

# Laboratory Safety

PS-EHS-02



## About This Policy

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Responsible University Office:

University Environmental Health and Safety

Responsible University Administrator:

Office of the Executive Vice President for University Academic Affairs

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## Related Information

[\\* Minors in Hazardous Work Areas](#)[\\* Personal Protective Equipment](#)

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## Scope

All laboratories on Indiana University property.

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## Policy Statement

Indiana University is committed to 1) ensuring the safety of its students, employees, and visitors; and 2) complying with all applicable regulatory environmental, health, and safety requirements. Although individual units are free to go above and beyond stated requirements, in order to ensure that a minimal level of protection is maintained, all laboratory operations must

satisfy all Federal, State, and Local regulations as well as any guidance developed by Indiana University organizational units designated with the authority to do so.

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## Reason For Policy

This policy and associated procedures set Indiana University's expectations in the area of laboratory safety, toward the goal of protecting individuals, ensuring effective operations, and satisfying Federal, State, and Local regulations (Occupational Safety and Health Administration, Environmental Protection Agency, National Institutes of Health, Nuclear Regulatory Commission (NRC), etc.). Indiana University's [Principles of Ethical Conduct](#) (principles.iu.edu) specifically mention a culture of compliance with laws, regulations and policies; ethically conducting teaching and research; and promoting health and safety in the workplace.

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## Procedure

### A. General

1. Each faculty member, principal investigator, lab manager, lab supervisor or designated responsible authority is responsible for the safety of the individuals working within his or her laboratories.
2. Food and drinks are strictly forbidden in laboratories that use, store, or house any hazardous materials such as chemicals, biological materials, radioactive materials or animals.
3. Appropriate clothing must be worn in laboratories at all times. Long pants and closed-toe footwear are required attire when using any hazardous material or working with animals. Clothing and hair must be secured properly to avoid accidents.
4. An appropriate level of Personal Protective Equipment (PPE) must be worn at all times when hazardous materials such as chemicals, biological materials, radioactive materials, animals or equipment, are used.
5. Proper labeling and storage of all hazardous materials are required and essential for a safe laboratory work environment.
6. Faculty members, principal investigators, lab managers, lab supervisors or designated responsible authorities are responsible for ensuring that all individuals working in their laboratories have been adequately trained. Training must be accomplished before individuals begin performing hazardous duties. Individuals in laboratories must have read and understand all written guidelines, manuals, plans, policies, programs and standard operating procedures that pertain to their activities.
7. Faculty members, principal investigators, lab managers, lab supervisors or designated responsible authorities that participate in any activity that results in a waste product of any kind must follow disposal procedures in compliance with all government regulations and prevent the release of contaminants through sound best management practices for waste generation, handling, and disposal.
8. Safety Data Sheets (SDS) for all laboratory chemicals are required to be maintained in the laboratory or on-line. Safety Data Sheets are available from manufacturers' web sites and through the MSDSOnline® service at the IUEHS website
9. The entrance to each laboratory in which hazardous materials are used or stored shall be posted with the names and phone numbers of the Principal Investigator, Lab Manager, or Lab Supervisor and any other designated personnel who can be contacted in the event of an emergency. Such signage will follow the Hazard Assessment and Laboratory Signage Program developed by IUEHS, or equivalent.
10. The availability and use of a number of types of safety equipment are essential to the practice of safe science. Safety equipment, such as biosafety cabinets, fume hoods, safety showers, and emergency eyewashes, should be present in well-marked, highly visible, and easily accessible locations in or near all laboratories that use hazardous materials.
11. The prompt reporting of hazardous material spills to proper University authorities is an essential element in the protection of the health and safety of faculty, staff, students, visitors, and patients. Follow the spill procedures for chemical, biological, or radiological spills as necessary.

12. Employees are required to report all occupational injuries, illnesses, or incidents to their work supervisor. Following a report of an incident, the Designated Medical Service Provider for the respective campus shall provide a confidential medical evaluation and follow-up to the employee.

## **B. Responsibilities**

### **a. University Environmental Health and Safety is responsible for:**

- Developing, implementing, and maintaining all university programs concerning safety and environmental compliance while maintaining appropriate scientific knowledge of the materials, techniques and practices utilized, in collaboration with researchers and experts in the fields UEHS regulates.
- Assisting faculty members, principal investigators, lab manager, lab supervisor or designated responsible authority with risk assessment and risk mitigation including recommending or requiring safety equipment and PPE as necessary.
- Performing periodic inspections to confirm compliance;
- Providing and documenting generally applicable training for laboratory employees concerning the requirements of this policy and their responsibilities;
- Providing guidance for the preparation of documents and lab-specific training programs required by this policy;
- Maintaining current knowledge concerning the requirements for storage and use of regulated materials in the laboratory;
- Investigating injuries, illnesses, or incidents in laboratories and communicating recommendations to appropriate personnel;
- Participating in research oversight committees and reviewing protocols for safety and compliance;
- Arranging for individualized medical screenings, surveillance and occupational health services as required;
- Acting as the point of contact between Indiana University and the governmental entities charged with enforcing the regulatory requirements represented in this policy; and
- Halting work in laboratories where lack of compliance with requirements represents a danger to individuals.

### **b. Deans, Directors, and Department Heads are responsible for:**

- Ensuring that all departmental faculty and staff members understand and take seriously their roles in implementing the requirements of this policy;
- Appointing a Laboratory Safety Coordinator (LSC) who will coordinate and monitor the implementation of this policy within the department; and
- Ensuring an appropriate and safe workspace is provided for work being performed.

### **c. Faculty Members, Principal Investigators, Laboratory Managers, and Laboratory Supervisors are responsible for:**

- Taking overall responsibility for the safety and supervision of individuals working within his or her laboratories;
- Ensuring that each individual working within the lab is provided with appropriate training on safety and regulatory requirements and ensuring that their laboratory personnel receive the appropriate procedure-specific instruction and are proficient at performing those procedures;
- Ensuring that each individual working within the lab is provided with any needed medical surveillance and/or medical support services required by their work;
- Ensuring that required safety equipment and personal protective equipment are provided, maintained, and used;
- Ensuring that specific standard operating procedures incorporating safety considerations are developed and observed;
- Ensuring that prompt action is taken to correct any unsafe acts or conditions which have been observed or reported, whether through inspections or other routes;
- Notifying IUEHS in the event of an injury or illness that occurs in the laboratory; and

- Being familiar with reading, understanding, and implementing all requirements associated with specific programs, as applicable, listed below.

d. **Individuals within Laboratories are responsible for:**

- Complying with all safety requirements for the work being performed;
- Participating in required training and medical programs
- Wearing appropriate lab apparel and using personal protection equipment (such as lab coat, safety glasses, gloves, etc.);
- Utilizing the appropriate safety equipment properly (such as the fume hood);
- Reading, understanding, and following the established standard operating procedures;
- Obtaining information prior to using an unfamiliar hazardous material or performing a new task; and
- Informing the faculty member, principal investigator, lab manager, lab supervisor or designated responsible authority of any accident or unsafe conditions.

C. **Requirements for Specific Types of Work**

Indiana University faculty and staff perform many different tasks in laboratory settings. Although the aforementioned general requirements apply to all laboratory work, the following briefly describe specific types of work and by inclusion, these guidelines, manuals, plans, and programs are enforceable by this policy. Compliance with other applicable federal, state, and local regulations may also be required.

- a. **Animal Exposures:** In consultation with the Indiana University Institutional Laboratory Animal Care Program, the Indiana University Occupational Health and Safety for Individuals with Animal Exposures Program establishes procedures to identify hazards, assess risks, and eliminate or manage those risks for all persons with direct contact with animals, tissues, or animal by-products at IU facilities.

[Occupational Health and Safety for Individuals with Animal Exposures Program](#)

- b. **Biological Safety:** To ensure the safe handling of potentially pathogenic organisms, and to ensure compliance with various guidelines, regulations and standards, the Biosafety Manual and the Bloodborne Pathogens Exposure Control Plan establish procedures and control measures that all laboratory personnel who work with or have exposure to potentially pathogenic microorganisms and organisms containing recombinant or synthetic nucleic acid molecules (rDNA) must follow.

[Biosafety Manual](#)

[Bloodborne Pathogens Exposure Control Plan](#)

- c. **Chemical Safety:** To ensure the safe use of hazardous chemicals in laboratories, the University requires compliance with Federal, State, and Local regulations. The Indiana University Laboratory Safety and Chemical Hygiene Plan meets or exceeds the Occupational Exposure to Hazardous Chemicals in Laboratories standard (Lab Standard) and describes procedures and control measures that must be understood and observed by all individuals in the laboratory use of chemicals. In addition, the following links provide detailed information regarding other lab specific chemical related programs.

[Laboratory Safety and Chemical Hygiene Plan](#)

[Anesthetic Gas Safety Program](#)

[Compressed Gas Cylinder Program](#)

[Controlled Substances Program for Research \(Non-Practitioners\)](#)

[Formaldehyde Hazard Communication Program](#)

- d. **Hazardous Materials Transportation:** To ensure the safe transport of hazardous materials, comprehensive guidance has been established by the Indiana University Hazardous Materials Transportation Program. As a supplement to this Program, the Indiana University Hazardous Materials Move Guide outlines transportation procedures for chemical and biological materials in use.

[Hazardous Materials Transportation Program](#)

- e. **Laser Safety:** To ensure the safe use of lasers in laboratories, the University requires compliance with the American National Standard for the Safe Use of Lasers. The Indiana University Laser Safety Program meets or exceeds this standard and describes procedures and control measures that must be understood and observed by all individuals in the use of Class 3B and 4 lasers.

### Laser Safety Program

#### f. Radiation Safety

Indiana University supports the safe use of radioactive materials through the establishment of appropriate administrative structures and procedures to ensure safety and regulatory compliance with NRC as well as the State of Indiana. Radiation Safety Officers establish the requirements for the use of radioactive materials and radiation producing devices and administer the Radiation Safety Program for their respective campus(es).

#### Procedures

#### For IUB and Regional Campuses For IUPUI and Regional Medical Education Centers

- g. Robots and Robotic Systems Safety: The Robots and Robotic Systems Safety Program establishes minimum requirements for the design, rebuild, installation, safeguarding, maintenance, testing, start-up and training on robots and robotic systems.

#### Robots and Robotic Systems Safety Program

- h. Waste Management: The Indiana University Waste Management Program meets or exceeds federal, state and local standards/regulations by working to prevent the release of contaminants through sound, best management practices for waste generation, handling, and disposal.

#### Waste Management Program

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## Definitions

**ANSI** – American National Standards Institute.

**Designated Responsible Authority** – An individual who responsible for ensure that all activities within their laboratory are conducted in accordance with this policy.

**EPA** - Environmental Protection Agency.

**Hazardous Material** – any substance that presents a potential hazard to the user from a biological, chemical, radiological, or other perspective.

**IUEHS** - University Environmental Health and Safety.

**Indiana University Property** – Buildings, grounds, and land that are owned by Indiana University or controlled by Indiana University via leases or other formal contractual arrangements to house ongoing IU operations.

**Laboratory** - A workplace where chemical, biological, radiological, animal, or hazardous machinery are used for study or research on a non-productive (i.e., not for the routine, methodical production of large volumes of materials or data for commercial sale) basis.

**Lab Manager** - A staff employee responsible for managing laboratory operations.

**Lab Safety Coordinator** - A safety officer designated for each school, department, or other subdivision by the dean, chairman, or director to serve as liaison to EHS.

**Lab Supervisor** - A staff employee responsible for supervising laboratory personnel.

**Laser** - Light Amplification by Stimulated Emission of Radiation. A monochromatic, coherent beam of radiation not normally believed to exist in nature.

**OSHA** - Occupational Safety and Health Administration.

**Principle Investigator** – The lead scientist that plans and/or conducts the laboratory research and assumes the overall supervisory responsibility for laboratory operations and project completion.

**NIH** – National Institutes of Health.

**NRC** – Nuclear Regulatory Commission.

**Principal Investigator (PI)** - The lead scientist that plans and/or conducts the laboratory research and assumes the overall supervisory responsibility for laboratory operations and project completion.

**SOP**- Standard Operating Procedure.

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## Sanctions

Failure to follow the requirements of this Policy can subject the employee to progressive disciplinary action, up to and including dismissal. Failure of the employee's supervisor to enforce the requirements of this Policy may result in temporary or permanent closure of the laboratory and subjects the supervisor to progressive disciplinary action, in accordance with University policies. Work may be halted in laboratories where lack of compliance with requirements represents a danger to individuals.

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## Additional Contacts

<i>Contact</i>	<i>Phone</i>	<i>Email</i>
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## History

Updated definition of laboratory February 2016.  
This policy was established in 2015