicals should not block vents or alter airflow patterns
- Students or employees working in the hoods should be prepared for the event of ventilation failure or other unexpected occurrence such as fire or explosion in the hood. Immediately notify responsible faculty, public safety/the physical plant and Jeff Rook if ventilation fails. Evacuate the area, activate the fire alarm, call Public Safety to report the incident for help. If necessary, call 911
- Mechanical ventilation must remain in operation at all times when hoods are in use and for some time thereafter to clear hoods of airborne hazardous substances
- Hoods must be inspected frequently and cleaned as necessary to ensure adequate air-flow and the prevention of residue buildup

Fume hoods are certified annually by an outside contractor to assure they are performing as designed. Contact EHS and/or Physical Plant if you experience issues with a fume hood. Do not use a fume hood if you suspect it is not working properly. Additional information on Fume Hoods is available on the EHS Pilots UP page.

BIOLOGICAL SAFETY CABINETS

Biological Safety Cabinets (BSCs) are laboratory hoods that are designed to protect individuals when working with potentially dangerous biological samples. BSCs draw air across the samples and away from the worker into a HEPA filter. BSCs are certified annually by an outside contractor. Contact EHS and/or Physical Plant if you experience issues with a BSC. Do not use a BSC if you suspect it is not working properly.

Follow these guidelines when using Biological Safety Cabinets:

- Clean and disinfect all work surfaces in the cabinet before and after use
- Keep all materials at least 4 inches inside the sash
- Segregate clean and contaminated materials within the work area
- Arrange materials to minimize movement of contaminated materials, and work slowly and deliberately
- Never store hazardous materials in a BSC
- When finished using a BSC, wipe down and decontaminate all surfaces, allow the surfaces to dry, and close the sash
- Consult the manual for the specific BSC in use for additional instructions and safety information

BSCs are certified annually by an outside contractor. Contact EHS and/or Physical Plant if you experience issues with a BSC. Do not use a BSC if you suspect it is not working properly. Additional information on Biological Safety Cabinets is available on the EHS Pilots UP page.

LABORATORY HAZARDS

EQUIPMENT HAZARDS

To ensure basic safety of new equipment before purchasing or first use, it needs to be determined that the equipment meets accepted safety standards and requirements, including local fire code requirements and OSHA requirements as well as any state regulations.

Follow these guidelines to minimize the risk of hazards with equipment:

- Operating manuals should be available for all equipment in the laboratory. Laboratory Personnel using equipment must know where equipment manuals can be found and should review manuals prior to using equipment
- Equipment that is designed to be used in a location should be permanently fixed in place to prevent movement from vibration or earthquake, which could lead to hazards when falling.
- Belts, pulleys, and other exposed moving equipment parts must be guarded. Equipment covers must be in place
- Recommended maintenance procedures should be followed for all laboratory equipment.
- New operators of equipment should be trained by qualified Laboratory Personnel
- Hazard warning labels should never be removed from equipment. Electrical components of equipment should never be modified
-

ELECTRICAL HAZARDS

Laboratories possess electrical hazards. Potential exposures to electrical hazards can result from faulty equipment, faulty wiring, damaged receptacles or connectors, or unsafe work practices

Comply with the following precautions to reduce electrical hazard risk:

- Maintain at least 36-inch clearance in front of any circuit breaker panels and 30 inch clearance in front of all electrical panels within the laboratory

- Multi-plug adapters and extension cords are not allowed by federal Fire Code. UL listed multiple-outlet strips with circuit breakers are acceptable
- Extension cords may never be used in place of permanent wiring. Request permanent wiring be installed for situations in which you would use an extension cord for a period longer than eight hours
- Organize equipment to reduce the chance of a spill of water or chemicals into equipment
- Always follow the manufacturer's recommendations for using electrical equipment
- Do not use electrical equipment to perform a task for which it is not designed
- Do not disable safety features on electrical equipment
- Before turning equipment on, check that all power cords are in good condition

If you see a person being electrocuted DO NOT TOUCH THEM. If possible, turn off the power or use an item of non-conductive material (such as a wooden broom handle) to pry the individual away from the contact. Call 911 and Public Safety immediately.

CHEMICAL HAZARDS & MANAGEMENT

In 1990 OSHA issued the Occupational Exposure to Hazardous Chemicals in Laboratories Standard (29 CFR 1910.1450), commonly known as the Laboratory standard. The purpose of this standard is to ensure that workers in non-production laboratories are informed about the hazards of chemicals in their workplace and are protected from chemical exposures exceeding the allowable levels. This standard establishes the requirement of a Chemical Hygiene Plan and Hazard Communication Plan. The Chemical Hygiene Plan outlines detailed information about how Chemicals must be managed, stored, and disposed of at University of Portland. The Hazard Communication Plan ensures that University Laboratory Personnel are provided with sufficient information to recognize, evaluate, and control chemical hazards and take appropriate protective measures

For detailed information on the chemical management, consult the University's Chemical Hygiene plan and Hazard Communication, located on the EHS website. These plans are maintained and updated by EHS.

HAZARDOUS CHEMICAL INVENTORIES

Federal, state and local regulations require UP to inventory the types and quantities of hazardous materials. Chemical inventory management is coordinated by EHS, and tracks and reports the storage and use of hazardous materials. The inventory assists emergency responders, provides campus users with specific information, aids in sharing of chemicals, and reminds users to dispose of sensitive chemicals before they become unsafe or expensive to dispose of.

All laboratory employees must know where the inventory is maintained.

Hazardous materials that must be inventoried include but are not limited to the following:

- Laboratory chemicals: acids, bases, solvents, mercury, metallic compounds, toxic substances (lead, acrylamide), mixtures of hazardous chemicals
- Compressed gas: toxic gas, pressurized gas, cylinders of pure or mixed gas
- Liquids under pressure: Liquid nitrogen, liquid oxygen, propane, aerosols, etc.
- Solvents and spirits

- Landscaping materials: plant food, fertilizer, soda ash, etc.
- Pharmaceuticals
- Photographic materials: developers, reducers, stabilizers, fixers

SAFETY DATA SHEETS (SDS):

Safety Data Sheets must be maintained for hazardous products. EHS encourages departments to maintain accessible copies of SDSs for immediate references in case of emergencies. The campus wide SDS system maintains a record of all SDSs for all chemicals on campus. Access to the SDS system is available on the EHS website. Safety Data Sheets are broken into a 16-section specified format. Read all SDS sections before using a chemical. It is the responsibility of faculty and staff to ensure chemicals are used in accordance with the SDS. For more information on SDSs consult the UP Hazard Communication Plan and Chemical Hygiene Policy.

CHEMICAL LABELING

All chemical containers must be labeled with either a primary label from the manufacturer or a secondary label affixed to the container. The only exception is chemicals in portable containers that are immediately used by the individual (such as a mop bucket filled with floor cleaner). Laboratories are encouraged to use the GHS classification system of labeling, which includes 6 components:

1. Product Name
2. Signal Word (“Danger” or “Warning”)
3. Precautionary Statement
4. Safe Handling Procedures
5. Manufacture Information
6. Pictograms

CHEMICAL STORAGE

Proper chemical storage can reduce the risk of spills and hazard. Always consult the chemical’s SDS for proper storage procedures. Certain chemicals can not be stored with other types of chemicals. Hazards due to reactions between incompatible chemicals include but are not limited to the generation of heat, fire, explosion, and toxic gas or vapor production. Chemicals should be separated into compatible groups. For additional information, consult the Chemical Hygiene plan, the Chemical Hygiene Officer, or EHS.

Basic chemical storage guidelines are listed below:

- Chemical storage areas should be well lit, appropriately ventilated, and kept away from aisles, exits, and heat
- Minimize chemical storage on lab benches, in fume hoods, and other work areas
- Do not store glass chemical containers on the floor or on window ledges without secondary containment
- Inspect stored chemicals for expiration, deterioration, and chemical integrity
- Incompatible chemicals should not be stored together
- Ensure chemical storage shelves and cabinets are securely fastened to the wall and have lips or other suitable methods to prevent bottles from falling in the event of an earthquake

- Avoid storing chemicals above shoulder height. Large containers, liquids, and corrosive materials should be stored no higher than eye level
- Flammables in excess of 10 gallons must be stored in a flammable storage cabinet (see Flammable Storage Cabinet Guidelines on Page 16)
- Label chemical storage cabinets according to type of chemical family or hazard classification found there
- Use secondary containment, such as polyethylene, stainless steel trays, or plastic tubs to provide spill containment and separate incompatible chemicals stored in the same area
- Place absorbent plastic-backed liners or trays on bench tops or in fume hoods where spills are anticipated.
- Avoid permanently storing chemicals in chemical fume hoods
- Containers or chemicals must be capped when not in use; make sure that caps on containers are secure and replace damaged caps or lids
- Chemicals should not be stored in hallways, corridors, or exit ways
- Signs should be posted indicating toxic chemical location and unique chemical hazards in storage areas
- Chemicals with a high degree of toxicity should be doubly contained and stored in a locked area accessible only by authorized personnel

CHEMICAL SPILLS

All laboratories should have a chemical spill cleanup kit appropriate for the chemicals in the lab. Certain chemicals require specific components to be included in the laboratory spill kit.

If there is a fire or serious risk of injury associated with a spill, call 911 immediately for assistance.

When a chemical is spilled, assess the magnitude, hazard, and risk to yourself and others. Close laboratory doors and evacuate the immediate area if necessary. If you are unsure how to address a chemical spill, seek help from Public Safety, the Chemical Hygiene Officer, or EHS. Do not attempt to address a spill of an unknown chemical without assistance. Acquire and put on PPE appropriate for the situation, which may include respiratory protection, eye protection, gloves, and body protection. Laboratory Personnel must be certified before using respiratory protection. Avoid spreading contamination by restricting access to the equipment/ area only to individuals who are properly protected and trained. Only attempt spill cleanup if you feel that it is safe to do so and if you are familiar with the chemical properties of the spilled material. Never proceed to clean up a spill if you do not know the hazards associated with the chemical or if you are unsure how to clean up the spill.

To address a spill:

- Remove all ignition sources and establish exhaust ventilation. (open windows and turn on fume hoods)
- If the chemical is liquid, attempt to contain it by using appropriate absorbent material.
- Decontaminate the equipment/area using appropriate methods under Environmental Health and Safety direction
- Disposal of waste material. Label the waste bag with a UP Hazardous Waste Label and dispose of the hazardous waste. Temporarily store the bag/container of waste in the fume hood if

material is volatile. Call the Environmental Health and Safety Officer at Public Safety x7161 to pick it up

- Stand by to provide information/assistance to emergency response personnel (in cases where they are dispatched)

If the spill is too large for you to handle, involves more than 500 ml of a hazardous material, is a threat to personal safety, involves radioactive material or an infectious agent, or involves a highly toxic, corrosive, or reactive chemical call Public Safety immediately for assistance. Public Safety will contact necessary agents such as the Chemical Hygiene Officer and EHS.

HAZARDOUS WASTE MANAGEMENT

EHS is responsible for the collection and management of hazardous waste from all laboratories at University of Portland. Hazardous waste includes chemical, biological, and radiological waste.

Consult the University of Portland Regulated Waste Management Plan for further information. The Regulated Waste Management Plan outlines the proper procedures for managing state or federally regulated wastes as is available on the EHS website. Regulated Waste includes, but is not limited to, hazardous waste, used oil, universal waste, paint waste, biological materials waste, radiological materials waste, explosives, Polychlorinated Bisphenols, and contaminated equipment. All Laboratory Personnel must be aware of the requirements of the Regulated Waste Management Plan.

Consult EHS for questions about regulated waste. No person is to dispose of any regulated waste: i.e. mercury thermometers, lamps, batteries, ballasts or other EPA registered 'universal wastes' in the normal trash. The following guidelines provide brief information on the disposal of various types of waste at UP.

CHEMICAL WASTE DISPOSAL

To request chemical waste collection, please contact the Chemical Hygiene Officer who will work in conjunction with the EHS office. Please be sure your container(s) contain all appropriate labels before they are collected, or they may not be taken. Please refer to the University of Portland's Chemical Hygiene Plan and the Regulated Waste Management plans for further details.

RADIOACTIVE WASTE DISPOSAL

All radioactive waste, including radioactive wastes meeting the definition for a hazardous waste, must be processed through UP's program for radioactive waste disposal. Please speak with the Radiation Safety Officer for additional details.

BIOLOGICAL WASTE DISPOSAL

Biological waste is collected by the Biology Lab Manager and disposed of in conjunction with EHS. Materials that may not be autoclaved and must be disposed of by alternate means include the following items:

- Human body parts or tissues
- Liquid Blood
- Animal Carcasses or body parts
- Organic Solvents

ELECTRONIC AND BATTERY WASTE DISPOSAL

The University of Portland has implemented an electronic waste and battery recycling program. If you have computer equipment that is no longer in use in your laboratory contact the UP Help desk at x7000 and request to have it picked up. For used batteries, please contact EHS. Do not throw used batteries in the trash.

EQUIPMENT DISPOSAL

Laboratory equipment that needs to be disposed of must be decontaminated before removed. Personal Protective Equipment (PPE) should be used when decontaminating equipment. Equipment that contained or processed chemicals must have the chemicals removed from the equipment. All chemicals must be collected for reuse or disposal as hazardous waste. Decontaminated equipment must be scrubbed thoroughly with warm, soapy water. For materials used to store biological material, decontaminate with a 1:10 bleach solution. For questions about how to decontaminate equipment contact EHS.

LAB TRASH

Dry waste from regular lab activities (“Lab Trash”) includes used gloves and paper towels that might have hazardous chemical or biological residue on them. Lab trash must be treated as hazardous waste. Wear gloves when handling lab trash. Clearly label collection containers and store them in a “Satellite Accumulation Area” for hazardous waste. Keep collection containers securely covered to minimize odors and vapors. Tie plastic bag inside container closed when about $\frac{3}{4}$ full and attach a completed waste ID tag. Only use heavy-duty opaque plastic bags for hazardous waste.

Dry waste from regular lab activities (“Lab Trash”) that has not come into contact with hazardous chemicals or biological residue may be thrown away in regular trash cans.

SHARPS DISPOSAL

“Sharps” waste includes broken glass, used syringe needles and blades. The sharp points and edges pose a significant risk of punctures and cuts to people handling the waste materials. Sharps can not be placed in regular trash receptacles.

Lab glass waste includes items that could puncture regular waste bags and endanger waste handlers. This could include test tubes, broken glass, coverslips, or slides. Lab glass waste that is not contaminated with blood or other biohazards may be placed in a cardboard or plastic box labeled simply “Broken Glass”. The box should be taped closed before putting it in standard trash cans or garbage bins. Broken glass from a dropped preservative or other chemical container must also be handled as “Broken Glass” in hazardous lab waste.

Biohazardous glass items include items that are contaminated with biohazardous material and could puncture a plastic bag. This could include scalpel blades, needles, micropipette tips, serological pipettes, test tubes, swabs, or sticks. These items must be placed in designated red plastic “Sharps boxes” that are leak proof, rigid, and puncture resistant. Sharps boxes must be labeled with the biohazard symbol and equipped with a tight-fitting lid for use during handling and transport. Sharps containers should be closed when no more than two-thirds full.

