

University of Notre Dame

Safety Program

*Department of Physics
Nieuwland Science Hall Eddy Street Lab.*

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Approvals:

Risk Management and Safety (RMS): Andy Welding

Physics
Safety Program

Safety Personnel

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Department of Physics Safety Program

1. Executive Summary

1.1. The goal of the Laboratory Integrated Safety Plan (LISP) is to create a culture of safety at the University of Notre Dame. This Safety Program is an extension of the LISP but specific to the Department of Physics. While it has been attempted to address all known safety concerns within Physics, due to the nature of research, it is impossible to identify all hazards. While this program promotes a safe working environment, individuals ultimately hold responsibility for their own safety.

2. Purpose & Scope

2.1. This document describes the Department of Physics-specific safety program. It is intended to supplement The University of Notre Dame's [Risk Management and Safety \(RMS\) Department's health, safety and environmental policies and procedures](#).

3. Responsibilities (Additional responsibilities are defined in the University-wide [Laboratory Integrated Safety Plan](#))

3.1. Department Chair

- 3.1.1. Embrace a culture of safety, and establish and demonstrate an expectation that all personnel will follow policies and procedures to ensure safety. Appoints a Safety Coordinator (SC).
- 3.1.2. Establish and maintain a Local Safety Committee (LSC). This includes appointing both an SC and an LSC.
- 3.1.3. Enable enforcement of rules and regulations, and take prompt, effective corrective action when necessary.
- 3.1.4. Provide assistance to RMS and the LSC when situations arise that threaten the safety of investigators and other personnel in the department.
- 3.1.5. Identify resources needed to address risk mitigation efforts that exceed the ability of the laboratory.

3.2. Safety Coordinator (SC)

- 3.2.1. Main point of contact for the Local Safety Committee (LSC).
- 3.2.2. Chairs the LSC unless the Department Chair designates an alternative.
- 3.2.3. Coordinates the LSC meetings and ensure meeting minutes are taken.

- 3.2.4. Acts as an intermediary between RMS, laboratory personnel, and the Department Chair or his/her designee, to facilitate solutions to non-compliance issues.
 - 3.2.5. Ensures reporting of injuries, accidents, and exposures to RMS, assists in investigating, and works with RMS and laboratory to mitigate future risk.
 - 3.2.6. Reports at least annually to the Department Chair, or his/her designee, the current status of: laboratory safety validations; injury, accident, and exposure incidents; and existing gaps in laboratory safety practices, resources, and infrastructure.
- 3.3. Local Safety Committee (LSC):
- 3.3.1. Serves as a conduit between RMS and research personnel.
 - 3.3.2. Ensures that information is communicated both ways and that personnel have undergone required training, and training is documented.
 - 3.3.3. Maintains and reviews this Program annually.
 - 3.3.4. Serves as the main point of contact for environmental, health and safety activities, provides key personnel with information related to the Laboratory ISP, and ensures that laboratories undergo the validation process.
 - 3.3.5. Determines whether specific laboratories are required to develop a Laboratory Safety Protocol as required in the [LISP](#).
 - 3.3.6. Meets regularly.
- 3.4. Principal Investigators (PI)
- 3.4.1. Ensures that a Laboratory Contact is identified and their responsibilities are clearly communicated. Though the PI/Supervisor or instructor may serve as the Principal Laboratory Contact, he or she may also designate other senior personnel such as technicians, post-doctoral associates, or graduate students to fill this role.
 - 3.4.2. Ensures the laboratory is validated through the Joint Assessment process.
 - 3.4.3. Ensures that all personnel working in the laboratory have their training needs identified and receive the required training. Ensures training records are maintained.
 - 3.4.4. Informs all employees and students that environmental, health, and safety are priorities and informs them about these policies, rules, regulations and procedures, as well as their specific responsibilities.
 - 3.4.5. Develops a Laboratory Safety Protocol if required by this Safety Program. The PI may task another individual within the laboratory to construct the Laboratory Safety Protocol though the PI is responsible for ensuring the task is satisfactorily completed.

- 3.4.6. Identifies hazards within the laboratory and implements practices to mitigate risk.
 - 3.4.7. Sets expectations and requires that safety equipment, devices, personal protective equipment (PPE) are provided and maintained, and are properly used by all individuals present in the laboratory, including personnel from other laboratories.
 - 3.4.8. Takes prompt corrective action when unsafe conditions, practices or equipment are reported, observed, or when identified during Joint Assessments, self-assessments, or unannounced assessments.
 - 3.4.9. Promptly reports work-related injuries, illnesses, accidents, and exposures to hazardous agents to RMS and the Safety Coordinator. Collaborates with RMS to investigate incidents and implement means to mitigate risk if needed.
 - 3.4.10. Provides financial support for environmental, health, and safety improvements or request assistance from the next higher level of supervision.
- 3.5. Principal Laboratory Contacts
- 3.5.1. Designated point of contact for RMS and personnel working within the laboratory for safety issues.
 - 3.5.2. Schedules Joint Assessments and works to resolve any issues identified during the Assessment.
- 3.6. Unit or Department Members – Adhere to this Program and all [University safety policies](#).
- 3.7. Visitors (Researchers and Others) – Adhere to this Program.

4. Laboratory Specific Protocol Requirements

- 4.1. If a lab has any of the hazards identified below the PI or his designee shall develop a Laboratory Safety Protocol specific to those hazards.
 - 4.1.1. Sealed, non-sealed or machine produced radiation
 - 4.1.2. Laboratory is Bio-safety level (BSL) 2 or 3.
 - 4.1.3. Use of controlled substances
 - 4.1.4. Use of lasers rated 3B or 4
 - 4.1.5. Conducts entry into confined spaces
 - 4.1.6. Performs maintenance on equipment – may require lockout / tagout
 - 4.1.7. Experiments involving exposed electrodes with voltages above 50V
 - 4.1.8. Others hazards as identified by the LSC or Risk Management and Safety.

4.2. The Laboratory Safety Protocol should clearly describe the hazard, the training required to inform and protect personnel from the hazard, equipment associated with potential hazard exposure, and processes that shall be followed to mitigate risk to personnel.

5. General Laboratory Safety Requirements

- 5.1. Laboratory safety requirements are outlined in the [Chemical Hygiene Plan](#).
- 5.2. Laboratory Postings - Emergency contact information and relevant hazard warnings shall be posted on the outside of the door leading into the laboratory. A contact information card can be obtained through RMS (1-5037) or on the [RMS Website](#).
- 5.3. Minors are prohibited from working alone in any laboratory. They shall be attended by senior personnel such as technicians, post-doctoral associates, or graduate students at all times. Minors working in laboratories are required to complete the Forms for Minors in Appendix A.
- 5.4. Personal Protective Equipment (PPE) – Additional PPE requirements are identified in the [Chemical Hygiene Plan](#).
- 5.4.1. Minimum PPE requirements for working in laboratories while handling hazardous materials include safety glasses (ANSI Z87), protective gloves, and lab coat or apron. Closed toed shoes are required at all times while in the laboratory.
- 5.4.2. Prescription safety glasses are permitted. Individuals desiring ANSI approved prescription safety eyeglasses must first seek approval from their supervisor then contact RMS at 1-5037. RMS will provide a voucher to Eyemart Express (215 E. University Dr., Granger, IN). The cost of the prescription safety glasses (up to \$65) will be charged back to the department.
- 5.5. Department-Specific Safety Requirements
- 5.5.1. Use of class 3B and Class 4 lasers requires a baseline eye examination: information is available on RMS website.

6. General Training Requirements

- 6.1. General laboratory safety training is required for all personnel working in the lab. It is the responsibility of the worker to complete lab safety training initially and on an annual basis. Refresher training can be completed online through the [RMS web site](#).

6.2. Training records must be maintained for personnel. Records shall include the name of the training course and date it was completed. The records can be hard copies or electronic. All training must be documented centrally, once a training record management system is in place, or locally within the department or the laboratory. Documentation should be available when requested by the LSC or RMS.

6.3. All users of radioactive materials and radiation producing machines must attend an initial radiation safety session and complete an annual refresher training. Additionally, users of the accelerators in the Nuclear Science Lab must complete training specific to that equipment as conducted by NSL staff.

7. Communication Process

7.1. Safety information will be distributed to all applicable personnel by email and via the Physics Department website.

8. Radiation/Laser Safety

8.1. Refer to the Laser Safety Manual for Class 3B and 4 requirements. The manual is located on the RMS Web site at this [link](#).

8.2. All users of radioactive materials and all users of radiation-producing machines shall attend initial radiation safety training and take either on-line or in-person [refresher training](#) annually.

9. Biological Safety

9.1. Requirements for laboratories working with biohazards can be found on the RMS web site at this [link](#).

9.2. All users of biological hazards or infectious materials shall attend initial BSL 1-2 training and take [refresher training](#) annually.

9.3. All personnel working with blood, unfixed human tissue, or other blood-borne pathogens shall complete annual Blood-borne Pathogen (BBP) training. Additional requirements for working with blood-borne pathogens can be found on the RMS web site at this [link](#).

10. Laboratory Waste

10.1. Chemical Waste – Refer to [RMS web](#) site for information on chemical waste handling and disposal. Go to the [RMS Web](#) site for pickup schedules.



10.2. Radioactive Waste - Refer to the [RMS web](#) site for the radioactive waste process.


10.3. Bio-hazardous Waste - Refer to the Infectious Waste Guidelines on the RMS web site at this [link](#) or the [RMS web](#) site.

11. Laboratory Field (Off-Campus) Work

11.1. Laboratories conducting field or off-campus work may be required by the LSC to develop a safety protocol for the activities. Field research plan may be required as determined by Safety Committee.

11.2. A template for field or off-campus research is available on the [RMS web site](#).

Appendix A – Forms

Forms for Minors	 Forms for Minors Working in Labs.pdf
Other RMS Forms: Controlled Substances, DEA, International Travel, Radiation, Workers' Compensation (Injury), PPE, Waste Pick-up	http://riskmanagement.nd.edu/forms/