Chapter 1: Introduction

Purpose

UCLA is committed to providing a healthy and safe working environment for the campus community, free from recognized hazards in accordance with UCLA Policy 811 (http://www.adminpolicies.ucla.edu/pdf/811.pdf). The Chemical Hygiene Plan (CHP) establishes a formal written program for protecting laboratory personnel against adverse health and safety hazards associated with exposure to potentially hazardous chemicals and must be made available to all employees working with hazardous chemicals. The CHP describes the proper use and handling practices and procedures to be followed by faculty, staff, students, visiting scholars, and all other personnel working with potentially hazardous chemicals in laboratory settings. This plan is based on best practices identified in, among others sources, “Prudent Practices for Handling Hazardous Chemicals in Laboratories,” published by the National Research Council, and the American Chemical Society’s “Safety in Academic Chemistry Laboratories” (www.acs.org), a copy of which has been distributed along with this manual.

Scope

The CHP applies to all laboratories that use, store or handle potentially hazardous chemicals and all personnel who work in these facilities. It does not apply to research involving exclusively radiological or biological materials, as these safety procedures and regulatory requirements are outlined in the Radiation Safety Manual (www.ehs.ucla.edu/radsafetymanual.pdf) and Biosafety Manual (www.ehs.ucla.edu/biosafetymanual.pdf), respectively. Research involving more than one type of hazard must comply with all applicable regulatory requirements and follow guidance outlined in the relevant safety manuals.

The information presented in the CHP represents best practices and provides a broad overview of the information necessary for the safe operation of laboratories that utilize potentially hazardous chemicals. It is not intended to be all inclusive. Departments, divisions or other work units engaged in work with potentially hazardous chemicals that have unusual characteristics, or are otherwise not sufficiently covered in the written CHP, must customize the document by adding additional sections addressing the hazards and how to mitigate their risks, as appropriate. Such customizations must receive prior approval from the PI/Laboratory Supervisor and/or the UCLA Office of Environment, Health and Safety (EH&S). See Appendix E: Policy 907 – Safe Handling of Particularly Hazardous Substances for additional information on substances that may trigger these additions. For information on specific chemical safety topics not covered in the CHP, please contact the EH&S Hotline at 310-825-9797 or laboratorysafety@ehs.ucla.edu.
Regulatory Requirements

Implementation of the necessary work practices, procedures, and policies outlined in this CHP is required by the following:

- **Title 8, California Code of Regulations (CCR), Section 5191, “Occupational Exposures to Hazardous Chemicals in Laboratories”** ([http://www.dir.ca.gov/title8/5191.html](http://www.dir.ca.gov/title8/5191.html))
- **Title 8, CCR, Section 5209, “Carcinogens”** ([http://www.dir.ca.gov/title8/5209.html](http://www.dir.ca.gov/title8/5209.html))
- **Title 8, CCR, Section 5154.1, “Ventilation Requirements for Laboratory-Type Hood Operations”** ([http://www.dir.ca.gov/title8/5154_1.html](http://www.dir.ca.gov/title8/5154_1.html))

Other applicable regulations include those promulgated by the U.S. Department of Labor including 29 CFR 1910.1450 "Occupational Exposure to Hazardous Chemicals in Laboratories" (the "Laboratory Standard"). These regulations require that the CHP be readily available wherever potentially hazardous chemicals are used, handled or stored. EH&S will review and evaluate the effectiveness of this Plan at least annually and update it as necessary.

Rights and Responsibilities

Employees and other personnel who work in laboratories have the right to be informed about the potential health hazards of the chemicals in their work areas and to be properly trained to work safely with these substances. This includes custodial staff and other personnel who work to clean and maintain laboratories. Employees have the right to file a complaint with Cal/OSHA if they feel they are being exposed to unsafe or unhealthy work conditions and cannot be discharged, suspended, or otherwise disciplined by their employer for filing a complaint or exercising these rights. All personnel working with potentially hazardous chemicals are encouraged to report (anonymously, if preferred) any concerns about unsafe work conditions to the **EH&S Hotline at 310-825-9797**.

Responsibilities for the health and safety of the campus community extends to the highest administrative levels of UCLA. The Chancellor and Vice Chancellors are responsible for the implementation of UCLA’s Environmental Health and Safety Policy ([http://www.adminpolicies.ucla.edu/pdf/811.pdf](http://www.adminpolicies.ucla.edu/pdf/811.pdf)) at all facilities and properties under campus control. Deans and Department Heads are responsible for establishing and maintaining programs in their areas and for providing a safe and healthy work environment.

While the Chancellor, Vice Chancellors, Deans and Department Heads are responsible for the broad implementation and enforcement of UCLA’s Environmental Health and Safety Policy, the day to day responsibility for the management of laboratory safety and adherence to safe laboratory practices rests with the PI/Laboratory Supervisor within individual laboratory units and associated departments. All personnel, including PIs/Laboratory Supervisors, employees, and students, have a duty to fulfill their obligations with respect to maintaining a safe work environment.
All employees and other personnel working with potentially hazardous chemicals have the responsibility to conscientiously participate in training seminars on general laboratory safety and review and be familiar with the contents of the CHP. Those working with chemicals are responsible for staying informed about the chemicals in their work areas, safe work practices and proper personal protective equipment (PPE) required for the safe performance of their job. Failure to comply with these requirements will result in progressive disciplinary action in accordance with University policy, and may result in temporary suspension of laboratory activities until corrective action is implemented.

Specific duties and responsibilities of personnel who work in areas where potentially hazardous chemicals are present have been compiled in the document entitled General Rules for Laboratory Work with Chemicals, found in Appendix A.

**RESPONSIBILITIES OF PRINCIPAL INVESTIGATOR (PI)/ LABORATORY SUPERVISOR**

The PI/Laboratory Supervisor has responsibility for the health and safety of all personnel working in his or her laboratory who handle hazardous chemicals. The PI/Laboratory Supervisor may delegate safety duties, but remains responsible for ensuring that delegated safety duties are adequately performed. The PI/Laboratory Supervisor is responsible for:

1. Knowing all applicable health and safety rules and regulations, training and reporting requirements and standard operating procedures associated with chemical safety for regulated substances;
2. Identifying hazardous conditions or operations in the laboratory or other facility containing hazardous chemicals and determining safe procedures and controls, and implementing and enforcing standard safety procedures;
3. Establishing standard safety operating procedures (general and protocol specific) and performing literature searches relevant to health and safety for laboratory-specific work;
4. Providing prior-approval for the use of hazardous chemicals in the PI/Laboratory Supervisor's laboratory or other facility with hazardous chemicals;
5. Consulting with EH&S and/or Departmental Safety Committee on use of higher risk materials, such as use of particularly hazardous substances, as defined by UCLA Policy 907, or conducting higher risk experimental procedures so that special safety precautions may be taken;
6. Maintaining an updated chemical inventory for the laboratory or facility;
7. Ensuring laboratory or other personnel under his/her supervision have access to and are familiar with the appropriate Safety Manual(s);
8. Training all laboratory or other personnel he/she supervises to work safely with hazardous materials and maintain written records of laboratory-specific or other specialized training in the appropriate Safety Manual(s). Electronic records of training are encouraged. Training must include information of the location and availability of hazard information;
9. Promptly notifying EH&S and/or Facilities Management should he/she become aware that work place engineering controls (e.g., fume hoods) and safety equipment (e.g., emergency showers/eyewashes, fire extinguishers, etc.) become non-operational;
10. Ensuring the availability of all appropriate personal protective equipment (PPE) (e.g., laboratory coats, gloves, eye protection, etc.) and ensuring the PPE is maintained in working order;
11. Conducting periodic self-inspections of laboratory or facility and maintaining records of inspections, as required;
12. Promptly reporting of accidents and injuries to EH&S. Serious injuries MUST be reported to EH&S immediately to allow for compliance with the CAL/OSHA 8-hour reporting time frame. Any doubt as to whether an injury is serious should favor reporting;

13. Provide funding for medical surveillance and/or medical consultation and examination for laboratory and other personnel, as required;

14. Informing facilities personnel, other non-laboratory personnel and any outside contractors of potential laboratory-related hazards when they are required to work in the laboratory environment; and

15. Identifying and minimizing potential hazards to provide a safe environment for repairs and renovations.

RESPONSIBILITIES OF ALL PERSONNEL WHO HANDLE POTENTIALLY HAZARDOUS CHEMICALS

All personnel in research or teaching laboratories that use, handle or store potentially hazardous chemicals are responsible for:

1. Reviewing and following requirements of the CHP and all appropriate Safety Manuals and Policies;

2. Following all verbal and written laboratory safety rules, regulations, and standard operating procedures required for the tasks assigned;

3. Developing good personal chemical hygiene habits, including but not limited to, keeping the work areas safe and uncluttered;

4. Planning, reviewing and understanding the hazards of materials and processes in their laboratory research or other work procedures prior to conducting work;

5. Utilizing appropriate measures to control identified hazards, including consistent and proper use of engineering controls, personal protective equipment, and administrative controls;

6. Understanding the capabilities and limitations of PPE issued to them;

7. Gaining prior approval from the PI/Laboratory Supervisor for the use of restricted chemicals and other materials;

8. Consulting with PI/Laboratory Supervisor before using these particularly hazardous substances (PHS), explosives and other highly hazardous materials or conducting certain higher risk experimental procedures;

9. Immediately reporting all accidents and unsafe conditions to the PI/Laboratory Supervisor;

10. Completing all required health, safety and environmental training and providing written documentation to their supervisor;

11. Participating in the medical surveillance program, when required;

12. Informing the PI/Laboratory Supervisor of any work modifications ordered by a physician as a result of medical surveillance, occupational injury or exposure; and

13. When working autonomously or performing independent research or work:
   a. Reviewing the plan or scope of work for their proposed research with the PI/Laboratory Supervisor
   b. Notifying in writing and consulting with the PI/Laboratory Supervisor, in advance, if they intend to significantly deviate from previously reviewed procedures (Note: Significant change may include, but is not limited to, change in the objectives, change in PI, change in the duration, quantity, frequency, temperature or location, increase or change in PPE, and reduction or elimination of engineering controls.)
   c. Preparing SOPs and performing literature searches relevant to safety and health that are appropriate for their work; and
d. Providing appropriate oversight, training and safety information to laboratory or other personnel they supervise or direct.

RESPONSIBILITIES OF EH&S AND CHEMICAL HYGIENE OFFICER (CHO)

EH&S is responsible for administering and overseeing institutional implementation of the Laboratory Safety Program. The Chemical Hygiene Officer (CHO) has primary responsibility for ensuring the implementation of all components of the CHP. In case of life safety matters or imminent danger to life or health, the Director of EH&S or designee has the authority to order the cessation of the activity until the hazardous condition is abated. EH&S provides technical guidance to personnel at all levels of responsibility on matters pertaining to laboratory use of hazardous materials. The CHO is a member of EH&S and, with support from other EH&S personnel, is responsible for:

1. Informing PIs/Laboratory Supervisors of all health and safety requirements and assisting with the selection of appropriate safety controls, including laboratory and other workplace practices, personal protective equipment, engineering controls, training, etc.;
2. Conducting periodic inspections and immediately taking steps to abate hazards that may pose a risk to life or safety upon discovery of such hazards;
3. Performing hazard assessments, upon request;
4. Maintaining area and personal exposure-monitoring records;
5. Helping to develop and implement appropriate chemical hygiene policies and practices;
6. Having working knowledge of current health and safety rules and regulations, training, reporting requirements and standard operating procedures associated with regulated substances. Such knowledge may be supplemented and developed through research and training materials;
7. Working with Departmental Safety Committee to review existing and developing new SOPs for handling hazardous chemicals;
8. Providing technical guidance and investigation, as appropriate, for laboratory and other types of accidents and injuries;
9. Helping to determine medical surveillance requirements for potentially exposed personnel;
10. Reviewing plans for installation of engineering controls and new facility construction/renovation, as requested;
11. Reviewing and evaluating the effectiveness of the CHP at least annually and updating it as appropriate; and
12. Providing management oversight and assistance with environmental compliance, transport and disposal of hazardous waste.