Rice University
Environmental Health Safety and Laboratory Operations

Laboratory Specific Safety Training

Department: _____ Principal Investigator: _____

Laboratory Locations: _____

This document is intended to be a guide for laboratory specific training and mentoring for all new or existing researchers in the laboratory. The hazard specific sections of this document must be completed by the PI or their designee to create a standard for training that is specific to your laboratory. It should be updated anytime a new hazard or major process is introduced in the laboratory. It is recommended that this training be completed prior to the start of work in a laboratory. OSHA requires this training be completed within 30 days of new work practices. The principal investigator (or alternate) should cover all appropriate topics with the trainee. Each trainee will be assigned a "Lab Specific Safety Training" module on SciShield. This module will document the completion of the training.

General Laboratory Safety

General topics to be covered:

1. Location of all protocols, procedures, and safety manuals, and availability when PI or designee is not available.
2. Review of all protocols and procedures to be performed by the researcher.
3. Storage locations of biological agents, controlled drugs, lasers, and x-ray producing devices and the importance of securing these materials and devices after use.
4. Location(s) for the use of any drugs, biological agents, lasers, and x-ray producing devices and the procedures for cleanup, decontamination and documentation of materials used.
5. Review of specific biological agents, chemicals, lasers, x-ray producing devices and their hazards.
6. Procedures for ordering and disposal of materials used in the laboratory.
7. Location of all waste collection areas and review of all waste collection protocols.
8. Location of personal protective equipment, including proper selection and use.
9. Provide instruction on the proper and safe use of all laboratory equipment.
10. Locations of first aid kits, eyewash stations, safety showers, and spill kits.
11. Location of all life safety devices and review procedures including fire extinguishers, pull stations, and exit routes.
12. Emergency procedures, including contact numbers and spill response instructions.
13. Review incident reporting procedures.

Identify any laboratory generated training materials or standard operating procedures (SOPs) that must be reviewed in conjunction with this training. Provide the full titles of all documents and specify where and how personnel can access them.

Biological Materials

□ Hazard Present □ Not Applicable

List the biohazardous substances that may be found in the laboratory, including rDNA and its products that may pose a hazard to the health of laboratory staff, community, or if released into the environment:

List the symptoms associated with exposure to the materials listed above:

The following disinfectants and contact times are appropriate for the biohazards presented by the biological materials found in the lab. (e.g. 10% household bleach and 6% hydrogen peroxide are an acceptable disinfectant if the solution is less than 48 hours old. You may substitute another product if it is compliant with OSHA bloodborne pathogens standard and is certified to have germicidal activity on Mycobacterium tuberculosis, Staphylococcus aureus, and HBV. All commercial disinfectant must be mixed and used per manufacturers recommendations)

Biosafety topics to be covered:

1. Aseptic technique
2. Personal protective equipment (*i.e*. PPE as detailed in Biosafety Manual and BMBL)
3. Activities of concern (*e.g*. sonication, centrifugation, sharps use etc.)
4. Containment requirement (*e.g.* Biosafety Level 1 or 2)
5. Disinfection and sterilization procedures (as detailed in Biosafety Manual and Spill Response Plan)

6. Biological and biohazardous waste management
7. Locations of required signs, notices, and EHSLO Biological Safety Manual
8. Where biological materials are used and stored within the lab(s) and restrictions on that use
9. Review of written protocols involving biological and biohazardous materials
10. Review emergency procedures (from Laboratory Safety Manual)
11. Location of safety equipment (*e.g*. spill kits, spill cleanup materials, eye wash, safety shower *etc*.)
12. Review incident reporting procedures

Chemicals

□ Hazard Present □ Not Applicable

List the chemicals that require special precautions beyond standard precautions or specialized PPE and established SOPs to be reviewed. Provide the full titles of all documents and specify where and how personnel can access them.

List the hazardous gases present, any special precautions that will be used to handle or store these, any established SOPs to be reviewed. Provide the full titles of all documents and specify where and how personnel can access them.

Chemical safety topics to be covered:

1. How to access and update the chemical inventory.
2. Where to access SOPs regarding hazardous chemicals.
3. Location of chemical storage areas and proper lab protocol for storage, segregation, and use.
4. Review of specific handling procedures for high hazard chemicals such as pyrophorics, explosives, organic peroxides, and other acute hazardous chemicals.
5. Review of all protocols and procedures to be performed by the researcher, highlighting the proper use of hazardous materials and their proper disposal.
6. How Safety Data Sheets (SDS) for the chemicals present in your lab can be obtained in SciShield. Describe how to gain access to SciShield, what computer the researcher can use, and how to print the appropriate SDS in the event of an emergency.

Lasers

□ Hazard Present □ Not Applicable

Identify the laser systems requiring standard operating procedures, list the established SOPs to be reviewed. Provide the full titles of all documents and specify where and how personnel can access them. A laser system can be composed of multiple lasers.

A complete inventory of all Class 3B and 4 lasers operating in the lab must be in the "Equipment" section of your "Lab Profile" on SciShield.

Laser safety topics to be covered:

1. Identify any hazards associated with each laser system in use.
2. A description of your laser set up, its purpose and the route of the beam path.
3. Highlight any safety barriers installed in the setup and their importance.
4. Identify the appropriate eye protection for each laser in the laboratory, its location in the lab, and when it should be used.
5. Identify the importance of notifying others when a laser is in use. Identify the "Laser in Use" light switch or the "Laser in Use" signage and describe its use.
6. Identify the Emergency Power Off Button (EPO) and describe its use.
7. Highlight any lab specific procedures for entering or exiting the laser controlled area (LCA).
8. Discuss procedures and safety measures for alignment procedures.
9. Review SOPs for all laser systems and where to access.

Radioactive Materials

□ Hazard Present □ Not Applicable

Please fill out the table below to include all isotopes and spaces in your laboratory where radioactive materials are used. These must be approved by the RSO. Ensure the "Radioisotope Material Registration" is up to date on SciSchield.

Approved Isotope	Approved Location (Building / Room #)	Project

Radiation safety topics to be covered:

1. Location of all permit paperwork, including access in the absence of the permit holder.
2. Permit review including approved nuclides, limits, laboratories, users, and any other restrictions.
3. Locations of required signs, notices, and EHSLO Radiation Safety Manual.
4. Where radioactive materials are used within the lab(s) and restrictions on that use.
5. Storage location(s) and procedures for radioactive material security and storage.
6. Radioactive material waste segregation and disposal forms and inventory forms properly signed and dated.
7. Review of written protocols involving radioactive material.
8. Review the principles of ALARA.
9. Radiological safety considerations and potential for the generation of airborne radioactive material.
10. Special handling techniques, which will minimize exposure when handling radionuclides.
11. Instruct trainees on the proper use of survey equipment and techniques.
12. Frequency for both routine and post operational surveys as applicable to your laboratory.
13. Process for tracking radioactive material usage on SciShield.
14. Availability of appropriate personal protective equipment and a discussion of its importance.

By signing below, the Principal Investigator certifies that the hazard information provided above is complete, accurate, and reflective of all current operations conducted in the laboratory and agrees to update this information as hazards and procedures change.

_____ _____

Signature of P.I. Date of last document update