



Personal Protective Equipment (PPE) Policy for Research and Instructional Laboratories

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Purpose:

The University of Chicago (University) is committed to provide a healthy and safe working environment for all members of the campus community including faculty, staff, students, and visitors. This policy provides guidance and establishes baseline requirements on the provision, selection, use, care, and disposal of PPE that is consistent with federal/state regulations and University policies for University research and instructional laboratories.

Policy:

Adequate personal protective equipment (PPE) shall be provided to researchers, utilized and maintained in a sanitary and reliable condition whenever deemed necessary by reason of hazards, processes or environment. Instructional laboratories are required to determine the appropriate PPE for the lab work being done and ensure compliance with this policy by the students.

PPE is not a substitute for more effective control methods and its use has to be fully considered along with other means of protection against hazards. It will be used in conjunction with engineering or administrative controls when those controls are available.

Scope:

This policy applies to faculty, staff, students, visiting scientists, and volunteers in University research and instructional laboratories where by nature of their job functions have the potential to be exposed to chemical, physical, radiological, and/or biological hazards which can cause illness, injury, or impairment to any part of the body through absorption, ingestion, inhalation, injection, exposure, or physical contact. The scope of this policy includes PPE for eyes, nose, mouth, face, head, hands, feet, and legs. This policy is in conjunction with the Respiratory Protection Program and Hearing Protection Program under the direction of Environmental Health and Safety

(<https://safety.uchicago.edu/occupational-health-safety/occupational-health/respiratory-protection-program/>).

Definitions:

Personal Protective Equipment (PPE): clothing or other equipment worn that is designed to protect the wearer from hazards.

Engineering Control: The redesign, replacement, or use of equipment to reduce or eliminate worker exposure of hazardous material, condition or process. Examples of equipment include biosafety cabinet, fume hoods, gloveboxes, radiation shielding.

Administrative (work practice) Control: change in how an activity is conducted or how a procedure is performed to reduce the likelihood of exposure to a hazardous material, condition or process. Examples of administrative controls include Standard Operating Procedures, training, housekeeping, equipment maintenance and personal hygiene practices.

Hazardous Materials, Conditions, or Processes: materials, conditions, or processes that pose a risk to human health, including but not limited to:

- Any hazardous chemical according to the OSHA *Hazard Communication Standard* (CFR 1910.1200)
- Blood or other potentially infectious material according to the OSHA *Bloodborne Pathogens Standard* (CFR 1910.1030)
- Biologically hazardous agents according to the Biosafety in Microbiological and Biomedical Laboratories (BMBL) and *NIH Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules*
- Radioactive material and devices emitting ionizing radiation
- Class IIIB and IV lasers
- Physical hazards

Personal Protective Equipment Assessment: the evaluation of the personal protective equipment requirements for a specific activity or work environment, so that the individual is protected from exposure to a hazardous material, condition or process.

Authority and Responsibility:

Research Safety Policy Council

- Review and approve this policy and its revisions

Executive Vice President for Research, Innovation, and National Laboratories

- Overall compliance with health and safety requirements and implementation of this policy in all laboratories across the University

Division Deans (Biological Sciences, Physical Sciences, Social Sciences, Institute of Molecular Engineering):

- Compliance with health and safety requirements and implementation of this policy in all laboratories within the given academic Division.

Office of Research Safety (ORS):

- Develop and update this policy and PPE guidance document in conjunction with this policy
- Assist lab supervisor, Principal Investigator, or his/her delegate to identify activities, work environment and potential exposure where PPE is required
- Review departmental PPE procedures and/or policies to ensure compliance with this policy and regulatory requirements
- Communicate PPE selection decisions with the worker and provide training in the proper use and care of PPE

Environmental Health and Safety:

- Develop and update PPE policies, procedures, and guidance for all other personnel outside research and instructional laboratories working at the University
- Implement a respiratory protection program and hearing protection program

Divisional Laboratory Safety Specialist

- Serves as a liaison between lab supervisor, ORS, EH&S and other institutional committees in the implementation of PPE requirements
- Verify that required PPE, as determined by PPE assessment, is provided, used, cared for, and disposed of properly by workers
- Verify that the workers have fulfilled PPE training requirements

Immediate Supervisor, Principal Investigator, or designee:

- With consultation with ORS, perform PPE assessment to determine when, where, and what PPE is required
- Provide and make available proper PPE at no cost to the individuals who are at risk of exposure to hazards in the laboratory
- In collaboration with and support of the ORS and Divisional Laboratory Safety Specialists (LSS), post signage indicating the PPE requirement and ensure PPE is used, cared for, and disposed of properly
- In collaboration with and support of the ORS and LSS, provide job-specific PPE training

- In collaboration with and support of the ORS and LSS, document and maintain records for the distribution of PPE and completion of job-specific PPE training
- In collaboration with and support of the ORS and LSS, taking appropriate corrective action in accordance with the University of Chicago's Personnel Policy on Progressive Corrective Action, Section U703 for employees who are incompliant with this PPE policy.

Personnel working in a lab including faculty, student, and visitors

- Participate in training and/or retraining for the proper use of PPE
- Inspect all PPE prior to use and properly maintain and store PPE
- Use PPE in accordance with instruction and training received
- Notify their supervisor when new/alternative PPE is necessary or changes in procedure occurs which may impact PPE utilization
- Properly dispose of contaminate PPE
- Address colleagues and coworkers who are not following this policy

Policy Implementation:

- **Minimum Laboratory Attire**
When occupying a laboratory, the minimum attire shall be comprised of clothing that covers the upper body and leaves no skin exposed below the waist, including long pants/skirt and closed toe shoes.
- **Baseline Laboratory PPE**
When exposed to hazardous materials, conditions, or processes, laboratory personnel must wear body protection, hand protection, and eye protection, in addition to wearing the minimum laboratory attire (Exceptions: (1) when working at Biosafety Level 1 (BSL-1) with no other hazards, eye protection is only recommended for activities that have the potential to create splashes or if contact lenses are worn. (2) Lab coats are not required in laser labs with no other hazards present).
- **Perform PPE Assessment**
Laboratory supervisor (PI/supervisor or delegate), in conjunction with ORS and/or other institutional committees, evaluates whether administrative and engineering controls along with the Baseline Laboratory PPE are sufficient to fully protect workers from the hazardous materials, conditions, or processes present in the laboratory. If risks cannot be controlled either temporarily or permanently through other controls, additional PPE must be provided to the workers that is sufficient to minimize the risk of exposure. PPE

purchased for use on campus must comply with applicable standards for that type of equipment.

- Considerations and Types of PPE

Size & application: PPE must be provided in sizes that accommodate the individuals and fully protects the part of the body it is intended to protect.

Strength & Chemical resistance: PPE must be able to withstand the physical (e.g. puncture, tear, or abrasions) and chemical stress (permeation and degradation) for the work performed.

- Flexibility & Longevity

PPE should provide sufficient dexterity and last for the duration of the task performed.

Types of PPE and selection considerations:

Type of PPE	Examples	Considerations
Body protection	Lab coat, apron, tyvek suit, coverall, chemical suit	Material, Chemical/flame resistance
Body protection should be worn when there is a potential for contamination or exposure to the body from splashes (Biological/Chemical/Radiological), impacts, cuts or heat.		
Eye protection	Safety glasses, Safety goggles, Face shield	Physical impact, high intensity lights, splash, mucus membrane exposure
Mucus membrane protection	Face shield, surgical mask	Splash, mucus membrane exposure
Hand protection	Gloves	Chemical resistance, dexterity, physical impact including puncture, thermal limits (cryogen/heat)
Hand protection should be worn when hands are exposure to hazards such as those from skin absorption, cuts or lacerations, chemical burns, and harmful temperature extremes. Workers must be able to remove the gloves in a manner that prevents skin contamination. Gloves shall be removed before touching public objects such as telephones, elevator buttons, or door handles.		
Respiratory protection	Refer to "Respiratory Protection Program"	
Head protection	Helmet	Flying/falling object, electric hazard (ANSI) Z89.1.2014

Foot protection	Steel toe shoes	Falling/piercing object, electric hazards, slippage ASTM F2412-05/F2413-05
Hearing Protection	Refer to "Hearing Conservation Program"	

Training:

PPE training must include both on-line or live general PPE training provided by ORS (Chemical Hygiene Plan- Laboratory Safety) or EH&S (Respiratory, Hearing, Fall Protection), and activity-specific PPE training provided by supervisor or designee as described in training policy.

ORS provided training addresses the proper selection, hazard prevention mechanism, donning, doffing, adjustment, use, care, disposal, and limitations of PPE.

Individuals must also receive laboratory specific training based on the activities, work environment, and potential exposure to hazardous materials before performing any activities requiring its use.

Workers should be provided PPE retraining when:

- 1) there is reason to believe that the worker does not have the understanding and skill to properly use the PPE;
- 2) changes in the workspace/procedure render previous training inadequate or obsolete;
- 3) there are changes in the types of PPE required.

Maintenance and replacement:

Individuals who use PPE must properly fit, inspect, use, maintain and dispose of their PPE.

Fitting: Users must choose or adjust their PPE so that it is appropriately sized to provide maximum protection. PPE not fitted properly may interfere with the activity to be performed and jeopardize the safety of the individual.

Inspection: User must inspect PPE before and after each use. Any PPE that is damaged, worn, or defective, or otherwise no longer provides effective protection must be replaced and disposed of appropriately.

Use: Users must be trained and use the appropriate PPE whenever it is required. Immediately discontinue using contaminated or damaged PPE. Disposable PPE must never be reused.

Maintenance and Storage: Users are responsible for properly maintaining their PPE in sanitary and serviceable condition. Cleaning is particularly important for eye and face protection so that vision is not impaired. Reusable PPE must be cleaned and maintained according to the manufacturers' instructions after each use. PPE should never be taken home for cleaning or laundering, but instead be laundered by an approved vendor. Reusable PPE should be discarded when it becomes worn, torn, unable to be decontaminated, or has other integrity problems. Disposable PPE must never be reused. PPE should be stored in a safe location away from potential hazards to prevent contamination and/or damage.

Disposal: Contaminated or potentially contaminated PPE should never be disposed as regular waste, but should be disposed of in an appropriate waste container for the contaminant. Damaged but clean PPE should be disposed of as regular waste and must not be used.

Compliance:

No hazardous activity may be conducted if the required personal attire is not worn, or the required PPE in serviceable condition is not available and used. Failure to comply with these requirements can be grounds for disciplinary action.

References:

The Federal Occupational Safety and Health Administration (OSHA) has established a specific set of PPE standards in Parts 1910 (General Industry) and 1926 (Construction) of Title 29 of the *Code of Federal Regulations* (CFR).

CDC/NIH *Biosafety in Microbiological and Biomedical Laboratories*

Nuclear Regulatory Commission's Standards for Protection Against Radiation (10 CFR 20)

University of Chicago Chemical Hygiene Plan

University of Chicago Biosafety Manual

University of Chicago Bloodborne Pathogens Exposure Control Plan

University of Chicago Radiation Safety Manual

University of Chicago Laser Safety Program Policy

University of Chicago Hearing Conservation Program Policy

University of Chicago Respiratory Protection Program Policy'

University of Chicago Fall Protection