



Idaho State University

POLICIES AND PROCEDURES

ISU Laboratory Safety

ISUPP 7110

POLICY INFORMATION

Policy Section: *Research*

Policy Title: *ISU Laboratory Safety*

Responsible Executive (RE): *Vice President for Research*

Sponsoring Organization (SO): *Office for Research*

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I. INTRODUCTION

To establish the minimum requirements applicable to use of laboratories, the responsibilities of persons using or visiting laboratories at Idaho State University (ISU or University), and such standards related to these facilities as needed to ensure the safety of Laboratory Workers, Visitors and this type of research infrastructure throughout the University.

II. DEFINITIONS

- A. **Collaborator:** For purposes of this policy, Collaborators are persons employed by an outside company or research institution, who are permitted by their employer, the applicable ISU department, and the PI to perform Laboratory work at ISU. Collaborators access ISU laboratories through funding agreements as subcontractors, through sub-awards and institutional Memoranda of Understanding (MOU), or consultant services agreements. If there is no MOU or other agreement they must complete the Lab Access Waiver prior to use of the Laboratory.

Foreign nationals may need clearance through Export Controls (located within the Office for Research, Division for Research Integrity) prior to acceptance as a Collaborator.

- B. **Laboratory:** A room or space equipped with chemical, biological, radiological, or other hazardous materials, research animals, or mechanical equipment, and used for teaching, research, observation or measurement, or a combination of these activities. For purposes of this policy, "Laboratory" includes academic/teaching laboratories, research, clinical and engineering laboratories, as well as art studios (based upon materials and equipment in use). This definition does not apply to spaces primarily used as computer laboratories, store rooms, mechanical rooms, or areas designated as shops used to support facility operations.
- C. **Laboratory Manual:** The combined documentation, usually centrally located, housing the relevant processes, procedures and information essential to the safe operations of a specific Laboratory. These manuals are separate from the various "safety manuals" referred to in this Policy (ex: Biosafety Manual) and should be tailored to the particular uses of a specific Laboratory.
- D. **Laboratory Worker:** Persons present in a Laboratory under signed agreement (including employment agreements, sub-awards, etc.) authorized by the PI or Laboratory supervisor to use a specific Laboratory's equipment and its supplies. These persons are present in the Laboratory to use materials and equipment as part of a research team. Laboratory Workers include: ISU employees – PIs, Laboratory supervisors, Laboratory technicians, Laboratory assistants, graduate research assistants, instructors, parttime and temporary employees; Collaborators and Volunteers; ISU students – undergrad and Career Path Internship; high school students (dual enrollment, via special programs, i.e., TRIO, or as student Volunteers).
- E. **Minor:** Any person less than eighteen (18) years of age who is not an enrolled ISU student. Minors may be classified as Visitors or Laboratory Workers—different requirements apply depending on their status.
- F. **Personal Protective Equipment (PPE):** Specialized clothing and respiratory devices worn to limit the risks of Laboratory environments. These vary depending on the Laboratory type and the materials in use. PPE can include gowns, lab coats, full-body suits, respirators (masks), boots, shoe covers, gloves, eye protection (goggles, face shields, safety glasses). Any person entering a Laboratory setting at ISU can be asked to use the appropriate PPE for that Laboratory, and may be refused entry if PPE is refused.
- G. **Principal Investigator:** A Principal Investigator is the lead scientist or engineer for a particular well-defined science (or other research) project, such as a Laboratory study or clinical trial. This person is the "head of the Laboratory" or "research group leader." The PI is the person who takes responsibility for directing the research and the completion of a project. This person has ultimate responsibility and oversight for all Laboratory functions within a specific Laboratory. The research project may or may not be externally funded.

- H. **School-aged Students:** Students from primary or secondary schools visiting laboratories as part of educational programs under carefully controlled and supervised conditions.
- I. **Visitor:** A person, including school-aged children (i.e., school tours), present in a Laboratory under escort, to observe, not to use the facility. These persons are in a Laboratory on a short-term basis, do not require releases or agreements to be present, if the PI or Laboratory supervisor has approved their visit in advance and arranged for their escort while in the Laboratory. If not directly affiliated with the research work in a specific Laboratory, an ISU employee is considered a Visitor.
- J. **Volunteer:** Persons approved to perform Laboratory work activities without pay under the acceptance of the terms of an Authorized Volunteer Services Agreement (see General Counsel's website).

III. POLICY STATEMENT

All ISU Laboratory work must be performed according to the safe work practices, even though some Laboratory settings do not involve obvious hazards, or the use of chemicals. This policy provides a procedural framework for achieving Laboratory operational readiness by listing the minimum practices that apply to all laboratories at ISU. The manuals listed below, along with other "safety manuals" specified within them, are the primary reference for safe Laboratory practice and requirements, regardless of academic area or project. If the work or use of a specific Laboratory does not seem to fit these manuals, refer to the ISU Public Safety Office for best practices relative to general overall safety practices. Additional direction may result from external oversight organizations, or discipline-specific safety practices.

- Animal Care and Use Handbook
- Animal Hazard Program – Occupational Health and Safety Instruction (OHSI)
- Biosafety Manual
- Chemical Hygiene Plan
- Hazardous Waste Policy Manual
- Infectious Waste Policy Manual
- Laser Safety Policies and Procedures
- ISU Hazardous Waste Policies and Procedures Manual
- ISU Radiation Safety Policy Manual
- Radiation Procedures Manual

IV. AUTHORITIES AND RESPONSIBILITIES

The Vice President for Research has the executive oversight and responsibility for the implementation of this policy. The Vice President for Research may delegate the day-to-day oversight for application of this policy, with authority to review and approve changes to manuals and practice.

Department Chairs are responsible for ensuring all faculty and staff are aware of the specifics of this policy and are following the procedures it establishes. Principal Investigators (PI) are responsible for ensuring that persons present in each Laboratory follow all policies and procedures pertaining to Laboratory safety and operational readiness, while maintaining records and documentation as directed in related manuals. Finally, Laboratory Workers and Visitors are responsible to conduct themselves in a safe manner and to comply with all safety procedures.

V. PROCEDURES FOR SAFE LABORATORY OPERATIONS READINESS

A. Roles for Safe Laboratory Operations

1. Principal Investigators

For their assigned Laboratories, or those in use for their projects - PIs, have ultimate responsibility for the safety of the Laboratory Workers, ISU students, Visitors, and Volunteers in the research or teaching Laboratories in which they work. PIs shall ensure that all safety requirements are followed by all Laboratory Workers and Visitors. In addition, PIs shall:

- a. Know and implement the guidelines and procedures for all Laboratory policies.
- b. Prepare and keep up-to-date a Laboratory-specific manual, such as the Biosafety Manual.
- c. Include in grant proposals their provisions to implement these policies during sponsored projects. This can include requesting funds for respirators, rabies shots, and specialized PPE.
- d. Complete all required safety training and ensure all Laboratory Workers have completed required training.
- e. Train Laboratory Workers in specific hazards found in the Laboratory and ensure the use of proper control measures.

- f. Hold Laboratory Workers accountable for all safety rules, including the use of appropriate PPE.
 - g. Be responsible for needed authorization for Volunteers and Collaborators. An Authorized Volunteer Services Agreement or a Lab Access Waiver should be completed by these individuals prior to start of work, signed by the PI as the "ISU Supervisor" and submitted to ISU Risk Management. The form to be completed is dependent on the person's function in the lab. Contact Risk Management to determine which form must be completed. A copy of the fully signed Agreement or Waiver should be included in each lab-specific manual.
2. Laboratory Worker
- All Laboratory Workers shall:
- a. Complete all required safety training and participate in Laboratory specific training provided by the PI or designee.
 - b. Follow procedures and guidelines outlined in the Chemical Hygiene Plan, University Biosafety Manual and Radiation Safety Manual, Laboratory specific biosafety manual and standard operating procedures and related ISU policies.
 - c. Report any unsafe working conditions, faulty fume hoods, or problems with safety equipment to the PI.
 - d. Report all accidents, serious injuries, and near misses related to Laboratory work to the PI.
 - e. Be briefed on special hazards and processes for the specific Laboratory where they are assigned to work in accordance with that Laboratory's manual and applicable safety manual(s).
3. Volunteers
- Volunteers must:
- a. Follow all requirements listed under V.A.2 Laboratory Worker;
 - b. Sign the Authorized Volunteer Services Agreement prior to starting work in a Laboratory.
4. Minors (as Volunteers)
- a. A person under age eighteen (18) who is approved to work in a specific Laboratory must complete an Authorized Volunteer Services Agreement signed by a parent or guardian. The exceptions are Minors approved for project/work on campus under TRIO Programs.

- b. No one under age of eighteen (18) may
 - i. Be alone in a Laboratory
 - ii. Handle radioactive materials
 - iii. Work with animals
 - iv. Handle human blood, human cell lines, or material defined as “other potentially infectious materials” in the bloodborne pathogens standards, 29 CFR 1910.1030.
 - c. ISUPP 3040 *Children in the Workplace and Classroom* policy shall be followed.
5. Working Alone
- a. Laboratory Workers should avoid working alone when conducting research and experiments involving hazardous substances and procedures.
 - b. Undergraduate students are required to have at least one other trained worker present when handling radioactive materials or performing experiments that have potential hazards.
- B. Preparedness for Laboratory Work
- 1. Proper Laboratory Attire

ISU Laboratory Safety Policy requires that any persons visiting or using a Laboratory wear appropriate clothing. Specific Laboratory safety manuals (ex: Radiation Safety, Biosafety) define appropriate clothing for the specific conditions, depending on the purpose of the Laboratory.
 - 2. Personal Protective Equipment (PPE)

PPE for Laboratory work includes, but is not limited to, lab coat, gloves, and protective eyewear, respirators. Additional PPE may be necessary depending on hazard and risk assessment of specific Laboratory work (e.g., face shield, apron).

 - a. PPE is to be provided by the PI.
 - b. Laboratory Workers and Visitors should wear respiratory protection if the specific Laboratory Manual or standard operating procedure calls for its use.
 - c. NOTE: Laboratory Workers should have the Technical Safety Office (TSO) provide a “fit test” and training prior to using respiratory protection. The TSO is qualified in the use and limitations of respirators.
- C. Visitors in the Laboratory
- 1. Visitors are not allowed in any Laboratory without prior approval of the PI.

- a. Laboratory visitation must be scheduled with the PI and approved at least three (3) business days in advance of the target date.
2. No Visitors are allowed in a Laboratory actively conducting work with infectious materials.
3. No Visitors are permitted in a Select Agent* Laboratory or storage area, except inspectors from Centers for Disease Control (CDC) or authorized ISU Facility Maintenance staff identified by official ISU ID badges.

* A Select Agent is a biological agent or toxin capable of causing: (1) Death, disease, or other biological malfunction in a human, an animal, a plant, or another living organism; (2) Deterioration of food, water, equipment, supplies, or material of any kind; or (3) Deleterious alteration of the environment.

VI. LABORATORY ACCESS CONTROL

A. Laboratory Entry by Visitors

It is the policy of the University to restrict access to Laboratories to authorized personnel only. The following guidance should be applied to permit access:

1. General
 - a. Non-work related Visitors are discouraged.
 - b. Each individual working in a Laboratory should prudently consider the risks to Visitors of their work.
2. Laboratory observations and tours
 - a. Visitors are not allowed in laboratories unless accompanied by the PI or designee.
 - b. School-aged Students occasionally may enter laboratories as part of educational programs under carefully controlled and supervised conditions for a walk-through or tour (ex: TRIO STEM Program). Approval for access by these programs should be arranged by consulting Risk Management.
 - c. Visitors must wear appropriate PPE as outlined in each specific Laboratory's manual, based on the hazards in the Laboratory.
 - d. Consult also ISUPP 3040 *Children in the Workplace and Classroom* policy.

B. Laboratory Entry by Laboratory Workers

Laboratory security is the responsibility of all persons actively working in connection to a specific Laboratory. Safe Laboratory operations depend on security and dependable infrastructure and the consistent use of controls.

1. PIs should train all Laboratory Workers on security procedures and why they are important.
2. Locks and Keys – Everyone must:
 - a. Keep Laboratory door(s) locked when no one is in the Laboratory.
 - b. Maintain keys in the designated location(s), as in controlled access key boxes.
 - c. Report lost Laboratory keys as soon as known.

C. Materials Control

1. Know the location and maintain inventories of chemicals, raw materials, biomaterial, and the quantity of hazardous materials in laboratories.
2. Report annual inventory of certain regulated materials to TSO, as required.
3. Report discrepancies or any unaccounted loss of hazardous materials to the PI, Public Safety and the TSO when noted.
4. Secure primary stock vials of radioactive materials in the lockbox(s) provided.

VII. TEACHING LABORATORIES

All safety measures as described above pertain to teaching Laboratories on campus as well as research Laboratories. Access control is maintained by departments and faculty teaching in teaching Laboratories.