Graduate Student Orientation

Safety Requirements

Christina Hoddle
Laboratory Safety Officer

“Safety and Science are NOT separate entities. They are one.”
Why is laboratory safety important?

“The facts are unequivocal. Occupational Safety & Health Administration statistics demonstrate that researchers are 11 times more likely to get hurt in an academic lab than in an industrial lab.

There have been serious accidents in academic labs in recent years—including fatalities—that could have been prevented with the proper use of protective equipment and safer laboratory procedures.


http://cen.acs.org/articles/91/i18/Importance-Teaching-Safety.html
Sheri Sangj- UCLA

12/29/2009- Three months into her job, she was using a plastic syringe to extract a small quantity of t-butyl lithium, as she withdrew the liquid, the syringe came apart in her hands, spewing flaming chemicals. A flash fire set her clothing ablaze and spread second- and third-degree burns over 43% of her body.
Yale undergraduate majoring in astronomy and physics was killed when her hair became caught in the lathe, whose rotating axis is used to hold materials like wood or metal being shaped.
01/07/2010- An explosion severely injured a graduate student at Texas Tech University in Lubbock, Texas, in the chemistry department during the handling of a high-energy metal compound, which suddenly detonated.

Lost three fingers, his hands and face were burned, and one of his eyes was injured

- working with energetic materials in greater quantities than was prudent.
- working outside of a hood and without a blast shield and personal protective wear.
Assignment of Responsibilities

• University of California, its campuses, and units are responsible for having the appropriate programs in place and enforced in order to provide a safe working environment.

• The Principle Investigator is responsible for certifying that his lab is in compliance with all regulations.

• The PI and all lab workers (staff, students, visitors) must sign lab SOPs & acknowledge the contents, the requirements & responsibilities, in that SOP.

• The PI must approve all SOPs (standard operating procedure) and SOP amendments.

Written records are essential!
Lab Safety Training

All researchers, including students, are required to COMPLETE their training requirements before they can begin working in a laboratory.

Mandatory Training Requirements*

Laboratory Safety Fundamentals (4hrs 20min) – online
Hazardous Waste Management (32min) – online
Fire Extinguishers (4.5min) -online

*subject to change

http://ehs.ucr.edu/training/
Lab Safety Training “Other Training”

http://ehs.ucr.edu/training/assessment.html
Recommended/required training based on type of laboratory work

1. Biosafety: if working with microbials or molecular techniques.
2. Bloodborne Pathogens – working with potentially infectious tissue, blood etc.
3. Animal Care and Use – any vertebrate animal use
4. Personal Protective Equipment – Chemical and Biosafety
5. Fume Hood Safety
6. Dry Ice Shipping
7. Pesticide Safety
8. Tool Safety – required to work in Entomology Shop (further training within the dept also required, (see Chris Hanlon).
9. Autoclave training – department medical autoclave (Imad Bayoun)
10. Radiation Safety
LHAT
(Laboratory Hazard “Assessment” Tool)

• Certify that you are aware of hazards in your lab
• Obtain PPE
Waste Accumulation Storage Tracking electronically (WASTe)

http://ehs.ucr.edu/services/waste.html
UCR Laboratory Safety Rules

1. Familiarize yourself with the lab, location and operation of the safety features (exits, fire extinguishers, safety showers, eye wash facility, and first aid and spill kits) and document this.

2. Make sure you have documented training on all aspects of lab safety relevant to your work prior to beginning potentially hazardous activities and when changes are made to the procedures.

3. Use the Integrated Safety and Environmental Management (ISEM) five step process to include safety in your preparation for lab activities.

4. Immediately notify your PI or supervisor of all accidents and incidents (spills, splashes, fires, etc.) and seek medical attention when needed.

5. Wear appropriate protective eyewear (approved goggles or safety glasses) while in a room where anyone is working with hazardous chemicals or biologicals that can splash into your eyes, or around physical hazards (e.g., pressure vessels, lasers, etc.). Wash your hands before you leave the lab.

6. Use appropriate Personal Protective Equipment, such as approved gloves, safety glasses or goggles, apron or lab coat and clothes that cover most of your skin, such as long pants, and close toed shoes, especially when using hazardous materials.

7. Do not eat, drink, smoke, or apply makeup in rooms where chemical, radioactive, or biological hazards are present.

8. Store all chemicals and other hazardous materials according to California State Law and UCR policy. Know your chemical compatibilities/incompatibilities, stability, shelf life and recommended storage conditions.

9. Dispose of all waste in the correct manner in accordance with UCR policy. There are specific protocols for chemicals, contaminated and broken glass and plastic, sharps, radioactive isotopes and biological agents.

10. Know how to respond properly in an emergency. Clean up all spills safely and promptly, and report them to the Lab supervisor. If unsure how to safely clean up a spill, ask supervisor or EH&S for assistance.

For an online version with helpful links see www.ehs.ucr.edu/resources/publications. Please contact EH&S at (951) 827-5528 if you have any questions.
IN CASE OF AN ACCIDENT
Ensure first aid is provided, and if necessary
SEND EMPLOYEE TO:

Central Occupational Medicine
5330 Central Avenue
Riverside, CA 92503
Phone: (951) 223-2206
Hours: Open 24 hours - 7 Days a Week.
Transportation can be requested by calling this facility in advance.

Parkview Occupational Medicine
5541 Magnolia Ave, Ste. 107
Riverside, CA 92503
Phone: (951) 353-1621
Hours: Weekdays: 8 am to 5 pm.
Weekends: 9 am to 5 pm.
For hours call (951) 353-7178

In Case of Emergency:

Riverside Community Hospital
4445 Magnolia Ave
Riverside, CA 92507
Phone: (951) 788-3900
Hours: 24 Hour Emergency Care
Follow-up treatment should ordinarily be obtained at
Parkview Occupational Medicine or at CMTH.

Other Telephone Numbers and Information

Campus Emergency: 911
Labor Relations & Workers’ Compensation
- Phone: x2-3504
- Web site: http://humanresources.ucr.edu/
Environmental Health and Safety
- Phone: x2-5520
- Web site: http://www.ehs.ucr.edu
Cal-OSHA (909) 383-4321

Immediately report fatalities or injuries requiring hospitalization for more than 24
hours to EH&S at x2-5520

If you become injured or ill because of your job you will be entitled to benefits under the California
Workers’ Compensation Law. These benefits include:

Medical Care: All authorized medical expenses are fully covered.

Selection of Doctor: If you need medical care, you will be referred to the on-site Medical Facility or to a local doctor. If
you will need care after 30 days following your report of your injury, you may see your own physician if you wish.

Designation of Treating Physician: Prior to an on-the-job injury you may designate your treating physician by providing
written notice to the University Laboratory of the name of the person who has previously treated you and who
has your medical records. Contact your Supervisor or Labor Relations & Workers’ Compensation Office at x2-5520 for
the form and details on physician pre-designation.

Disability Income: If hospitalized, or unable to work more than three days, and your claim is accepted, you will receive
income equal to two-thirds of your average pay, up to a legal maximum per week. If you receive a permanent disability,
additional payments will be provided.

Supplemental Job Displacement Benefit: For injuries which occur on or after 01/01/2004 and result in permanent
disability you may receive a non-transferable voucher payable to a state-approved school. For details and eligibility, contact
Disability Management Coordinator at x2-4765.

Death Benefit: Should the injury cause death, a benefit will be paid to dependents.

Submitting Claims: Claims for Workers’ Compensation benefits, including medical treatment and request for a change of
doctor should be made to Labor Relations & Workers’ Compensation Office, 1150 University Ave., Suite A, Riverside,
CA 92521. (951) 827-3541. (Benefits may not be provided for injuries occurring during voluntary participation in any
non-athletic activity not part of an employee’s work related duties)

Discrimination Protection: Employees are protected against discrimination in accordance with Labor Code section 132(a).

The University of California, having complied with the provisions of Section 3700(b) of the California Labor Code, is self-
insured for Workers’ Compensation. The Third Party Administrator for the University is: SEDGWICK CMS, P.O. Box
230250, San Diego, CA 92135-0250. Phone: (619) 321-1400 or (800) 205-0585. Fax: (619) 321-1440

The State of California Division of Workers’ Compensation Information & Assistance Office is also available to answer
questions and assist you. The nearest office is at 5727 Main St. Room 300 Riverside, CA 92501 (951) 782-4947.

Important: Always immediately notify your supervisor of any work-related injury or illness, no matter how small.
Any delay in reporting may delay workers’ compensation benefits. The maximum time to report an injury
is one year. If you have any questions or would like more details about workers’ compensation benefits, please
contact your supervisor.
**UCR Waste Disposal Requirements**

In case of spill, consult EH&S or x20528 or UCPD at x20222 during non-business hours. Disposal using sinks, incinerators, and trash cans is against the law.

**Version 6**

**May 7, 2008**

### Radiological Waste

- **Definition:** Internally or externally radioactive materials, including fissile and fertile materials.
- **Examples:** Medical devices, geiger counters, radioactive sources, medical isotopes, and other medical equipment.

### Hazardous Chemical Waste

- **Definition:** Any quantity of any category of listed hazardous waste.
- **Examples:** Acid, base, cyanide, and other hazardous chemicals.

### Mixed & Combined Waste

- **Definition:** Waste that contains one category of hazardous waste.
- **Examples:** Contaminated solvent, contaminated water, and other mixed wastes.

### Pharmaceutical

- **Definition:** Waste that has been used in the diagnosis, treatment, or mitigation of a human or animal illness or injury.
- **Examples:** Used syringes, glass vials, and other pharmaceutical waste.

### Sharps

- **Definition:** Needle, syringes, and other尖端利器.
- **Examples:** Used needles, syringes, and sharps containers.

### Biohazardous Waste

- **Definition:** Waste that has been contaminated with biological material capable of causing infection.
- **Examples:** Blood, body fluids, and other biohazardous materials.

### Universal & Electronic Waste

- **Definition:** Waste that contains electronic equipment.
- **Examples:** Electronic devices, computers, and other electronic equipment.

### Animal Carcasses

- **Definition:** Waste that contains animal carcasses.
- **Examples:** Animal carcasses, bones, and other animal waste.

### Non-Hazardous Waste

- **Definition:** Waste that does not contain hazardous materials.
- **Examples:** General waste, office supplies, and other non-hazardous materials.

**Disposal Guidelines**

- **Waste Identification:** Accurately identify the type and category of waste.
- **Storage & Labeling:** Use appropriate containers and labels to ensure proper disposal.
- **Disposal:** Dispose of waste in accordance with applicable regulations.

**Waste Types**

- **Radiological Waste:** Use appropriate containers and labels.
- **Hazardous Chemical Waste:** Use appropriate containers and labels.
- **Mixed & Combined Waste:** Use appropriate containers and labels.
- **Pharmaceutical Waste:** Use appropriate containers and labels.
- **Sharps:** Use appropriate containers and labels.
- **Biohazardous Waste:** Use appropriate containers and labels.
- **Universal & Electronic Waste:** Use appropriate containers and labels.
- **Animal Carcasses:** Use appropriate containers and labels.
- **Non-Hazardous Waste:** Use appropriate containers and labels.

**FOR WASTE PICKUP REQUESTS, OR DETAILED INFORMATION:** [www.shs.ucr.edu/mwpwms29w.ViewModels/7514](http://www.shs.ucr.edu/mwpwms29w.ViewModels/7514)

**Questions? Call 927 - 5528**

---

1. For Disposal of Contaminated Garbage contact Environmental Management (em��@ucr.edu), or x80-2045. For Department of Public Safety, Drug Enforcement Agency, or other concerns, contact the appropriate authority.
2. UCR Research Integrated Safety Committee meets monthly. All new policies and processes will be presented at the beginning of the meeting. All participants are encouraged to attend.
3. Updated information is available at www.shs.ucr.edu/interimprogram12w/form/7514/1.
Posted in relevant laboratories

<table>
<thead>
<tr>
<th>Biohazardous Waste</th>
<th>Medical Waste</th>
</tr>
</thead>
<tbody>
<tr>
<td>Includes any laboratory or research waste that is potentially infectious to humans, plants or animals, or would pose a potential threat to the community or the environment (e.g., organisms with significant environmental impact, or transgenic or recombinant organisms).</td>
<td>Includes all sharps and any biohazardous waste from research involving the treatment, diagnosis or immunization of humans or animals. Riverside County’s GCR Medical Waste Permit requires anyone generating, treating, or storing medical waste to comply with the following procedures:</td>
</tr>
</tbody>
</table>

1. Label a red biohazard bag with building and room number before filling it.
2. Place the waste in the red biohazard bag (orange bags are illegal in California). Do not place glass pipettes or anything that will puncture the plastic bag. Rigid objects such as transfer pipettes can be decontaminated by exposure to a 10% bleach solution for at least 30 minutes.
3. Place autoclave tape on the bag to ensure the autoclave reached proper decontamination temperature.
4. Waste must be stored in a labeled container with a tight-fitting lid before decontamination and disposal to prevent leaks.
5. When autoclaved, to dispose take the red bag directly to the building dumpster or make special arrangements with building services.
6. All waste must be decontaminated and disposed within 7 days of generation if stored at a temperature above 0°C.
7. All waste must be disposed within 90 days if stored at or below 0°C.
8. Place all sharps in a red sharps container that is rigid, leak proof, and has the international biohazard symbol.

**Additional requirements for medical waste:**
1. The door of the medical waste storage area must have a sign indicating the room contains hazardous waste.
2. The doors of the medical waste storage facility must be locked and remain closed to prevent unauthorized access.
3. The autoclave must be spore-tested monthly. For guidance, contact EH&S Biosafety at 851-827-5588.
4. The autoclave must have a chart recorder. All charts must be dated and kept by the department for 3 years.
5. All waste treatment runs must be listed on the autoclave log and the logs must be kept by the department for 3 years.

For more information [www.ehs.ucr.edu](http://www.ehs.ucr.edu)
Reminders

• Take necessary Health and Safety classes

• Read Chemical Hygiene Plan and sign

• Locate your lab’s first aid kit, safety shower, eyewash, and fire extinguisher

• Locate &/or request PPE

• Learn the hazards of any procedure you undertake and take appropriate safety measures to avoid injury.

• All procedures should have an SOP (standard operating procedure). Make sure you know and FOLLOW them!
Contact Information

- Christina Hoddle, Entomology LSO
  - Chapman108
  - Extension 24360
  - Christina.hoddle@ucr.edu

- Pamela Anne See, Safety Mentor EHS
  - Extension 25878
  - pamela.see@ucr.edu