



Policy on Assurance of Laboratory Safety Compliance **DRAFT**

Responsible Official:	Assistant Vice Chancellor, Campus Safety
Responsible Office:	Campus Safety
Issuance Date:	TBD
Effective Date:	TBD
Summary:	In order to ensure a healthy and safe working environment in campus laboratories, this policy establishes a procedure for correcting deficiencies and issues of non-compliance.
Scope:	All Principal Investigators (PIs) and anyone working in a UC Merced laboratory.

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I. REFERENCES AND RESOURCES

Occupational Safety and Health Administration (OSHA):

[Occupational Exposure to hazardous Chemicals in Laboratories, \(OSHA Laboratory Standard\)](#)

University of California Policies:

675.02 Controlled Substance Policy

<http://policy.ucop.edu/doc/3520503/BFB-BUS-50>

675.03 Tax Free Ethanol Policy

<http://policy.ucop.edu/doc/3220474/BFB-BUS-2>

675.04 Minors in the Lab

http://policies.ucmerced.edu/sites/policies.ucmerced.edu/files/page/documents/minors_in_labs_and_shops_june_2013.pdf

675.05 Personnel Protective Equipment Policy

http://policies.ucmerced.edu/sites/policies.ucmerced.edu/files/page/documents/personalprotectiveequipment_june_2013.pdf

675.06 Laboratory Safety Training Policy

http://policies.ucmerced.edu/sites/policies.ucmerced.edu/files/page/documents/labsafetytraining_june_2013.pdf

UC Merced Guidelines:

Lab Safety information & UCM Laboratory Safety Plan

<http://ehs.ucmerced.edu/researchers-labs>

II. POLICY/PROCEDURE SUMMARY & SCOPE

The University of California Merced is committed to a laboratory safety program that is based on making safety an integral part of research and instructional activities. The purpose of this Policy is to assure a healthy and safe working environment in UC Merced laboratories for all members of the campus community by outlining minimum safety procedures and requirements. This policy also establishes a procedure for correcting deficiencies and issues of non-compliance. All individuals directly involved in or in support of instructional and research laboratory activities are responsible for and will be held accountable for the implementation and adherence to this policy.

III. DEFINITIONS

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.

Supervisor: The principal investigator (PI), any faculty or employee, who oversees, directs work assignments, or is responsible for the operations of a UC Merced lab.

Worker: Any individual who actively performs work functions in a laboratory. A worker may be a faculty, staff, student, postdoctoral scholar, visitor, volunteer, or anyone else assisting or performing an experiment, research, or any process in a laboratory.

IV. POLICY TEXT

A. Compliance / Management Responsibilities

1. Environmental Health and Safety

The Director of Environmental Health & Safety is responsible for establishing safety and compliance programs which support the PI, supervisors and workers in their instructional and research activities. This includes, but is not limited to:

- a. Implementing required laboratory safety compliance programs including laboratory hazard and training assessments, fitting of Personal Protective Equipment (PPE), chemical inventory maintenance, etc.
- b. Providing general laboratory safety training sessions to PIs and all laboratory personnel.
- c. Conducting inspections and monitoring of safety practices and compliance in the laboratories.
- d. Providing timely reports of laboratory safety inspection findings to the respective PI or other supervisor, and work with PI to implement corrective action plans.
- e. Advising and aiding PIs and laboratory personnel on any and all general safety practices, and providing resources for PIs to achieve safety compliance in the laboratory.

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- f. Communicating to faculty, deans, Provost, the Vice Chancellor for Research, and the Assistant Vice Chancellor for Campus Safety the existence of chronic unsafe and/or noncompliant practices per the procedures outlined in section V. of this policy.

EH&S in consultation with the Assistant Vice Chancellor Campus Safety, has the authority to shut down a lab if there is an imminent serious danger to people or the facility.

2. Compliance Committees

Compliance committees shall have the duty and authority, as outlined in their by-laws, to review and approve research protocols under their auspices and, as need be, take effective steps to impose restrictions including revocation of authorized uses in response to chronic issues of noncompliance and/or safety infractions. These compliance committees have the duty and authority to revoke for cause, as warranted, any special use authorization.

Compliance committees, include but are not limited to:

- a. Chemical Safety Committee
- b. Laboratory Safety Committee
- c. Institutional Review Board
- d. Institutional Biosafety Committee
- e. Institutional Animal Care and Use Committee

3. By-Law Unit Chairs

By-Law Chairs are responsible for ensuring all PIs and other supervisors establish and maintain effective lab safety programs in their units and hold PIs and other supervisors accountable for their responsibilities in ensuring a safe laboratory environment, safe work practices of their research group members, completion of requisite safety training and other requirements, and timely correction of non-compliance and/or safety issues.

4. Deans

Deans are responsible for ensuring that all By-Law Chairs, PIs and other supervisors establish and maintain effective lab safety programs. Deans will hold By-Law Chairs, PIs and other supervisors accountable for their responsibilities in ensuring a safe laboratory environment, safe work practices of their research group members, completion of requisite safety training and other requirements, and timely correction of non-compliance and/or safety issues.

The Deans shall collaborate with the Vice Chancellor for Research and the Assistant Vice Chancellor Campus Safety to provide recognition to specific faculty and their respective research groups for exemplary lab safety practices.

5. Provost and Vice Chancellor for Research

The Provost and Vice Chancellor for Research, in collaboration with the Assistant Vice Chancellor Campus Safety, shall ensure that Deans support effective lab safety programs and hold individuals within their respective schools accountable for correcting unsafe

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behavior and/or conditions of noncompliance. The Vice Chancellor for Research shall support effective means to recognize exemplary safety performance by specific faculty and their respective research groups.

6. Assistant Vice Chancellor Campus Safety

The Assistant Vice Chancellor Campus Safety is responsible for ensuring that effective occupational safety and regulatory compliance programs are in place to reduce, to the greatest extent practicable, the risks associated with instructional and research laboratories. The Assistant Vice Chancellor Campus Safety shall support the Deans and the Vice Chancellor for Research in their efforts to effectively address issues of chronic negligence as exhibited by persistent unsafe behavior and/or unsafe conditions or non-compliance.

Restriction/revocation of laboratory access, restriction of chemical purchases, as well as any other effective administrative actions shall be considered in addressing non-compliance with this policy in accordance with the procedures outlined in section V. of this policy.

B. Responsibilities

1. Faculty / PIs and other Supervisors

Faculty, PIs and other Supervisors are responsible for following this policy and ensuring that their staff receives the required training and personal protective equipment (PPE), and is familiar with the procedures for effective and safe work practices.

Prior to working in a lab and with assistance from EH&S, the following must be completed:

- a. For each worker, perform a "Hazard Assessment" to determine if hazards are present that require the use of PPE.
- b. Based on the hazard assessment, ensure that for each worker, proper PPE has been identified, the worker has been trained on its use, and the worker has been properly fitted
- c. Ensure that all workers complete the safety training commensurate with the hazards present in the lab. This should be determined by conducting a "Laboratory Safety Training Needs Assessment." All training must include taking the "Laboratory Safety Fundamentals" course prior to commencing work in the lab. Records of all training must be kept in the lab.
- d. PIs or other supervisors must conduct a lab site safety orientation, prior to any worker starting any procedure in a lab.

In addition, on an ongoing basis the following must be maintained:

- a. Certain chemicals require standard operating procedures (SOPs) to be written prior to workers using them in the lab. It is the PI's or other supervisor's responsibility to determine if a SOP is required for a particular chemical. If necessary, Environmental Health & Safety (EH&S) will assist with this determination.

SOPs must be:

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- i. Signed by the person who has written the SOP
 - ii. Reviewed and Signed by a reviewer
 - iii. Signed by each person in the lab prior to using the chemical or procedure covered in the SOP
 - iv. Note: An SOP can be written for a "Process" covering all chemicals used in that process or for a "Control Band" which is a family or group of chemicals having similar characteristics or hazards.
- b. Maintain an up-to-date "Lab Safety Plan"
 - c. Maintain an up-to-date chemical inventory
 - d. Ensure the timely correction of hazards, unsafe conditions or work practices, and non-compliance brought to their attention by EH&S or by any other means. It is the responsibility of the PI or other supervisor to take prompt, effective means to address any cases of non-compliance by lab personnel.
2. Laboratory Personnel and Workers

Workers are responsible for knowing and following the training, PPE, and other requirements for areas in which they work or enter and for carrying out all operations in a safe manner. They are responsible for informing others in the area of these requirements and reporting unsafe conditions to the supervisor or EH&S.

Specific responsibilities include, but are not limited to the following:

- a. Each worker is responsible for properly wearing and maintaining required PPE as identified in the Hazard Assessment.
 - b. All workers are responsible for completing the required training prior to working in the lab.
 - c. All workers are responsible for being familiar with the UC Merced Lab Safety Plan for their lab prior to starting work.
 - d. Each worker must, for those chemicals requiring SOPs, have read and signed the SOP stating that they have read and understood the contents of the SOP prior to starting work with the chemical.
 - e. Workers are responsible for reporting any hazard, unsafe condition or practice to their PI or other supervisor.
3. Accountability

The University has an ethical obligation to ensure that employees adhere to safe work practices. It is the responsibility of campus administration and management to, in a timely manner, inform departments, PIs, or other supervisors of any unsafe conditions or issues of non-compliance that come to the attention of administration or management. It is the responsibility of Deans, By-Law Chairs, PIs and other supervisors to hold employees under their direction accountable for their safety practices. This includes providing proper recognition of consistent safe work practices as well as effectively addressing negligence in complying with safe work practices and regulatory compliance procedures.

C. Policies for Non-Compliance

Noncompliance with this policy is handled in accordance with Personnel Policies for Staff Members (PPSM) policies 62-65 pertaining to disciplinary actions and 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.

V. PROCEDURES

The following procedures will be followed to ensure proper monitoring, assessment and assurance of laboratory safety compliance.

A. Monitoring and Laboratory Inspections

EH&S will monitor, analyze and document laboratory safety compliance. This includes, but is not be limited to:

1. Laboratory safety inspections on at least an annual basis.
2. Analysis of laboratory safety training records for assessment of compliance.
3. Review of SOP compliance.
4. Review and analysis of incident/accident/injury reports.
5. Monitoring and reporting findings, deficiencies, and trends, to compliance committees, Deans, and By-Law Unit Chairs as necessary.
6. Generation of an annual laboratory safety report for the campus Ethics and Compliance Program Management Council and campus leadership.

PIs and other supervisors must monitor their research staff for adherence to safe work practices on an ongoing basis in the lab. Any safety deficiencies must be corrected in a timely manner.

B. Recognition of Safe Practices

Positive reinforcement of consistent safe work practices by lab personnel is essential for fostering a laboratory safety culture. Special recognition of exemplary safe laboratory procedures and best management practices is likewise an effective means to demonstrate the University's commitment to safety and to show that safety is an integral part of research excellence. The following incentives and positive reinforcement for safe lab practices may be considered:

1. Recognition in employee performance evaluations.
2. Creation and issuance of an annual Lab Safety Award to a research group demonstrating exemplary lab safety practices.
3. 'Safe Lab Certification' program shall certify those labs which ensure timely correction of hazards, training of employees, and consistent safe lab practices.
4. Assistant Vice Chancellor Campus Safety and Vice Chancellor for Research-sponsored recognition activities.

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C. Assurance of Compliance

The following administrative and personnel action procedures are to be employed to effectively address cases of serious and/or chronic unsafe or noncompliant practices by PIs, other supervisors or workers. Procedures should be applied in a progressive manner commensurate with the risk posed by the unsafe practices, recognizing that truly egregious, serious unsafe acts require immediate effective intervention.

1. Communication of Unsafe Actions and Noncompliant Situations to Responsible Parties:
 - a. All employees have a responsibility to report hazards in the work place. Employees should communicate the presence of these hazards to their immediate supervisor or PI who shall consult with EH&S, as appropriate. Hazards may also be reported to EH&S via their website: <http://ehs.ucmerced.edu/form/report-incident-or-concern> or by calling (209) 228-2347
 - b. For hazards identified during routine lab inspections, EH&S will communicate the hazard to the responsible PI or other supervisor. In response to serious, imminent hazards posing an immediate unacceptable risk to lab occupants, EH&S will “red tag” unsafe equipment or direct employees to cease the serious unsafe activity and, as warranted, vacate the lab until corrections are made. EH&S will then immediately notify the PI or other supervisor
 - c. If unsafe practices or situations of noncompliance persist despite EH&S having made communication of such situations known to the responsible PI or other supervisor, then EH&S will notify the respective Dean, Vice Chancellor for Research, or Assistant Vice Chancellor for Campus Safety.
2. Handling of Employee/Worker Unsafe Practices:
 - a. The PI or other supervisor shall communicate to the employee the nature of the unacceptable work practices and/or noncompliant condition in a timely manner
 - b. The communication can be oral and/or written and must be specific in terms of the unacceptable acts or condition, the associated hazards or potential consequences, and what corrective actions must be taken
 - c. If the supervisor determines that repeated oral and/or written communication to a given employee about repeated violations of safe laboratory practices is ineffective in influencing a change in behavior, then the supervisor must pursue effective consequences, including discipline per the procedures below.
3. Consequences for Egregious or Persistent Unsafe Lab Safety Procedures:

The University is required by Cal OSHA regulations to ensure that employees adhere to safe work practices and, thus, must impose effective consequences for unsafe behavior. The options below may be used either singularly, or in combination, to ensure employee compliance:

 - a. Refresher training as warranted
 - b. Oral directive
 - c. Written warning or directive as appropriate
 - d. Written notation on annual performance review

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- e. Restricted/prohibited lab access
- f. Restriction of funds
- g. Suspension
- h. Termination

Disciplinary actions, including written warnings, notation on performance evaluations, suspension and termination will be taken in accordance with the applicable personnel policies and collective bargaining agreements in the case of represented employees. Human Resources and/or Academic Personnel can provide the necessary consultation in these cases.

4. Documentation of Assurance of Compliance:

It is critical for both to demonstrate compliance with regulatory requirements, as well as risk reduction that documentation be generated and maintained for employee safety training, identification and correction of hazards, as well as administrative or personnel actions to ensure compliance. A supervisor must be able to produce documentation indicating an escalating chain of actions in a case of chronic unsafe behavior or noncompliance. This documentation includes, but is not limited to:

- a. Training records for all required lab safety training.
- b. Laboratory safety inspection reports and other documentation of hazard identification.
- c. Supervisor's written records of actions taken, administrative or disciplinary, against an employee for failure to adhere to safe work practices.
- d. A performance evaluation wherein recognition of good work practices, as well as negligence with respect to following safe work practices, is addressed.

VI. RESPONSIBILITIES

The responsibilities for implementation of this policy are as outlined in the Policy Text section IV. of this policy.

VII. Revision History

Date	Action/Summary of Changes
May XX, 2017	Campus procedure to reiterate responsibilities and outline escalation procedures and responsibilities.

VIII. Appendix

Frequently Asked Questions

Q: What is the role of EH&S in helping faculty PIs meet their responsibilities? Does EH&S play a central role in supporting the implementation of safety training review?

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A: The roles and responsibilities of both PIs and EH&S are outlined in the UC Merced Laboratory Safety Plan. Faculty, PIs and other Supervisors are responsible for following policy and ensuring their staff receive required training, personal protective equipment (PPE), and that they are familiar with procedures for effective and safe work practices. EH&S is responsible for supporting the PIs in all EH&S areas.

Q: Where can PIs find the training and information to determine whether hazards exist? Does EH&S have a checklist or guide to help faculty members identify appropriate PPE for their supervised workers?

A: All PIs can access the EH&S Laboratory Hazard Analysis Tool (LHAT) program for help in completing the hazard analysis associated with laboratory operations. EH&S is available to assist the PI in using the tool to complete the assessment and to review the assessment for completeness.

Q: Who is responsible for determining whether the PPE is properly fitted?

A: EH&S will help to fit lab personnel with required PPE as determined by the LHAT hazard analysis. It is the PI's role to ensure each lab worker has been properly outfitted and trained prior to initiating work in the lab. The PIs have a primary safety and health compliance role for laboratory personnel working under their charge.

Q: Who is responsible for managing chemicals used in labs? Are there procedures in place?

A: It is critical that the PI determines, for the purpose of operational use, how to safely work with a particular chemical and protect lab personnel from the hazards associated with the chemical (e.g., toxicity, flammability, corrosivity, etc.). EH&S provides support and assistance with this process, but it is imperative that the PI understand the hazards associated with a particular chemical during use in the laboratory in order to protect both human health and the environment.

Q: How can a lab keep track of chemicals? Is there a chemical inventory database?

A: There is an online chemical inventory database, specific to each lab. It is important that this database be updated regularly. Contact EH&S to learn more about the procedures for ordering and adding chemicals to the inventory.

Q: How often does a Lab Safety Plan need to be updated?

A: Laboratories are required to update their LSPS annually, or more frequently if operations change significantly. In addition, each laboratory member must review the LSP and associated LSPS and complete a new training sheet annually. Finally, each PI should notify EH&S if his or her laboratory moves or if his or her contact information changes.

Q: What kind of training is required before beginning work in a lab?

A: Under the Laboratory Safety Plan, Section 7. Chemical Safety, the subsection, Training, each laboratory worker is required to take laboratory specific safety training prior to beginning lab work and also as conditions change, e.g., new exposure hazards or change in work conditions; refresher training is also required to ensure lab workers remain up date in their knowledge of lab hazards and controls. Training certificates are provided to each individual lab worker who completes the class room training and a record of lab safety training for each worker is maintained in the UC Learning Center.

Q: How does EH&S support By-Law Unit Chairs with their compliance responsibilities?

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A: EH&S provides record keeping resources for lab training as outlined in the "Documentation of Training" section of the University Lab Safety Plan (page 53) and this includes an individual employee template (Appendix K of LSP) and a training roster with site specific template (Appendix L of LSP). In addition, EH&S has online training modules for specific lab hazards and mitigative measures along with a monthly "Lab Safety Tips" to help and assist the labs with meeting safety compliance obligations.

Q: Is lab safety training available online?

A: Yes. EH&S offers online training modules for laboratory personnel. Available modules include lab safety fundamentals, hazmat spill response and DOT awareness, radiation safety, respiratory protection, laser safety, shipping with dry ice, and compressed gases. EH&S also provides in person lab specific safety training upon PI/laboratory request.

Q: Are all Labs subject to safety inspections by EH&S?

A: Periodic safety inspections apply to all laboratories subject to the UC Merced Laboratory Safety Plan.

Q: Does EH&S assist with the development of SOPs? How does EH&S assure that SOPs are followed in each lab?

A: Upon request, EH&S assists PIs in the development of SOPs. EH&S reviews the SOPs for each lab to specifically demonstrate that the procedures developed to protect the health and safety of lab personnel are being followed.

Q: Is there an electronic tool for tracking training information?

A: Lab Safety Training is recorded in the UC Learning Center. Individuals can directly access their training transcript to show proof of training. Reports by Lab can be obtained through EH&S.