UCI Environmental Health & Safety

Research Laboratory and Personal Protective Equipment

Responsible Administrator: Research Safety Programs Manager /Lab PPE Coordinator
Revised: November 2023

Summary: This section outlines the policy and procedures related to the Research Laboratory and Personal Protective Equipment that are administered through the Environmental Health & Safety (EHS) Department.

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1. Program Description

In order to protect the health and welfare of faculty, staff, students, visitors and volunteers and to strive towards compliance with state, federal and local regulations, appropriate protective equipment is required in areas where there may be a risk of injury or exposure to hazardous substances or conditions. This program contains general requirements to protect University researchers from various hazards encountered in their laboratory areas/spaces and is based on the UCOP Personal Protective Equipment Policy http://policy.ucop.edu/doc/3500597/PersonalProtectiveEquip.

The use of Personal Protective Equipment (PPE) is often required to augment engineering or administrative controls or is used as a stand-alone control when engineering and administrative controls are not feasible. When properly selected and used, PPE can be effective in eliminating or minimizing individual exposures to hazardous materials and physical hazards encountered in many different laboratory environments.

The PPE program is designed to:

1. Establish requirements for workplace PPE assessments, training, provision, use and maintenance/replacement/disposal of PPE.
2. Assign responsibilities for program implementation to all stakeholders regarding PPE management.
3. Comply with California Occupational Safety and Health (Cal/OSHA), 8 CCR 3380, Personal Protective Devices and other regulations.
4. Comply with the University of California, Office of the President (UCOP) PPE policy.

2. Scope

The use of appropriate personal protective safety equipment applies to faculty, staff, students, visitors and volunteers who are performing tasks or entering in research areas that require specific PPE.

3. Definitions

Academic courses which include laboratory, shop or field work: are required to indicate PPE requirements (including specifications of the type of PPE) as part of the course syllabus. The PPE items shall be the responsibility of the student to obtain and wear as part of the class. Common communal PPE such as thermal protective gloves, welding aprons, face shields, etc., will be provided by the sponsoring Department. The instructor of record for a course, or designee, is responsible for ensuring that students are familiar with and properly using required protective devices.

Attire when occupying a Laboratory/Technical Area: Full length pants (or equivalent) and closed toe/heel shoe attire must be worn at all times by all workers and students who are occupying or entering a laboratory/technical area. The area of skin between the pants and shoe should not be exposed.

EHS Laboratory PPE Coordinator: Responsible individual for administrating the selection, fitting, laundering and dispersion of PPE to laboratories on campus.

Hazard: A potential for harm. The term is often associated with an agent, condition, or activity (a natural phenomenon, chemical, and mixture of substances, process involving substances, source of energy or a situation or event) that if left uncontrolled, could result in an injury, illness, loss of property or damage to the environment. Hazards are intrinsic properties of agents, conditions or activities.

Hazard Analysis: A term used to express the complete process of hazard identification, evaluation and control**.**

Hazard Control: A barrier; such as a device, measure or limit; used to minimize the potential consequences associated with a hazard.

Hazard Evaluation: The qualitative and, whenever possible, quantitative description of the inherent properties of an agent or situation having the potential to cause adverse effects.

Hazardous Materials: Chemical or biological agents that have been generally accepted as a health or physical hazard. Unsealed radioactive materials are also included as “hazardous materials.” Additional guidance is included in the UCOP PPE policy - http://policy.ucop.edu/doc/3500597/PersonalProtectiveEquip.

Job Hazard Analysis: A systematic approach to address hazards by looking at a task and focusing on the relationship between the laboratory worker, the task, the tools and the work environment to identify the hazards and reduce the risks.

Laboratory Coat Laundry Service: There are six sites on campus (including UCI Medical Center) for workers to drop off their dirty lab coats for laundering and pick up when clean. Each coat will be marked with the coat’s unique identifying number, the individual’s name and lab location, and a laundry barcode specific to the designated laundry location. Cleaned coats will be returned to the designated laundry site.

Laboratory Hazard Assessment Tool (LHAT): An online tool for supervisors and employees to use, which identifies lab-specific hazards and the PPE needs for their laboratory workers. The LHAT can only be accessed via an individual’s UCInetID and Password. https://ehs.ucop.edu/lhat/. The LHAT provides a summary of the PPE needs of laboratory/technical areas and provides/documents training on basic lab coat and eyewear use and maintenance. LHAT allows a research worker to manage their activities in the lab or

technical research area in a way that permits them to ensure safe research.

Laboratory/Technical Areas: A location where the use or storage of hazardous materials occurs or where equipment may present a physical or chemical hazard. It includes, but is not limited to:

- Research laboratories
- Teaching laboratories
- QA/QC and analytical laboratories
- Stock rooms
- Storage rooms
- Waste accumulation areas/locations
- Cold rooms
- Machine and other workshops
- Vivaria
- Visual/performing arts studios and shops

Personal Protective Equipment (PPE): Personal protective equipment is worn to minimize exposure to a variety of hazards. Examples of PPE include such items as lab coats, gloves, foot protection (steel-toed shoes), eye protection (safety glasses or goggles), protective hearing devices (earplugs, muffs), hard hats, respirators, fall protection harnesses, etc.

Body Protection: Protective clothing, such as lab coats, should be worn when handling hazardous materials. This will prevent the contamination of skin and clothing.

Eye/Face Protection: Equipment, such as impact glasses, chemical splash goggles, and face shields, designed to provide protection to the face and eyes during exposure to such hazards as flying particles, molten metal or sparks, liquid chemicals, acids or caustic liquids or potentially injurious light radiation (i.e., lasers, welding, etc.).

Foot Protection: Equipment designed to provide protection to the feet and toes during exposure to situations with the potential for foot injuries such as falling or rolling objects, chemical or liquid exposures, piercing objects through the sole or uppers and/or where the employee's feet are exposed to electrical hazards.

Hand Protection: Equipment designed to provide protection to the hands during exposure to potential hazards such as sharp objects, abrasive surfaces, temperature extremes and chemical contact. Hand protection is selected based upon the hazard and performance characteristics of the gloves. (e.g., the Safety Data Sheets (SDSs) for the material should be referenced when determining the type of glove to be used. The manufacturer for specific glove guides should also be consulted to determine appropriate glove type).

Physical Hazards: Substances, equipment or activities that can threaten physical safety. Physical hazards can include but are not limited to: impact (falling objects), fall hazards, extreme pressures, temperature extremes (heat/cold), and radiation (ionizing and non-ionizing), noise, vibration, electrical, light (optical), welding, cutting and brazing.

Risk: Takes into account the probability or likelihood that a consequence will occur and the severity of the consequence should it occur. An unlikely hazard with the potential to cause death is a higher risk than an unlikely hazard which would cause temporary illness.

Standard Operating Procedures (SOPs): A written series of steps that can be followed to correctly and safely obtain a desired outcome. In laboratories, SOPs are typically developed for repetitive procedures which are known to have associated hazards where injury, property loss or productivity loss could result if the steps are not followed precisely.

Student: An individual enrolled in an academic class where hazardous materials are handled and stored.

Supervisor: An employee who may have authority to hire personnel, evaluate performance, direct work assignments, apply progressive discipline and direct resources to correct identified

safety issues. This includes a Principal Investigator (PI), area manager, unit manager, project manager, superintendent and foreman/person. Unless specified in writing, the default "supervisor" in laboratory/technical areas is the Principal Investigator. Throughout this document, the term Supervisor refers to any of the following roles PI/ Laboratory Supervisor/Teaching Assistant titles/ Responsible Person for the activities in the laboratory.

Use or Storage: For the purposes of this program, "use or storage" includes those operations where workers are directly manipulating hazardous materials, adjacent to or in proximity to a hazard or in areas where there is a reasonable risk of exposure. Reasonable risk of exposure includes all activities identified in the hazard assessment that pose an exposure risk to the worker.

Worker: This is an individual who actively performs work functions with hazardous materials or equipment in a laboratory/technical area. A "worker" may be faculty, staff, student volunteers assisting in a non-academic class, or visitors/visiting scholars. For the purpose of this definition, "worker" excludes individuals who only passively participate in tours, lectures, conferences, etc. All UC Irvine laboratory workers are required to acknowledge the LHAT.

Teaching Assistant (TA): An academically qualified and registered graduate student in full-time residence chosen for excellent scholarship and for promise as a teacher, who is assigned to assist in the delivery of instruction under the active supervision of a faculty member. A majority of graduate students who perform instructional functions are assigned to the Teaching Assistant title; their responsibilities are to assist the supervising faculty member by conducting discussion, laboratory or quiz sections that supplement faculty lectures, assist in the instruction of any lower-division course, or may be assigned to conduct the entire instruction of a lower-division course. In academic courses, Teaching Assistants may be placed in the position of authority for a classroom and conduct instruction for a course.

4. Responsibilities

Campus Chancellor: has overall responsibility for compliance with health and safety requirements at all facilities and programs under her/his control.

Vice Chancellors/Directors/Deans/Departments Chairs: are responsible for communicating and promoting this program within their unit and enforcing the Policy in areas under their control.

Department Requirements: Each department may disseminate and enforce more stringent PPE requirements than those identified by the laboratory or unit's work area through the hazard assessment or Standard Operating Procedures (SOP's) (e.g., requiring lab members to don lab coats and safety eyewear at the threshold of labs).

Departmental Support: Supporting the Supervisor/Principal Investigator (PI)/Lab Supervisor/Faculty/ Lecturer/TA, or his/her designee by implementing department- wide programs and/or services (e.g., acquisition of lab coat laundering services, requiring safety data sheets for academic courses as part of the syllabi).

Campus, Academic Schools, Laboratories and/or Laboratory Safety Committee: is responsible for promoting a safe working environment in all research and teaching laboratories on campus.

Supervisors: are responsible for complying with this policy, ensuring their staff complies with this policy, and performing a Hazard Assessment to identify the proper PPE needed through completion of the LHAT. Supervisors are also responsible for ensuring their staff receives both the required PPE identified in the hazard assessment and documenting their training on the proper use of their PPE.

Noncompliance with the policy is handled in accordance with Personnel Policies for Staff Members (PPSM) policies 62-65 pertaining to disciplinary actions; Academic Personnel Manual (APM) policies 015- 016 pertaining to the Faculty Code of Conduct and administration of discipline; and APM 140 and 150 pertaining to Non-Senate Academic Appointees.

Workers: are responsible for knowing the PPE requirements for areas in which they work or enter, and for properly wearing PPE as established in this policy and in the hazard assessment. All workers are responsible for completing PPE training and acknowledging the LHAT, and for knowing how to use PPE, how to properly put on and take off required PPE, and how to care for and maintain PPE. They are responsible for informing others in the area of these requirements and reporting unsafe conditions to their Supervisor or EHS. Workers are responsible for notifying the Supervisor if the hazards of the task change and wearing only the PPE assigned for a specific job assignment. Workers are not responsible for purchasing their own PPE. As applicable, a staff employee may address issues of noncompliance with this Policy through the complaint resolution processes described in PPSM 70 and II-70 (Complaint Resolution) and PPSM 71 and II-70 (Resolution of Concerns) or Collective Bargaining Agreement. Workers are responsible for consulting the Safety Data Sheets when handling hazardous materials. Safety Data Sheets provide and list the appropriate safety equipment needed when handling a hazardous material.

Training: Completing site-specific PPE training provided by the Supervisor which includes demonstrating the ability to use PPE properly and certifying the hazard assessment through the LHAT.

Use: Using correct and properly fitted PPE under the conditions identified by the Supervisor on the LHAT, as well as wearing proper attire when occupying a Laboratory/Technical Area.

Maintenance, Replacement and Disposal of PPE: Maintaining, replacing and disposing of PPE as trained, and informing their Supervisor when PPE is damaged or worn out. Avoid altering the PPE as this may compromise the effectiveness of the PPE.

Students in academic courses: are responsible for obtaining course-required PPE as noted in the course syllabus, and wearing it as directed by the TA/instructor.

Training: Completing site-specific PPE training provided by the Supervisor or his/her designee (e.g., Teaching Assistant (TA)), which includes demonstrating the ability to use PPE properly.

Use: Using the correct and properly fitted PPE under the conditions identified by the Supervisor in the LHAT or as part of the course syllabus. All academic courses on campus which include laboratory, shop or field work are required to indicate PPE requirements including specifications of the type of PPE, as well as wearing proper attire when occupying a Laboratory/Technical Area.

A student not wearing PPE in a laboratory/technical area as required in their course syllabus may not participate in lab activities until such PPE is worn. Recommendations for laundering of lab coats belonging to students in teaching laboratories are dependent on the quantities and types of materials used. Written instructions for laundering will be developed with guidance from EHS and provided by course instructors.

Maintenance, Replacement and Disposal of PPE: Maintaining, replacing and disposing of PPE as trained is the responsibility of each student, as is informing his/her Supervisor (e.g. TA) when PPE is damaged, contaminated or worn out. In the event of an incident when PPE is damaged or contaminated during an academic course, or a potential exposure occurs, this will need to be reported to EHS to ensure the student receives proper medical treatment. Avoid altering the PPE as this may compromise the effectiveness of the PPE.

Environmental Health and Safety (EHS): is responsible for the development and maintenance of the UC Irvine Research Laboratory PPE Program, including:

Implementation Tools: Developing and distributing PPE assessment and training tools (LHAT).

Technical Assistance: When requested, assist Supervisors, PI/Lab Supervisors or his/her designees with PPE assessments and training.

Quality Assurance Checks: Conducting periodic quality assurance checks of PPE compliance in work are.

In cases where work activities pose an immediate danger to life or health, designated EHS staff have the responsibility and authority to order the temporary cessation of the activity until the hazardous condition is abated.

Academic Personnel or Staff Human Resources Offices: are responsible for all employee and labor relations issues, including interpretation and clarification of Personnel Policies and Collective Bargaining Agreements related to this Policy.

5. Program Components

The University of California is committed to providing a healthy and safe working environment for all members of the campus community. It is University policy to comply with all applicable health, safety and environmental protection laws, regulations and requirements. The Occupational Safety and Health Administration (OSHA) ensures workplace safety through the enforcement of established federal legislation and the California Occupational Safety and Health Administration (Cal OSHA) operates as the acting regulatory enforcement body under the direction of the OSHA act.

Title 8 California Code of Regulations, General Safety Orders and Title 29 of the Code of Federal Regulations, Part 1910, 132 Subpart 1. Personal Protective Equipment, states that *"protective equipment, including personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact."* Pursuant to this regulation, and in an effort to prevent workplace injuries and illnesses, UC Irvine has established this program regarding Personal Protective Equipment (PPE) requirements for all campus research laboratory faculty, staff and students.

The following requirements pertain to all research and teaching laboratory environments utilizing hazardous chemical, hazardous biological or unsealed radiological materials.

Each Supervisor must assess the laboratory space to determine if the hazards are present, or are likely to be present, which necessitates the use of personal protective equipment by completing hazard assessment via the campus Laboratory Hazard Assessment Tool (LHAT). Laboratories that solely involve mechanical, computer, lasers or other non-ionizing radiation or electrical operations are also required to complete a hazard assessment through the campus LHAT. Due to the widely diverse, ever- changing tasks and conditions that exist throughout the university laboratories/ technical areas, everyone is required to re-certify the Laboratory Hazard Assessment Tool when new hazards are introduced or identified, work processes have changed, new locations are added or at least every three years. If you strongly believe your laboratory has large hazard-free areas, including physical hazards, that may not require PPE, you must obtain an approval and/or exception, with appropriate labeling from EHS.

EHS, in cooperation with regulatory mandated safety committees, has the final authority for determining whether any specific material is classified as hazardous. Deviations from these requirements, including the defining of specific hazardous materials use areas within rooms, may be permitted under certain conditions and will require express, written approval from EHS.

Minimum Requirements per UC policy:

- Full length pants, or the equivalent, and closed-toe / heel shoes must be worn at all times by all individuals that are occupying the laboratory area. The area of skin between the shoe and ankle should not be exposed.
- Protective gloves must be worn while utilizing any hazardous chemical, biological or unsealed radiological material. These gloves must be appropriate for the material being used. The Safety Data Sheet (SDS) for the material should be referenced when determining the effectiveness of the type of glove to be used. There is not one type of glove that can protect against all hazards; choose the correct glove based on the hazard(s) present. Supervisors are responsible for choosing the appropriate PPE for the tasks and hazard. If assistance is needed for completing an assessment, contact EHS.
- Laboratory coats, or the equivalent, are required to be worn while working with or adjacent to procedures utilizing hazardous chemical, biological or unsealed radiological materials. These laboratory coats must be appropriately sized for the individual and be buttoned to their full length. Laboratory coat sleeves must be of a sufficient length to prevent skin exposure while wearing gloves.
- Flame resistant (FR) laboratory coats must be worn when working with any amount of pyrophoric materials or flammable liquids near ignition sources. FR laboratory coats must be worn when working with flammable liquids in amounts that pose a greater than de minimus risk as determined by a hazard assessment through the LHAT. It is recommended that cotton (or other non- synthetic material) clothing be worn during these procedures to minimize injury in the case of a fire emergency.
- Laboratory coats may not be worn outside of a laboratory unless the individual is traveling directly to an adjacent laboratory work area. Protective gloves must not be worn in any public area outside of the laboratory (i.e., hallways, elevators, offices). Gloves should also be removed prior to handling any equipment that could likely result in cross-contamination (e.g., telephones, computer work stations, etc.).
- An outside vendor provides professional laundry services to UC Irvine-owned coats as needed to maintain the hygiene of laboratory coats. They may not be cleaned by staff members or students at private residences or public laundry facilities. Any clothing that becomes contaminated with hazardous materials must be decontaminated before it leaves the laboratory.

- Eye protection or equivalent engineering controls must be used while handling any hazardous chemical, biological or unsealed radiological materials. All eye protection equipment must be American National Standards Institute (ANSI) approved and appropriate for the work being done. Typical prescription spectacles are not suitable eye protection. Prescription safety glasses/goggles are available through individual campus procurement offices. Protective eyewear may be removed when using optical microscopes, or similar instruments, requiring close contact between the eyes and the eyepieces. Supervisors are required to assess the workplace to determine if hazards are present or likely to be present that necessitate the use of the PPE, provide employees with appropriate PPE and training, and require the usage and maintenance of the PPE.
- Some operations and procedures may warrant further PPE as indicated by the SDS, the Standard Operating Procedures for the material being used, facility policies, regulatory requirements and the EHS LHAT.
- Requirements for pyrophoric users: Hand protection requirements for the use of liquid pyrophoric chemicals (outside an inert glove box) include wearing/donning the appropriate chemical resistant outer gloves (Neoprene) and fire resistant (FR) inner gloves/liners. Handling includes opening shipping containers, moving agents from storage to use areas, and the transfer into and out of glove boxes or other protected manipulation equipment. This thermal hand protection – neoprene outer gloves and fire-resistant inner gloves/liners – is also needed in the quenching or inerting of waste products and excess reagents when done or moved outside of a glove box. “Gloves or glove liners composed of the tight weave, inherently flame-resistant materials Kevlar®, Nomex®, Kerinel®, or PBI®, or a blend of those materials, of sufficient thickness to prevent or minimize burn injuries to the extent feasible. Gloves or glove liners meeting MIL-DTL- 81188C are also acceptable.”

  Acceptable glove liners include the following:

  - Ansell Kevlar® Goldknit® Lightweight 70-200*****
  - Hanz Extremity Wear Nomex© Utility 2257C and 2259C.*****
  - Other Kevlar® gloves with the fabric basis weight of a minimum of 7.7 ounces per square yard and if one layer of the material has a minimum of 35 mils in thickness, and
  - Other Nomex® gloves meeting the specifications for Hanz Extremity Wear Nomex® Utility 2257G and 2259C.*****

  Laboratories must have these gloves available and use them for this specific research activity. This requirement may not be superseded by reference to a Safety Data Sheet (SDS).

Cal/OSHA has identified FR gloves by material type and testing criteria that are acceptable. The purchase of any other type of material available needs to be submitted to Cal/OSHA. Specific testing protocols and test data must be approved by Cal/OSHA. Please contact EHS to discuss any alternate FR gloves and the subsequent approval process.

Laboratory PPE Distribution Program

UC Irvine has a centrally funded PPE Distribution Program to provide laboratories with the minimum personal protective equipment (PPE). Each eligible laboratory member will receive, at a minimum, one laboratory coat as recommended in the LHAT, one pair of safety glasses and one pair of splash goggles for the duration of their time at UC Irvine.

How to Set up a Hazard Assessment

All supervisors must access and authenticate the LHAT system in order to allow admittance for laboratory personnel. As a Principal Investigator/Supervisor/Laboratory Supervisor/TA/Responsible Person, you may choose to complete the hazard assessment or delegate the task to your Safety Representative. However, the Principal Investigator/ Supervisor/Laboratory Supervisor//TA/Responsible Person must certify the LHAT on behalf of the Regents of the University of California that reflect the activities in their laboratories.

Instructions for Principal Investigators/Supervisors/ Laboratory Supervisors/ TAs/Responsible Person:

Access the LHAT system (https://ehs.ucop.edu/lhat) securely through In Common by selecting "University of California, Irvine". Log in using your UCInetID and Password.

- Log into LHAT (https://ehs.ucop.edu/lhat)
- Add lab personnel to roster
- Denote Safety Representative or Laboratory Manager as "Delegate" (Optional)
- PI or Delegate completes hazard assessment (takes 15-30 min)
- Certify assessment (PI/Supervisors/ Laboratory Supervisor/TA only)
- Principal Investigator/Supervisors/Laboratory Supervisor/TA/Responsible Person or Delegate invites lab personnel to complete LHAT

Detailed instructions for Principal Investigators/Lab Hazard Contacts:
https://www.ehs.uci.edu/research-safety/ppe/_pdf/lhat-user-guide.pdf
https://www.ehs.uci.edu/research-safety/ppe/_pdf/lhat-user-guide.pdf

How to complete the LHAT and obtain PPE
Instructions for Students/Employees/Lab Members/Visitors

Access the LHAT system (https://ehs.ucop.edu/lhat) securely through In Common by selecting "University of California, Irvine". Log in using your UCInetID and Password.

- Ask your PI/Supervisor/Laboratory Supervisor/TA/Responsible Person or Delegate to add you to the lab group (Supervisors must create Lab Group first)
- Once you are invited by the PI/Supervisor/Laboratory Supervisor/TA/Responsible Person or Delegate, log into LHAT at https://ehs.ucop.edu/lhat
- Review lab specific hazard assessment
- Complete training and quiz
- Refer to PPE Voucher, Lab Coat Fitting Guide and Virtual PPE Fitting Form:

  https://www.ehs.uci.edu/research-safety/ppe/_pdf/lab-coat-fitting-guide.pdf

  https://www.ehs.uci.edu/research-safety/ppe/_pdf/ppe-voucher-sample.pdf

  https://www.ehs.uci.edu/research-safety/ppe/virtual-ppe.php

EHS will contact you when PPE is ready to be picked up (4600 Health Sciences Road (Building 41 on the campus map): Detailed Instructions for Lab Members: https://www.ehs.uci.edu/research-safety/ppe/_pdf/lhat-lab-member-instructions.pdf

If you have any problems or questions, contact the EHS Laboratory PPE Coordinator at ehs- ppe@uci.edu or 949-824-6200.

PPE Eligibility

Any researcher at UC Irvine (i.e., paid or unpaid undergrads, grad students, post-docs, and staff) that will be working in the laboratory at any given time is eligible to be part of this program. The following requirements are necessary to be eligible for PPE:

- Individual must be added to the lab group
- Individual must be certified on your PI/Supervisor/Laboratory Supervisor/TA/Responsible Person's LHAT https://ehs.ucop.edu/lhat/, and
- Complete safety training requirements as indicated on the Safety Training Self-Assessment results in UC Learning Center**.**

Volunteers who will be working in the laboratory are also eligible to obtain PPE through UC Irvine. As stated in the UCOP policy: "PPE is required when working with, or adjacent to, hazardous material use areas within a laboratory/technical area."

NOTE: If you are not a UC Irvine student or staff member (i.e., visiting scholars, volunteers, etc.), you must have an active UCInetID. This system is your electronic identification used for many online services at the University of California, Irvine. For more information please, visit this site: https://www.oit.uci.edu/services/accounts-passwords/ucinetids/

For people **not eligible** for this program, PPE may be obtained through the UC Irvine Bookstore Laboratory members should not use other laboratory members' lab coats. Regulations require that individuals be properly fitted and adhere to the PPE standard and requirements as identified in the LHAT. Cal/OSHA Title 8 regulations Section 3380, states that no coat should be used in the lab as a "general use" lab coat. All lab coats have an expiration date of 3-5 years depending on their use and condition. If your lab coat has any holes or tears, and/or is otherwise damaged beyond repair, contact the EHS Laboratory PPE Coordinator at ehs- ppe@uci.edu or 949-824-6200 for removal from the campus coat inventory and replacement.

If laboratories have lab coats provided by the PPE distribution program that are not being used, please return them to the "Leaving UCI" hamper available at any laundry location on campus or contact the EHS Laboratory PPE Coordinator.

How To Request Additional PPE
To request additional PPE, please contact the EHS Laboratory PPE Coordinator at ehs-ppe@uci.edu or 949-824-6200.

Reasons to request additional PPE include:

- Torn or damaged coats
- Contaminated coats
- Contaminated eyewear
- Different coat sizes needed due to pregnancy or medical conditions
- Different coat sizes needed based on comfort issues
- Broken or damaged eyewear
- New projects with new hazards
- Additional rooms or new locations not previously listed
- Dedicated coats to a particular project and/or prevention of cross contamination

Prescription Safety Eyewear
EHS provides safety glasses that can be placed over the researcher's personal prescription glasses or prescription safety glasses if an individual is eligible and funding is available.

The Prescription Eyewear Program is first come, first serve and you must meet certain criteria to be eligible for funding.**

Eligibility requirements include but are not limited to:

- Completion of LHAT training
- Having been fitted for and received all recommended PPE
- Completion of a questionnaire to gather additional information about hazards in the laboratory
- Having a copy of current of eyeglass prescription (within the last 2 years)

If an individual is selected for prescription safety eyewear to be funded by EHS, the Laboratory PPE Coordinator will issue a referral and provide instructions for fitting.

Referrals have an expiration date of 30-60 days, depending on date of issue. If referrals are not used and have expired, referrals may be reissued if funding is still available.

For more information about the EHS-funded Prescription Safety Eyewear Program, please contact the Laboratory PPE Coordinator at ehs-ppe@uci.edu or 949-824-6200.

**This may be subject to change based on union contract agreements. Check with the campus Human Resources Officer for details.*

***Interest in the program and meeting eligibility requirements does not guarantee prescription safety eyewear; referrals are given on a first come, first serve basis.*

Lab Coat Laundry Procedures
Lab coats owned by UC Irvine are laundered by an outside vendor. It is important that coats are not laundered at home; if not laundered properly, the fibers and/or safety properties of the coat may be damaged. Flame Resistant (FR) apparel should be washed using soft water. Hard water adversely

affects cleaning, resulting in increased detergent usage. Hard water contains mineral salts that can form insoluble deposits on the surface of fabrics. Sufficient buildup can negate the FR characteristics of the garment and may serve as fuel if garments are exposed to an ignition source. Using items like starch, fabric softener and other laundry additives can coat the fiber and mask the FR performance or serve as fuel in the case of combustion. Therefore, their use is not recommended and laboratory coats and other PPE should never be brought home to launder. Regulations dictate that the employer must provide a means for cleaning and decontaminating the PPE.

Any member of a UC Irvine research laboratory who has received coats through EHS qualifies for the lab coat laundry program. Non-UC Irvine owned lab coats cannot be laundered through the UC Irvine program as every single coat provided in the program must have a barcode with a specific campus laundry location. Without this barcode, the professional laundry company does not have a way to track the coats back to a campus laundry location or the institution that it comes from.

Getting Your Coat Cleaned

Contaminated coat procedures: All laboratory coats must be decontaminated prior to laundry. Small splashes of contamination should first be blotted before placing the coat into the laundry bin. Grossly contaminated laboratory coats should be treated as hazardous waste. Carefully insert your contaminated coat into a leak-proof bag while wearing gloves to protect yourself from the contamination. Properly doff your gloves and dispose of them. Next, securely close the bag and immediately affix a completed hazardous waste label onto the bag. Text a hazardous waste pickup to hwp@uci.edu or 949- 824-6200 to arrange for the item to be picked up during the next hazardous waste pick-up
Do not place soiled coats in red biohazardous bags inside the laundry bin; placing coats in biohazardous red bags means that your coats are contaminated and should be incinerated through our biomedical waste program.

If a coat is potentially contaminated with hazardous material, DO NOT send it in for laundering. Contact the EHS Laboratory PPE Coordinator at ehs-ppe@uci.edu for instructions.

For chemical waste: https://www.ehs.uci.edu/enviro/haz-waste/text-a-pickup.php

For biomedical waste: https://www.ehs.uci.edu/enviro/haz-waste/text-a-pickup.php

For radioactive waste: https://app.smartsheet.com/b/form/3ff1b98f0e5f48c7875f304aa9ee1fed

Laboratory Coat Laundering Process

- There are six laundry drop off/pick up sites on campus:
  - Medical Sciences C Loading Dock (Med Sci C-142)
  - Engineering Tower Loading Dock (ET 105)
  - Frederick Reines Hall (B003D)
  - McGaugh Hall Loading Dock (MH 1439D)
  - EHS (Room 109)
  - Building 55 (UC Irvine Medical Center, Orange)

- Empty pockets and place dry coat in the designated laundry bin (identified when you were fitted). Remove all personal belongings from your lab coat pockets especially pens and sharpies. If these materials are left in your pockets, they will damage your coats and the rest of the coats from UC Irvine. Ideally, you want to launder one coat at a time so you don't find yourself without a coat.

- Laundry is picked up on Wednesday. During major holidays, the drop off/pick up day will change to Tuesday.
- All clean lab coats are returned on hangers to a coat rack at your designated laundry location (identified during your fitting). Check laundry locations weekly for your laundered coats; clean lab coats are returned 2-3 weeks after pick up.
- If you dropped off your coat in the bin for laundering and it has been over 3 weeks since your drop off, please contact the EHS Laboratory PPE Coordinator at ehs- ppe@uci.edu or 949-824-6200 to have the coat tracked or replaced.

Disposal of your Laboratory Coat
Your laboratory coat should be retired when it is permanently soiled, notably stained, perforated with holes, and/or otherwise damaged beyond repair. The laboratory coat should be removed from the laundry inventory and destroyed. For more information, contact the EHS Laboratory PPE Coordinator ehs-ppe@uci.edu or 949-824-6200 for disposal and replacement.

Laboratory Coat Alterations
EHS does not allow alterations, including any patches, emblems, or custom embroidery to lab coats provided by the PPE Distribution Program. Altering lab coats damages the material and compromises the integrity of the lab coat; lab coats altered in any way can no longer be reused.

Care and Disposal of your Protective Eyewear
Clean your safety glasses or goggles daily with a soft cloth and store them in a clean, dry place where they will not be damaged. Inspect your glasses or goggles to make sure the lenses are firmly attached and undamaged. Make sure the face seal around goggles remains flexible and provides a good seal to your face and that the elastic band is not damaged. Do not hang goggles by their straps; over time, they will lose their elasticity, compromising their effectiveness. Replace scratched, pitted, broken, bent or ill-fitting safety eyewear.

If your eyewear should become damaged or is no longer functional, discard it in the regular trash. If the eyewear is contaminated with a hazardous material, try to decontaminate before placing them into the trash, or consider sending them through our campus hazardous waste program.

If you break/scratch/lose your safety glasses, contact the EHS Laboratory PPE Coordinator at ehs-ppe@uci.edu. Our department will provide a replacement pair as long as we have them available. Certain eyewear may change or may no longer be available.

Hand Protection:
Gloves are not provided as part of the UC Irvine PPE Distribution Program* but you should be familiar on how to perform a risk assessment before making your selection. Supervisors are required to assess the workplace using the LHAT to determine if protective gloves are necessary and provide the employee with the appropriate gloves and training. Not every glove is good for every application. Common glove materials include neoprene, polyvinyl chloride, nitrile, butyl and natural rubbers (latex). These materials differ in their resistance to various substances. Chemicals eventually permeate all glove materials. However, gloves are safe for limited periods if one knows the specific use and glove characteristics (such as thickness and permeation rate and time).

Wear proper protective gloves for potential contact with corrosive or toxic materials, materials of unknown toxicity, sharp edged objects and very hot or cold materials. Select gloves based on the material handled, the particular hazard involved and their suitability for the operation conducted. Consider these factors when choosing the right glove for the task:

- Chemical type and concentration
- Temperature extreme
- Equipment used (sharps, piercing object)
- pH
- Toxicity
- Duration of contact

Use disposable gloves for incidental contact. Consider double gloving (the wearing of two gloves on each hand) when handling highly toxic or carcinogenic materials. Use heavy- duty gloves for non-incidental contact and gross contamination.

Wear sturdier gloves such as leather for handling broken glassware, inserting glass tubes into rubber stoppers, and similar operations where you do not need protection from chemicals.

Use insulated gloves when working at temperature extremes. Do not wear woven gloves while working with cryogens as the liquid may work its way through the glove to your hand. Use gloves specifically designed for work with cryogens. Gloves worn for working with elevated temperatures may not be appropriate for working with extremely low temperature liquids.

**EHS PPE Distribution Program provides pyrophoric gloves to lab workers when use of pyrophoric chemicals is indicated on the Hazard Assessment in LHAT.*

6. Reporting Requirements

None

7. References

State and Federal Regulation:

8 CCR 3203 Injury Illness Prevention Program: http://www.dir.ca.gov/title8/3203.html 8 CCR 3380 Personal Protective Devices: http://www.dir.ca.gov/title8/3380.html

8 CCR 3381 Head Protection: http://www.dir.ca.gov/title8/3381.html

8 CCR 3382 Eye and Face Protection: http://www.dir.ca.gov/title8/3382.html 8 CCR 3383 Body Protection: http://www.dir.ca.gov/title8/3383.html

8 CCR 3384 Hand Protection: http://www.dir.ca.gov/title8/3384.html

8 CCR 3385 Foot Protection: http://www.dir.ca.gov/title8/3385.html

8 CCR 5098 Hearing Protection http://www.dir.ca.gov/title8/5098.html

8 CCR 5144 Respiratory Protective Equipment: http://www.dir.ca.gov/title8/5144.html

8 CCR 5191 Occupational Exposure to Hazardous Chemicals in Laboratories: http://www.dir.ca.gov/title8/5191.html

8 CCR 5193 Bloodborne Pathogens: https://www.dir.ca.gov/title8/5193.html

8 CCR 5194 Hazard Communication: https://www.dir.ca.gov/title8/5194.html

8 CCR 5200 –5220 Regulated Carcinogens: https://www.dir.ca.gov/title8/sb7g16a110.html

10 CFR 19 Notices, Instructions, and Reports to Workers: Inspections and Investigations:

http://www.nrc.gov/reading-rm/doc-collections/cfr/part019/

10 CFR 20 Standards for Protection against Radiation:http://www.nrc.gov/reading-rm/doc-collections/cfr/part020/

California Labor Code Section 6400-6413.5:
https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=LAB&sectionNum=6400

Biosafety in Microbiological and Biomedical Laboratories (BMBL):
http://www.nap.edu/openbook.php?record_id=12654&page=1

5th Edition (December 2009): http://www.cdc.gov/biosafety/publications/bmbl5/

UCOP:

PPE policy: http://policy.ucop.edu/doc/3500597/PersonalProtectiveEquip

UC Irvine:

Biosafety Manual – https://www.ehs.uci.edu/programs/_pdf/biosafety/biosafety-manual.pdf

Chemical Hygiene Plan https://www.ehs.uci.edu/research-safety/chemical-safety/_pdf/chemical-hygiene-plan.pdf

Radiation Safety Manual – https://www.ehs.uci.edu/programs/_pdf/rad-safety/ionizing-radiation-safety.pdf

Respiratory Protection Program – https://www.ehs.uci.edu/programs/_pdf/industrial-hygiene/Respiratory-Protection.pdf

Visitors & Minors in Labs and Shops- https://www.ehs.uci.edu/programs/_pdf/lab-res/visitors-minors-in-labs-and-shops.pdf