

# LST Executive Summary 2024

## **Introduction:**

- Complete annual Laboratory Safety Training provided by EH&S.
- Complete annual site-specific training, and sign the corresponding form, [Laboratory Site-Specific Compliance Checklist](#).
- Ensure that all personnel receive all necessary additional training depending upon the hazards and tasks performed within the lab (Laser Safety Training, Shipping Biological Materials and Dry Ice Training, Radiation Safety Training, Hydrofluoric Acid Safety Training, etc.).
- Maintain documentation records for all lab members of all required annual training.
- Know where to find the University of Rochester's specific information on [EH&S Policies and Programs](#).

## **General Laboratory Safety:**

- Complete a [Registration form](#) and send it to EH&S if you are a new PI or are starting a new laboratory.
- Develop or adopt [Standard Operating Procedures](#) (SOPs) for hazardous chemicals and practices.
- Safety Equipment (eyewashes, safety showers):
  - Ensure safety equipment is functional and properly maintained.
  - Maintain a clear and unobstructed path to the safety equipment.
  - Indicate the location of safety equipment with easily visible signage.
  - Have an eyewash station and safety shower if corrosives, strong acids or bases, or human blood/infectious agents are present in the laboratory.
  - Flush eyewash stations weekly (for 20 seconds) and keep a record.
  - Facilities are responsible for the maintenance and flushing of safety showers.
- Use the Chematix program to document the disposal of all chemical hazardous waste and request chemical waste pick-ups.
- Maintain an up-to-date chemical inventory through Chematix.
- Correct deficiencies found during laboratory safety inspections within one week of the inspection.
- Read and adhere to the University's Laboratory Decommissioning Program in the event of a renovation or laboratory move (regardless if it is across campus or across the country).
  - Notify EH&S's Laboratory Safety Unit, EHS Environmental Compliance, and Radiation Safety (if radioisotopes are used) of your intent to move.
- Report exposures/injuries to EH&S by filling out an [Employee Incident Report Form](#) within 24 hours. Seek immediate medical treatment through University Health Service (UHS, **275-2662**), Strong Memorial Hospital Employee Health's Blood Exposure Hotline (24/7, **275-1164**), or Strong's Emergency Department.
- Report any near misses to EH&S by filling out a Near Miss form within 24 hours.

## **Emergency Action Plans and Laboratory Security:**

- Call Public Safety by dialing x13 from a campus phone, or call or text from a cell phone at 275-3333 for all emergencies.
- Call Public Safety for any suspicious packages or people in your area.
- Call 911 for offsite locations.
- All employees must wear their University IDs at all times.
- Know what to do in case of an emergency and where your group's designated meeting place is.
- Complete all required annual chemical surveys for your lab including Select Toxin Reporting.
- Know who is in your laboratory at all times and their purpose.
- Know the guidelines and forms necessary for all visitors.

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- In the event of a fire, even if you use a fire extinguisher, follow RACE, and activate the fire alarm at a pull station. The area must be cleared for re-entry and occupation by the Fire Department. They will assess the risk of fire rekindling, carbon monoxide levels, etc.

### **Personal Protective Equipment (PPE):**

- PPE must be provided at no cost to the employee based on the hazards present in the lab.
- PI must perform a PPE assessment and assign required Personal Protective Equipment.
- Have the correctly fitting PPE available, enforce its usage, know its limitations, and understand how/when to dispose of all PPE.

### **Chemical Hazards and Exposure:**

- Be aware of the special chemical hazards used in your lab and how to safely handle, store and dispose of them.
- Read all Safety Data Sheets (SDSs) and understand the hazards before purchasing and handling chemicals.
- Have access to a Safety Data Sheet (SDS) for every hazardous chemical including compressed or cryogenic gases used or stored in your laboratory.
- Retain physical copies of SDSs for particularly hazardous materials in the lab in case of exposure.
- Review and update SOPs annually or when a process changes.
- Maintain current SOPs for special chemical hazards.
- Recognize the warning properties for chemical exposures.
- Read and understand product labels (they should be in English).
- Retain labels on their original containers.
- Label reagent bottles (squeeze bottles, spray bottles, etc.) appropriately with name, signal word, and pictograms. Stickers, labels, and pre-labeled reagent bottles can be purchased from Fisher Scientific or VWR.
- Use only approved abbreviations for chemicals when labeling reagent bottles.
  - A list of approved abbreviations can be found in Appendix 9 of the Chemical Hygiene Program.
- Employ the Hierarchy of Controls to limit the possibility of an exposure:
  - Elimination
  - Substitution
  - Engineering Controls
  - Work Practice Controls
  - Personal Protective Equipment (PPE)
- Review the University's Hazard Communication Program for Formaldehyde annually.

### **Sharps:**

- Have a Sharps Safety Plan; can be included in your lab's SOPs.
- Use the Hierarchy of Controls to minimize the potential hazards with sharps.
- Have the correct sharps container depending on the materials used (Chemical, Biological, Chemotherapy, etc.).
- Know what to do in case of an injury with a sharp (wash/call/report).

### **Electrical Safety:**

- Only use power strips for computer equipment.
- Ensure that all critical laboratory equipment is connected to emergency power. Contact Facilities if there are any questions regarding emergency power.

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- Do not work conduct, any research, procedures, or experiments during a power outage.

## Equipment Hazards:

- Post all necessary signs (lasers, UV lights outside biological safety cabinets, strong magnetic fields, and loud areas of 85 dB or higher).
- Be site-specifically trained to work with all physical hazards.
- If your lab uses class 3B or 4 research lasers, they must be registered with EH&S, and all users must complete additional online training annually and be site-specifically trained on their laboratories' lasers.
- All training must include the proper PPE, including hand and eyewear protection, and the limitation of the PPE.

## Environment Hazards:

- All personnel must be [site-specifically trained](#) to properly work with all environmental hazards, including any necessary PPE.

## Gases:

Contact EH&S's Laboratory Safety Unit:

- Before ordering flammable gases - a fire loading assessment must be completed for the floor and building.
- For any compressed gas issues.
- For an evaluation, when multiple compressed gases present (especially cryogenic liquids) in a single space.
- To review the University's Gas Sensor Policy LS009 for requirements, annual maintenance, and evaluation procedure.
- To review and approve all new purchases and applications of acutely toxic gases (GHS rating of 1 or 2), and to ensure proper storage and use, and to determine the need for potential gas sensors.

## Bloodborne Pathogens:

- Employees who work with human blood or "other potentially infectious materials" like blood components, blood-derived products (e.g., albumin), body fluids, tissue, and cells (including cell lines) are covered by OSHA's Bloodborne Pathogens standard. They must be supplied with appropriate engineering controls and PPE, modify their work practices to minimize exposure, and be offered the Hepatitis B vaccine.
- Perform an Exposure Determination (see Appendix 4 of the [Exposure Control Plan](#)).
- Except for clinical labs, your lab must ask the [Institutional Biosafety Committee](#) (IBC) to approve experiments using human blood or "other potentially infectious materials" performed in research laboratories.
- Use universal precautions when working with all human blood or "other potentially infectious materials."
- Know the use and limitations of methods that will prevent or reduce exposure (Hierarchy of Controls).
- Use sharps safety devices (**an** integral, engineered device that blunts or covers the sharp immediately following use and **before** disposal). If it is not possible to use them, you must document why.
- For contaminated sharps:
  - Sharps contaminated with human blood or "other potentially infectious materials" must be disposed of in a red biological sharps container.

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- Contaminated sharps cannot be sheared or broken under any circumstances.
- If a sharps safety device cannot be used and the sharp hazard still exists, removing a contaminated sharp must involve a mechanical device or one-handed technique.
- PPE:
  - Provide information on the types, proper use, location, removal, handling, decontamination, and disposal.
  - Lab coats are laundered by a service; label with biohazard symbol if visibly contaminated.
  - Ensure that workers wash their hands immediately or as soon as possible after removing gloves or other PPE.
- Hepatitis B vaccine:
  - Offer the Hepatitis B vaccine to all employees with “reasonably anticipated” exposure to human blood or “other potentially infectious materials,” free of charge within 10 working days of initial assignment, unless the employee has previously received the complete hepatitis B vaccination series, antibody testing has revealed that the employee is immune, or the vaccine is contraindicated for medical reasons.
  - Ensure personnel signs a declination form if they wish to decline the vaccine and give a copy to their department.
- Ensure lab personnel know what to do, where to go, and what will happen if they have an exposure incident. If possible, save the material the person was exposed to for HIV, HBV, and HCV testing.

### Waste:

- Use Chematix to dispose of all chemical Hazardous Waste.
- Place chemical hazardous waste in a labeled “Hazardous Waste Satellite Accumulation Area.”
- Label chemical waste containers with the words “Hazardous Waste” and other descriptive words that identify the contents.
- Keep chemical hazardous waste containers closed except when adding waste.
- Dispose of waste when the container is  $\frac{3}{4}$  full.
- Keep the outside of the waste containers clean at all times.
- Designate waste as biohazardous with the universal biohazard symbol.
- Segregate biohazardous waste from other hazardous wastes - use a RED container/bag.
- Call the EHS Environmental Compliance Unit with any waste or disposal questions at 275-2056.

**Your lab MUST NOT:** Dispose of chemical hazardous waste in the trash or down the drain (without prior approval by EHS, e.g. chemical disinfectants).

### Biohazards and Biosafety:

- Receive Institutional Biosafety Committee approval before performing experiments that:
  - Require IBC review under the NIH Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules (recombinant organisms, viral vectors, plasmids, etc.)
  - Use or produce biohazardous organisms or materials handled at Biosafety Level 2 or higher (including human or nonhuman primate blood, body fluids, tissues, cells/cell lines).
- Use Standard Microbiological Practices, special practices, containment equipment practices, and PPE appropriate for the Biosafety Level (BSL) assigned to your work.
- The laboratory supervisor and Principal Investigator must ensure that personnel demonstrate proficiency in standard microbiological practices and techniques.

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- At the time of grant award, PIs must determine if that research requires review for [Dual Use Research of Concern](#) (DURC).
- Take shipping training every 2-years, or when regulations change, if shipping regulated pathogens and materials, including dry ice. If importing or exporting materials, procure the appropriate permits or licenses.
- Clinical laboratories that identify Select Agents or Toxins must secure specimen(s) against theft, loss, or release and immediately contact the Responsible Official for the Select Agent Program.
- Labs ordering toxins on the Select Agent and Toxins list for the time, even in [permissible toxin amounts](#), must contact the Biosafety Officer before placing the order.

### **Animals:**

- Read and follow the instructions in EH&S's UCAR Protocol Review for Hazardous Substances specific to the UCAR protocol.
  - At least [two \(2\) weeks before hazard administration](#), submit a hazard form to the Animal resource office. Select the appropriate notification form at the [Animal Resource Hazards page](#): Instructions for Researchers Administering Hazardous Agents to Laboratory Animals.
- For exposures (breaks in skin from bites, scratches, or contaminated equipment, or fluid splashes into eyes, mouth, lining of the nose, or broken skin) involving macaques, follow the post-exposure instructions posted in the primate rooms and hallways (also online from UR Animal Resources).