

# LABORATORY SAFETY EVALUATION PROGRAM DOCUMENT

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## 1. PURPOSE

The Laboratory Safety Evaluation Program is comprised of a team of EH&S specialists from various scientific backgrounds providing support to laboratories for compliance with campus policies and local, state, and federal regulations. The purpose of the Laboratory Safety Evaluation Program is to evaluate research and teaching laboratories spaces at UCR and ensure that each laboratory conform with the safe and healthy work conditions and practices as identified in the Injury and Illness Prevention Plan (IIPP) and the Chemical Hygiene Plan (CHP). The evaluation process consists of three components: documentation, general laboratory safety and chemical safety.

## 2. RESPONSIBILITIES

### Environmental Health and Safety

An EH&S Specialist is expected to demonstrate knowledge and expertise in a courteous and professional manner. Each EH&S Specialist is assigned to a Department and serves as the EH&S liaison.

The EH&S Specialists will:

- Create relationships built on trust and mutual goals
- Conduct in-person evaluations of each space for each assigned departments
- Conduct follow-ups verifications of in-person evaluations
- Proactively work and assist researchers to correct findings
- Aid the laboratories in standard operating procedure development, revision and improvement
- Conduct laboratory hazard assessments
- Address faculty/researcher needs
- Facilitate coordination with Subject Matter Experts within EH&S
- Provide guidance on EH&S matters
- Communicate program changes and updates

### Departments

Departments are responsible for the broad implementation of UC Policies and Procedures by:

- Reinforcing safety
- Addressing safety concerns
- Partnering with EH&S to provide support and consultation to PI/researchers to ensure all laboratory personnel conduct research in a safe manner and in compliance with UC Policy and Procedures.
- Collaborate with EH&S to establish mutual goals.

### **Principal Investigators (PIs)**

A principal investigator (PI) is the lead researcher for the grant project, such as a laboratory study or a clinical trial. The phrase is also often used as a synonym for "head of the laboratory", "research group leader", or "responsible party". The PI is directly and primarily responsible for the safe operation of their laboratory, and for compliance by all their laboratory personnel with all UCR Laboratory Safety policies and procedures. PIs are also responsible for completing an annual laboratory hazard assessment in LHAT.

### **Laboratory Personnel**

Laboratory Personnel are individuals who work in the laboratory including PIs, research scientists, post-doctoral fellows, laboratory managers, technicians, undergraduate and graduate students, visiting scientists, laboratory volunteers, and support personnel. Laboratory personnel are responsible for the following:

- Familiarize with hazardous materials that are in the laboratory regardless of whether or not they work directly with them
- Follow all laboratory safety policies and procedures
- Know all emergency procedures stabled by the PI
- Complete all appropriate training and verify documentation of training
- Follow all laboratory practices as outlined in the Laboratory Safety Manual.

## **3. LABORATORY/TECHNICAL AREAS**

The Laboratory Safety Evaluation Program reviews laboratory/technical area as defined by UCOP policies and UCR Research Integrated Safety Committee (RISC). A laboratory/technical area is 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, including but not limited to, greenhouses, insectaries and quarantine facilities
- 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
- Computational laboratories

## 4. PRE-EVALUATION

Before the evaluation, EH&S Specialists become familiar with as many relevant facts as possible about the laboratory/workplace in their [assigned buildings](#), such as its evaluation history, the nature of the research, authorization statuses, and particular standards that might apply. This preparation provides the EH&S Specialist with a knowledge of the potential hazards and processes that he or she may encounter, and aids in selecting appropriate personal protective equipment for use against hazards during the evaluation.

### a. Determine locations to be inspected

PI and/or Laboratory Safety Contact will verify all research areas that are within their responsibility. Locations can be determined using Laboratory Hazardous Assessment (LHAT) and using Facilities Management System (FMS).

### b. Review information related to the location

#### i. *Laboratory*

To ensure a comprehensive evaluation of each laboratory is effective, it is important to understand each laboratory prior to an evaluation. The following is reviewed prior to an evaluation:

- Identify the type of research being conducted.
- Review Chemical Inventory to determine hazard types and high-hazard chemicals.
- Determine the potential hazards to ensure the appropriate PPE is worn.
- Review previous laboratory evaluation reports.

Work with each subject matter expert to determine approval of research.

#### ii. *Laboratory Hazard Assessment (LHAT)*

Review the latest certified hazard assessment to determine types of hazards present in laboratory, and review laboratory groups, roster and locations.

#### iii. *Use Authorizations*

Using the types of hazards identified in LHAT, verify appropriate use authorizations (e.g. IRB, BUA, AUP, CSUA, RUA) have been submitted and are current. When use authorizations are missing or expired, notify respective Officer.

#### iv. *Training*

Using [ucrllearning.ucr.edu](http://ucrllearning.ucr.edu), verify that everyone has completed the appropriate training modules. Required training modules are determined on the hazards identified in the certified laboratory hazard assessments.

At a minimum, all laboratory personnel are required to take the following:

- Laboratory Safety Fundamentals (initial) or the Refresher(subsequent 3 years)
- Hazardous Materials and Waste Management - annual
- Fire Extinguisher – annual

If additional hazards, such as biological, radioactive, pyrophoric materials, etc., are identified in the certified laboratory hazard assessments, then refer to [Research Approval and Training Requirements](#) to identify other training requirements needing verification of completion.

#### v. *Personal Protective Equipment (PPE)*

Using LHAT, determine the appropriate PPE to be worn in the laboratory while conducting evaluation. If PPE requirements are unknown, wear minimum PPE requirements during evaluations. The minimum PPE are laboratory coat, safety glasses, long pants and closed toe shoes.

vi. *Incident History*

Review previous incidents that occurred in the laboratory space, if any.

c. **Scheduling Evaluation**

To ensure effectiveness, EH&S will contact the PI and Laboratory Safety Contact to schedule the in-person evaluation. Once a time has been confirmed, a calendar invite will be sent to the PI and laboratory contact(s). A copy of the laboratory safety checklist can be found [here](#).

## 5. EVALUATION

Prior to entering the laboratory area, EH&S Specialists will don appropriate PPE for hazards identified in LHAT. EH&S Specialists will display official EH&S credentials. Ask to meet with the appropriate laboratory representative. Introduce yourself and explain the purpose of the visit.

a. *Purpose and Process*

EH&S Specialists will explain the purpose of the visit, the scope of the evaluation, the standards that apply, what to expect after the evaluation, expectations to correct findings.

b. *Accompaniment*

Evaluations should be conducted with the accompaniment of the PI or a laboratory representative. Where there is no representative, such as an abandoned laboratory, conduct the evaluation, submit report and discuss findings with the PI and/or department Chair.

c. *Questions*

While conducting evaluations, laboratory personnel are welcome to ask questions regarding the process.

d. *Evaluation*

During the evaluation, unsafe or unhealthy working conditions will be identified as well as issues that are not in alignment with university policies and procedures, local, state, and federal regulations.

i. *Laboratory Safety Manual (LSM)*

Ensure laboratory have the UCR [Laboratory Safety Manual](#), which is a collection of resources for individuals working in research and teaching laboratories that is comprised of safe work procedures, chemical safety information, training records, laboratory equipment safety information and other resources. In order to be compliant with local, state, and federal regulations, each laboratory should have, at a minimum, documents listed below in the LSM.

- [Injury & Illness Prevention Program](#)
- [Chemical Hygiene Plan](#)
- Standard Operating Procedures (laboratory specific)
- Training Records
- [Laboratory Hazard Assessment \(LHAT\)](#)

- Use Authorizations (Biological, Radioactive, Controlled Substances, Animal Use Protocols, etc.)

*ii. Interview*

During evaluations, EH&S Specialists may interview laboratory workers, in private, about safety and health conditions and practices in the laboratory. Ensure laboratory workers understand that unsafe and unhealthy conditions identified will remain anonymous. Restate the purpose of the evaluation program, if needed to build trust.

Questions to Consider:

- What are the top three (3) safety concerns do you have while working in the laboratory?
- What are your laboratory procedures when there is an emergency/incident?
  - Reference Incident/Hazard Notification System and Emergency Procedure poster, and Notice to Employees.
- How do you store your hazardous materials?
  - Reference proper chemical segregation practices.
- Who conducts laboratory-specific training and how do you document it?
  - Reference [Laboratory Site Specific Training Checklist](#)
- What are your laboratory procedures when working alone in the laboratory?
- What do you refer to when you encounter a safety concern and how would you address it?
  - Reference [Laboratory Safety Manual](#)

*iii. EH&S Updates and Resources*

During evaluations, EH&S Specialists will provide updates and resources to laboratory workers, and remove any resources that are no longer current. Accident/incident notifications and procedures will be discussed. Items that EH&S may provide include, but is not limited to:

- Door placard
- Emergency Procedure Poster
- Labels – “no food or drinks,” “warning,” “biohazard,” “radiological,” etc.
- Sharps container
- Secondary containers
- Any additional resources available

*iv. Corrective Actions*

When unsafe and unhealthy conditions and practices are observed during evaluation, EH&S Specialist will immediately address/correct the situation, if possible. If situation cannot be immediately corrected, interim measures or feasible recommendations will be provided to correct the situation or provide background information as to why the situation is considered unsafe and unhealthy. If training is not complete, do not allow individuals to continue working until training is complete.

*v. Documentation*

All unsafe and unhealthy conditions and practices, including those that were corrected immediately, is documented in the inspection tool (e.g. RSS Inspect).

Additionally, good work practices will be recognized in accordance to the **Safety Recognition Program**.

e. *Closing Evaluation*

Prior to leaving the laboratory, observed findings will be discussed, recommendations to correct findings will be provided, and follow-up date will be scheduled. Laboratory personnel will be provided follow-up visit timeline, as well as, corrective action timeline. Laboratory personnel are encouraged to update the report as findings are corrected; however, EH&S will return on scheduled follow-up date to verify findings and update the report on behalf of the laboratory.

## 6. REPORT

Within one business day of the evaluation, an evaluation report is submitted to EH&S Research/Lab Safety managers for review within 24 hours. Once approved, the report will be sent to the PI, laboratory safety contact, and Safety Coordinators. The report includes findings, due dates for the corrective actions, and contact information of the EH&S representative. If any findings include submitting a work order to Facilities Services, a work order number will be included in the report.

## 7. FOLLOW-UP / VERIFICATION

Follow-up and verification of corrected deficiencies should be conducted during designated correction time. For major deficiencies, EH&S Specialist will work closely with the PI / laboratory to correct deficiencies. When corrective actions are due or the PI/RP “Marks As Ready for Verification” in Inspect, EH&S Specialist will conduct a follow-up visit to verify that the issues have, in fact, been corrected. When corrective actions are verified, select “Resolved” to indicate the date of verification in the report.

When corrective actions are not corrected, the following should be done:

- “Mark as Not Resolved” – select this if deficiency have not been resolved
- “Mark as In Progress” – select this if deficiency requires additional time to resolve.
- “Mark as No Further Action” – select this if deficiency no longer applies (e.g. training deficiency was identified, but individual is no longer with the laboratory)

## 8. ESCALATION PROCESS

Time Elapsed	PI/RP Notified in addition to	CC in notification
48-hours	Send updated report to Laboratory Safety Contact (LSC)	
30 Days	Send updated report to LSC	
45 Days	<ul style="list-style-type: none"> <li>• EH&amp;S Assistant Director, Research Safety</li> <li>• EH&amp;S Executive Director</li> <li>• Department Chair</li> <li>• Safety Coordinator</li> </ul>	
60 Days	Dean/Division Deans	EH&S Assistant Director, Research Safety, EH&S Executive Director, Department Chair, Safety Coordinator, Laboratory Safety Contact
90 Days	<ul style="list-style-type: none"> <li>• Vice Chancellor of Research and Economic Development</li> </ul>	EH&S Assistant Director, Research Safety, EH&S Executive Director,

	<ul style="list-style-type: none"> <li>Vice Chancellor of Planning, Budget, and Administration</li> </ul>	Department Chair, Safety Coordinator, Laboratory Safety Contact
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## 9. MID-YEAR CHECK-IN

Approximately six months after initial evaluation date, a mid-year check-in will be conducted with the laboratories. The following items will be reviewed during the mid-year check-in:

- Review last evaluation to determine if EH&S can assist or provide any resources to the laboratories to ensure laboratories operate in a safe and healthy condition.
- Determine whether research processes have changed. Provide updated SOPs to new processes.
- Conduct a PPE Spot Check.
- Verify/Update assigned locations and rosters.
- Identify unsafe and unhealthy conditions and provide a reminder notification to the PI/RP.
- Review/Update door placards, signs and labels.
- Review/Update LHAT roster for current and accurate account of laboratory personnel.
- Review training records and identify pending/missing training.
- Use Mid-Year Check-In checklist to capture visit.

## 10. NO HAZARDS

When a PI identifies no hazards in assigned space in Laboratory Hazard Assessment (LHAT), EH&S Specialists should conduct a site visit to verify there are no hazards in the space. Once the space is verified hazard-free, post the hazard-free sign at the door. These spaces should be verified annually.