



Title:	Laboratory Safety Policy		
Program:	Laboratory Safety	Effective Date:	April 5, 2013

1. **Purpose:** To establish the minimum requirements to protect laboratory workers from potential exposures to hazardous materials and processes found in the laboratory.
2. **Scope:** This policy applies to all laboratories and laboratory workers at Stony Brook University.
3. **Policy:** All laboratory work must be performed according to established safe work practices. The procedures listed in this policy are the minimum work practices that apply to all laboratory work at Stony Brook University. The *Biosafety Manual*, *Chemical Hygiene Plan* and *Radiation Safety Manual* provide additional information and requirements.

4. **Responsibilities**

4.1. Principal Investigators and Laboratory Supervisors

Principal Investigators (PI), faculty, and other Laboratory Supervisors have ultimate responsibility for the safety of the laboratory workers, students, and visitors in the research or teaching laboratories in which they work. PIs and Laboratory Supervisors shall ensure that the requirements in Section 7 (Procedures) are followed by all laboratory workers. In addition, PIs and Laboratory Supervisors shall:

- 4.1.1. Know and implement the guidelines and procedures of all EH&S laboratory policies. Include provisions for these policies in grant proposals.
- 4.1.2. Conduct hazard reviews of all laboratory procedures and review and approve hazard reviews written by laboratory workers. Write specific operating procedures or protocols for handling and disposing of hazardous materials and equipment used in their laboratories. Ensure written procedures are implemented by laboratory workers, including the use of appropriate Personal Protective Equipment (PPE).
- 4.1.3. Ensure the laboratory is registered with EH&S.
- 4.1.4. Complete all required EH&S safety training and ensure all laboratory workers have completed required EH&S training.
- 4.1.5. Train laboratory workers in specific hazards found in the laboratory and ensure the use of proper control measures.
- 4.1.6. Conduct routine inspections of laboratories with laboratory workers.
- 4.1.7. Ensure that all appropriate controls including fume hoods and safety equipment are available and in good working order in the laboratories. Ensure that the controls are repaired and laboratory workers do not use the equipment until it is operating correctly.
- 4.1.8. Complete annual inventories of hazardous materials as required and provide them to EH&S.
- 4.1.9. Ensure that all accidents and near misses with the potential to cause serious injury or harm occurring in the laboratories are reported to EH&S and that a written accident report is filed.
- 4.1.10. Ensure laboratory workers have access to Safety Data Sheets (SDSs) and other safety resources.
- 4.1.11. Hold laboratory workers accountable for all safety rules, including the use of appropriate PPE.

4.2. Laboratory Safety Coordinator

Each department must appoint someone as Laboratory Safety Coordinator. Each laboratory group is encouraged to also have a Laboratory Safety Coordinator. The Laboratory Safety Coordinator will assist with the implementation of the EH&S Laboratory Safety policies and assists in establishing a safe work environment by collaborating with EH&S, faculty, other researchers and laboratory personnel. Additional responsibilities include:

- 4.2.1. Coordinate laboratory safety and environmental compliance efforts based on EH&S programs.
- 4.2.2. Serve as liaison between the laboratory and EH&S in helping maintain safety and regulatory information, including Safety Data Sheets.
- 4.2.3. Attend training sessions provided by EH&S and share information with department.
- 4.2.4. Participate in campus-wide labsafety listserve.
- 4.2.5. Distribute safety information to all laboratory personnel. Communicate information on identified hazards, precautions, and required corrective actions throughout the department.
- 4.2.6. Assist EH&S in evaluating program effectiveness.
- 4.2.7. Conduct or coordinate periodic laboratory inspections by laboratory workers.
- 4.2.8. Routinely communicate and advise PI, Department Manager/Chair on safety and injury/illness prevention efforts and activities.
- 4.2.9. Provide guidance on laboratory safety compliance to other laboratory members.
- 4.2.10. Request information and clarification on regulatory requirements from EH&S.
- 4.2.11. Assist in responding to any regulatory actions or investigations.
- 4.2.12. Participate in the development of the Laboratory Emergency Plans and assist with emergency management planning and response as needed.
- 4.2.13. Maintain safety records such as copies of accident reports, laboratory audits, & fire code violations.
- 4.2.14. Ensure that laboratory workers receive all required EH&S training and laboratory specific information.
- 4.2.15. Oversee that safety conditions in the laboratories are met.
- 4.2.16. Assist supervisors in properly investigating and documenting all accidents and injuries.
- 4.2.17. Maintain laboratory safety postings.
- 4.2.18. Assist in developing, implementing, and communicating departmental safety policies and programs.
- 4.2.19. Coordinate laboratory submissions of hazardous materials inventories to EH&S for annual updates and storage relocations.
- 4.2.20. Communicate with the Building Manager on facility issues related to safety.

4.3. Laboratory Worker

All laboratory workers will:

- 4.3.1. Complete all required EH&S safety training and participate in laboratory specific training provided by Principal Investigator or designee. (*New Worker Training Checklist* <http://www.stonybrook.edu/ehs/lab/training/>)
- 4.3.2. Conduct hazard reviews for procedures conducted in the laboratory and maintain a file of the hazard reviews and safety protocols.
- 4.3.3. Follow procedures and guidelines outlined in the *Chemical Hygiene Plan, Biosafety Manual and Radiation Safety Manual* and standard operating procedures.

- 4.3.4. Report any unsafe working conditions, faulty fume hoods, or problems with safety equipment to the PI or Laboratory Supervisor.
- 4.3.5. Report all accidents, serious injuries and near misses related to laboratory work to the PI or Laboratory Supervisor.

4.4. Environmental Health and Safety (EH&S)

- 4.4.1. Provide training in compliance with regulatory requirements.
- 4.4.2. Conduct inspections.
- 4.4.3. Conduct accident reviews.
- 4.4.4. Provide lessons learned and other safety information in a timely manner.
- 4.4.5. Serve as Chemical Hygiene Officer and Biosafety Officer on the University Laboratory Safety Council (ULSC) and the Radiation Safety Officer on the University Radiation Protection Committee (URPC).
- 4.4.6. Provide guidance on laboratory safety to the Institutional Animal Care and Use Committee (IACUC) and the Institutional Biosafety Committee (IBC).

5. References

- 5.1. OSHA regulations, including but not limited to, 29 CFR 1910.1450 *Occupational exposure to hazardous chemicals in laboratories*
- 5.2. EH&S Policies (<http://www.stonybrook.edu/ehs/policy/campus.shtml>)
 - 5.2.1. Biosafety Manual
 - 5.2.2. Chemical Hygiene Plan
 - 5.2.3. Eyewash/showers
 - 5.2.4. Fume Hoods
 - 5.2.5. Hazardous Waste
 - 5.2.6. Laboratory Close Out
 - 5.2.7. Laboratory Emergency Plan
 - 5.2.8. Minors in Research Labs
 - 5.2.9. Radiation Safety Manual
 - 5.2.10. Regulated Medical Waste
 - 5.2.11. Working Alone in Research Labs
- 5.3. Other
 - 5.3.1. Biosafety in Microbiological and Biomedical Laboratories (BMBL) (<http://www.cdc.gov/biosafety/publications/bmb15/>)
 - 5.3.2. Prudent Practices in the Laboratory (http://www.nap.edu/catalog.php?record_id=12654)

6. Definitions

- 6.1. **Laboratory:** A room or space equipped with chemical, biological, radiological or other hazardous materials, research animals, or mechanical equipment, and is used for teaching, research, observation or measurement. For the purposes of this policy it is intended to include academic, research, clinical and engineering labs, and is not intended to include computer labs, store rooms, mechanical rooms, or shops used to support operations.
- 6.2. **Laboratory Supervisor:** The individual Principal Investigator (PI), Director, or Laboratory Manager who has the ultimate responsibility and oversight for all laboratory functions.
- 6.3. **Laboratory Worker:** Laboratory employees, users, volunteers and visitors who, in the course of their work, are present in the laboratory or are at risk of possible exposure to hazardous materials or processes. These include, but are not limited to, laboratory technicians, instructors, researchers, high school students, undergraduate students, graduate assistants, part-time and temporary employees.

7. Procedures

7.1. Hazard Reviews

The PI or Laboratory Supervisor must ensure that hazard reviews are completed, updated as needed and followed by all laboratory workers.

- 7.1.1. A review of all health and physical hazards of chemicals, biological and radiological materials and processes used must be conducted for each project, procedure or operation before laboratory work begins.
- 7.1.2. The hazard review is used to develop the safety requirements for the protocol or "Standard Operating Procedure (SOP)".
- 7.1.3. All written safety protocols must be reviewed and approved by the PI or Laboratory Supervisor.
- 7.1.4. Written safety protocols must be made available to everyone working on the procedure.
- 7.1.5. Additional information on Hazard Reviews and Safety Protocols is here:
<http://www.stonybrook.edu/ehs/lab/general-lab-safety/hazard-reviews.shtml>.

7.2. Laboratory Registration

The PI or Laboratory Supervisor must ensure that the laboratory is registered with EH&S.

- 7.2.1. All laboratories operated on campus, including but not limited to teaching, research, and company-run, must be registered in the EH&S Laboratory Registration database. This ensures that EH&S has basic information regarding the laboratory and contents in case of emergency.
- 7.2.2. Registration must be completed within 10 days of any substantial changes in laboratory hazards or transfer of the laboratory to a new PI or Laboratory Supervisor.
- 7.2.3. The Laboratory Registration system can be accessed at:
http://www.stonybrook.edu/ehs/resources/lab_registration.shtml

7.3. Signs and Labels

The PI or Laboratory Supervisor must ensure that appropriate signs and labels are in place to provide information to emergency responders, building management, and laboratory workers. The following are required:

- 7.3.1. Laboratory Emergency Information with Hazards indicated. This is to be placed at each entrance door to the laboratory.
- 7.3.2. Laboratory Emergency Plan. This is to be placed near the phone and every exit door.
- 7.3.3. As needed, proper signage indicating Biological Safety Level (BSL) level, radioactive materials, lasers, and high voltage equipment.
- 7.3.4. Label all hazardous material containers, including but not limited to wash bottles, baths, and sample containers. Labels must include the name of the hazardous material. Abbreviations and symbols must not be used without the full name of the material.
- 7.3.5. EH&S signs can be downloaded from:
<http://www.stonybrook.edu/ehs/lab/general-lab-safety/signs-and-labels.shtml>

7.4. Training

7.4.1. EH&S Training

- 7.4.1.1. All laboratory workers and managers (PI, Director, etc.) must complete the EH&S training courses required for the type of research conducted in the laboratory.

- 7.4.1.2. Completion of the on-line courses must be documented by printing out the “My Grades” page and providing a copy to the PI or Laboratory Supervisor.
- 7.4.1.3. Links to the EH&S courses, as well as a chart for determining which courses are required for an individual, can be found at:
<http://www.stonybrook.edu/ehs/lab/training>

7.4.2. Laboratory Specific Training

The PI or Laboratory Supervisor must provide training specific to the work conducted in the laboratory for their laboratory workers. The PI or Laboratory Supervisor is required to document the laboratory specific training. This training includes, but is not limited to:

- 7.4.2.1. Specific safety precautions that must be taken with hazardous chemicals, biological materials, or radiation, including proper disposal based on EH&S policies, laboratory specific hazard reviews and Standard Operating Procedures (SOPs).
- 7.4.2.2. Operation of special machinery or instruments.
- 7.4.2.3. Standard operating procedure format and preparation.
- 7.4.2.4. Location of emergency equipment, including fire alarms, fire blankets, fire extinguishers, eyewashes, emergency showers, spill kits, and decontamination materials. Demonstrate how to use the equipment.
- 7.4.2.5. The *New Worker Training Checklist* can be used to document this training.
<http://www.stonybrook.edu/ehs/lab/training/>

7.5. Proper Attire

Wear appropriate clothing when working in a laboratory (additional information <http://www.stonybrook.edu/ehs/lab/general-lab-safety/appropriate-lab-clothing.shtml>):

- 7.5.1. Shoulder length or longer hair must be tied up and secured (not hanging).
- 7.5.2. No loose clothing. Lab coats must be worn over loose clothing.
- 7.5.3. Wear shoes at all times in the laboratory. Do not wear sandals, open toe shoes or perforated shoes. Leather shoes are safer than canvas sneakers.
- 7.5.4. Always wear clothing that covers and protects legs down to ankles.
- 7.5.5. Always wear long sleeved clothing to protect arms if the hazard review does not require wearing a lab coat.
- 7.5.6. Jewelry should not be worn that interferes with gloves and other protective clothing, could come into contact with electrical sources or react with chemicals.

7.6. Personal Protective Equipment (PPE)

- 7.6.1. PPE for laboratory work includes, but is not limited to, lab coat, gloves, and protective eyewear.
- 7.6.2. Additional PPE may be necessary depending on hazard and risk assessment of specific laboratory work (e.g., faceshield, apron).
- 7.6.3. Laboratory workers are discouraged from using respiratory protection unless EH&S is involved in the selection, fit testing and training the worker on the use and limitations of the respirator.
- 7.6.4. PPE must be selected based on the hazard and risk assessment of specific laboratory work.
- 7.6.5. PPE is to be provided by the Principal Investigator.
- 7.6.6. Additional information on PPE can be found at: <http://www.stonybrook.edu/ehs/lab/ppe/>.

7.7. Working Alone

Laboratory workers should avoid working alone when conducting research and experiments involving hazardous substances and procedures.

- 7.7.1. Teaching Laboratories: A University representative trained in appropriate laboratory safety procedures must be present in the laboratory at all times when undergraduate students are conducting experiments.
- 7.7.2. Research Laboratories: see *Working Alone in Research Labs* policy.
- 7.7.3. Minors are prohibited from working alone in a laboratory.
<http://www.stonybrook.edu/ehs/lab/minors.shtml>

7.8. Laboratory Inspections

- 7.8.1. The PI or Laboratory Supervisor is required to ensure that regular inspections of safety practices and safety equipment are conducted.
- 7.8.2. Inspections must be documented. The EH&S checklist can be used to document the inspections. (<http://www.stonybrook.edu/ehs/lab/general-lab-safety/lab-inspection-checklist.shtml>)
- 7.8.3. EH&S will conduct periodic inspections of all laboratories.

7.9. Hazardous Material Storage

- 7.9.1. All hazardous materials must be stored in a safe manner. This includes containers made of material compatible to the hazardous material, labels that include the name of the material, and closed containers to prevent spills.
- 7.9.2. Chemicals must be stored by hazard category to avoid chemical incompatibility within a storage cabinet.
- 7.9.3. Flammable liquids (new, in use and waste) shall not exceed 25 gallons (95 liters) within the laboratory outside of an approved flammable liquid cabinet. Flammable liquids quantities in excess of 25 gallons must be stored in an approved flammable liquid cabinet.
- 7.9.4. "Chemicals of Interest" must be stored in a locked cabinet for security. Refer to <http://www.stonybrook.edu/ehs/lab/security/> for more information on "Chemicals of Interest".
- 7.9.5. If an approved radiation lab, all radioactive materials must be stored in an approved, secure area.
- 7.9.6. Additional information on chemical storage can be found here:
<http://www.stonybrook.edu/ehs/lab/chemstor.shtml>

7.10. Laboratory Facilities

The PI or Laboratory Supervisor must ensure that all safety equipment within the laboratory is properly functioning; laboratory workers are trained in the proper use and limitations of the safety equipment; and safety equipment that is not functioning correctly is removed from service until it is repaired. This safety equipment includes, but is not limited to:

- 7.10.1.1. Local exhaust ventilation for chemical usage (e.g., fume hoods) with continuous low air flow monitoring alarm.
- 7.10.1.2. Biological Safety Cabinets.
- 7.10.1.3. Hazardous material spill control supplies required by the hazard reviews.
- 7.10.1.4. Laboratory sinks for handwashing.
- 7.10.1.5. Emergency eyewashes and emergency showers.

- 7.10.1.6. Vacuum systems (if present) must be protected with appropriate traps.
- 7.10.1.7. Kitchens/eating areas (if present) must be separate from laboratory areas by a full height wall to underside of structure. The door to the area must be self closing.

7.11. Accident and Incidents

- 7.11.1. All emergencies (fires, significant spills, serious injuries) must be reported immediately to University Police (631-632-3333).
- 7.11.2. All accidents and incidents (significant spills, fires, injuries) must be reported to EH&S as quickly as possible.
- 7.11.3. Accident report forms must be completed and submitted by the PI or Laboratory Supervisor to the appropriate office. The form can be downloaded from:
<http://www.stonybrook.edu/ehs/lab/general-lab-safety/accident-report.shtml>

7.12. Laboratory Security

Laboratory security is everyone's responsibility. The basic requirements are:

- 7.12.1.1. Control access. Restrict labs to authorized personnel only.
- 7.12.1.2. Keep laboratory door locked when no one is in the lab.
- 7.12.1.3. Maintain an inventory. Know where and how much hazardous materials are in the lab.
- 7.12.1.4. All primary stock vials of radioactive materials must be secured in a lockbox provided by EH&S.
- 7.12.1.5. Report any unaccounted loss of hazardous material to University Police.
- 7.12.1.6. Report annual inventory of certain regulated materials to EH&S, as required.
- 7.12.1.7. Train all laboratory workers on security procedures and why they are important.
- 7.12.1.8. Additional information is found here:
<http://www.stonybrook.edu/ehs/lab/security/index.shtml>

7.13. Laboratory Close Out

- 7.13.1.1. Proper disposition of all hazardous materials in advance of the laboratory move or the laboratory being vacated is the responsibility of the Principal Investigator (PI) or researcher to whom a laboratory is assigned.
- 7.13.1.2. The *Laboratory Close Out* form must be completed by the PI prior to vacating a lab. The form must be sent to EH&S.
- 7.13.1.3. EH&S will inspect the laboratory for removal of all hazardous materials.
- 7.13.1.4. Additional information is found here:
<http://www.stonybrook.edu/ehs/lab/moving.shtml>

8. Related attachments, forms or documents: None.