To: Principal Investigators and Permit Holders

From: Jane Bartlett,
Associate Director, Laboratory Safety and Industrial Hygiene

Date: November 5, 2013

Subject: Annual Laboratory Safety Refresher Training, Bloodborne Pathogens Training, Chemical Inventories, Hazard Communication Training

It is time to complete annual refresher training for your staff, and update your chemical inventory. Please include discussion of safety issues pertinent to your area, e.g., building exit routes (walk the paths as a group; check for obstructions); fire extinguisher locations; emergency and accident procedures; and document the training. E-mail any questions regarding lab safety or this memo to jbartlett@caps.usc.edu.

What’s New in Laboratory Safety?

University Safety Policy – A comprehensive university health and safety policy, entitled “Injury and Illness Prevention,” was published July 30, 2013. This policy replaces outdated single-subject safety policies with a comprehensive statement of safety roles, responsibilities and expected practices within the university community.

USC Laboratory Attire - Personal Protective Equipment – EH&S is pleased to facilitate the university’s decision to institute a lab coat program. As noted in a recent Office of Research memo, lab coats will be provided, in phases, to research lab personnel; each department will have a specific laundry drop off/pick up location. Prior to roll-out, EH&S will conduct a lab-specific hazard assessment with each research group to determine the proper type of lab coat. Minimum attire for anyone working in or occupying USC research laboratory areas includes: full-length pants; fully closed shoes; lab coat (flame-resistant coat if working with flammable or pyrophoric materials); and appropriate gloves and eye protection when handling any hazardous chemical, biological or radiological material. It is important that faculty and senior staff provide an example by wearing appropriate lab attire and insist on the same for everyone in their group.

Updated Hazard Communication – The Occupational Safety and Health Administration (OSHA) revised the Hazard Communication Standard to require new formats for labels and safety data sheets (SDSs – formerly known as MSDSs). The Globally Harmonized System of Classification and Labeling of Chemicals (GHS) standardizes information on hazards, requires a uniform structure, adds an “Environmental Hazard” classification, and uses pictograms to convey hazard information and precautionary statements (e.g., PPE).
Biological Research – Thanks to efforts by the Office of Research to employ technology to optimize researcher time and effort, Institutional Biosafety Committee (IBC) protocols are now included in the iStar system; online protocol submissions will be required beginning January 2014. Training sessions on the new online IBC procedures will be held Tues., Nov. 12 at 2 pm in BCC 101 (HSC) and Wed., Nov 13 at 2 pm in RRI 121 (UPC). No RSVP is required.

New HSC EH&S Location – Please note, particularly if ordering radioactive materials, that EH&S recently moved its HSC office from CHP 148 to the Soto Building Annex (SBA).

Chemical Inventory – The Los Angeles Fire Department and various state and federal regulations require that USC maintain an up-to-date chemical inventory of all facilities that use or store hazardous materials. To meet this requirement, please review and update your chemical inventory at the EH&S Online Chemical Inventory database (http://srm.usc.edu/rmcapps). To use the “instant update” feature:

- Access your online inventory account; makes corrections if needed;
- Click the “Completed Chemical Inventory” function key (left side);
- Place a check on your inventory sites and submit;
- Click “Confirm Completion” to finalize the update.

If you do not have an on-line inventory account, contact Angela Wang (awang@caps.usc.edu; 213-280-9912) or Michelle Lee (mlee@caps.usc.edu; 323-864-3188) to assist you with obtaining one. New users may upload their inventory to populate a new account by completing the linked Chemical Inventory Upload Template and forwarding it to Angela Wang or Michelle Lee.

Select Agents – We also ask that you review the list of select agents published by the Centers for Disease Control (CDC). If you possess any listed select agent, notify EH&S immediately to register your possession of the material. Research involving a select agent requires protocol submission to the Institutional Biosafety Committee (IBC).

New PI / Laboratory Relocation – Please inform EH&S of incoming Principal Investigators and relocation of laboratory facilities at “Contact Us” so that EH&S may provide timely services (i.e., waste containers, early registration for research protocols, radioactive materials permits, required safety training, medical surveillance). Information helpful to new PIs is offered here.

Waste Management – Proper separation and labeling of your chemical waste containers dramatically affects the university’s disposal costs, and the safety of waste handlers. Disposal of unknown chemicals requires expensive testing and special treatment. For waste guidelines and on-line pick-up requests, please visit EH&S’ Hazardous Waste Management & Disposal site.

Annual Laboratory Refresher Training – All personnel who work in a laboratory must receive periodic lab safety training, as required by both the California Division of Occupational Safety and Health (Cal/OSHA) and the California Dept. of Public Health, Radiologic Health Branch. All faculty, staff, students and volunteers who work in labs must attend initial Laboratory Safety training, provided by EH&S. You the PI, or your lab manager, are also responsible to train your personnel, before they begin work, on the hazards specific to your lab and protocols, and to conduct annual refresher training for all staff members on your protocols and hazards that exist in your laboratory.
Select training topics from the list of recommended subjects on the following pages and add topics pertinent to your group. The CSB video (a U.S. Chemical Safety and Hazard Investigation Board video on the 2008 fatal UCLA lab accident) and Lab Safety Fact Sheets available at the EH&S web site are useful to incorporate into training or department meetings.

Please complete refresher training before December 31, 2013. Use the sign-in sheet for your refresher training session(s), and for initial training of new personnel; check off the topics you cover on the attached sheet and retain both sheets to document the training.

So that EH&S can track training for the university, send a copy of completed sheets (sign-in and topic checklist) to EH&S, 2001 N. Soto, SBA, Los Angeles, CA 90032; fax to (323) 442-2201; or email (as attachment) to IBC@caps.usc.edu. The IBC will delay research protocols if refresher training is not current for listed staff; also, radioactive material deliveries will be withheld after Dec. 31, 2013 to labs whose authorized staff has not completed training.

You may disregard this request if you already conducted this training after July 1, 2013 and provided attendance records to EH&S.

Annual Bloodborne Pathogens Training – Annual Bloodborne Pathogens training is required for personnel who handle human (or non-human primate) tissue, cell lines or blood, or other potentially infectious material (OPIM*). Note: this requirement applies to instructional, research and clinical labs, phlebotomists and others who may not work in a traditional lab setting. Initial training is provided by EH&S (see www.localendar.com/public/USCEHS for class schedule).

On-line Bloodborne Pathogens refresher training may also be obtained from Collaborative Institutional Training Initiative (CITI) at https://www.citiprogram.org. Each participant must affiliate with “University of Southern California – Safe Laboratory Practices” to be credited for the annual refresher. Participants already affiliated with “University of Southern California” (USC IRB) may click “Affiliate with Another Institution.”

Additionally, PIs or Lab Managers may provide the annual Bloodborne Pathogens refresher training for their staff and themselves; training must cover all elements of the Bloodborne Pathogens Standard. Required course outline and separate sign-in sheet follow in this document.

Email completed sign-in sheets to IBC@caps.usc.edu; mail to EH&S, 2001 N. Soto St., SBA; or fax to (323) 442-2201. For further information, contact a biosafety specialist at (323) 442-2200 or IBC@caps.usc.edu.

*OPIM includes amniotic, cerebrospinal, pericardial, peritoneal, pleural and synovial fluids, saliva in dental procedures, semen, vaginal secretion, and any other body fluid that is visibly contaminated with blood, e.g., saliva or vomitus. When it is difficult to differentiate between body fluids, such as emergency response, OPIM includes all body fluids.
Laboratory Safety Annual Refresher Training Topics

(Check off topics you cover during training, & send with sign in sheet to EHS, 2001 N. Soto, SBA, 90032; IBC@caps.usc.edu, or fax 323-442-2201)

☐ No Food, Drink or Gum in Laboratories: Assure that all staff members know that food for human consumption, including drinking water & powdered milk, is not allowed to be stored or eaten in any laboratory containing hazardous materials. Automatic suspension of a radioactive materials permit can be enforced if evidence of food is found where radioactive materials are used; other labs face additional penalties. Label food & water for research purposes: “Not For Human Consumption.”

☐ Housekeeping: Stress good housekeeping practices. Trip hazards and poor housekeeping are estimated to be a factor in six out of ten injuries in laboratories.

☐ Identification of Hazards: Review all potential chemical, biological and radioactive hazards used in your laboratory(s) and the tasks performed by lab staff that may cause exposure to these agents. Include potential hazards in shared facilities.

☐ Safety Data Sheets: Review the location and availability of reference materials on the hazards, safe handling, hazard classification, storage and disposal of hazardous materials in your laboratory. References must include, but are not limited to, Safety Data Sheets (SDSs – formerly known as MSDSs) from chemical suppliers. MSDS On-line, at capsnet.usc.edu/EHS (“MSDS” link at right), provides manufacturer-specific SDSs for chemicals at USC. Suggestion: ask a staff member to locate emergency information on a randomly chosen chemical in your lab. Discuss that chemical’s hazards, recommended protective measures and appropriate emergency response.

☐ General Epidemiology: Explain the modes of transmission of the hazardous agents in your lab (respiratory, absorption, ingestion, injection).

☐ Protective Measures: Discuss the measures your staff can take to protect themselves from laboratory hazards, including appropriate work practices, personal protective equipment, and emergency procedures. Suggestion: have staff find the nearest safety shower/eye wash while blindfolded, with or without help from coworkers. Review PPE required in your lab (clean lab coat, gloves, safety glasses or goggles, closed-toe shoes, long pants [no bare legs]).

☐ Waste Disposal: Review hazardous waste disposal procedures, including waste segregation, labeling, appropriate use/placement of containers, placing lids on bio-cans and table top containers when not in use, and record keeping. Only appropriate, properly labeled containers can be picked up. Containers must be labeled “Hazardous Waste,” and the accumulation start date clearly marked. Labels must also include a) composition; b) solid/liquid; c) hazardous properties (e.g. flammable); d) PI name; e) lab location. Links: Proper Containers; Guidelines; Pickup Request (incl. electronic).

☐ Written Protocols: Review the location of your written protocols, and the need to follow those procedures, particularly for protocols submitted to research oversight committees.

☐ Carcinogen Use: Discuss the properties and hazards of all carcinogens used in your laboratory. Review any tasks that may expose workers to carcinogenic materials. Discuss control measures, including the requirement to post usage and storage areas, and employee responsibility to follow safety practices. To request chemical exposure monitoring, contact EH&S at 323-442-2200.

☐ Record Keeping Procedures: Review record-keeping procedures, such as Disposal Record forms, Controlled Substance or Select Agent Access Logs, Radioactive Material Usage Records, Transfer of Radioactive Material forms, and Wipe Test results (if required).
Contamination Control: Review: the defined work areas in your lab required for radioactive materials, carcinogens, toxins and select agents; selection of appropriate instrumentation and survey methods; and the need for frequent monitoring, visual indication of area boundaries, and prompt decontamination and documentation of spills.

Transfer of Radioactive Material: Discuss that transfers of radioactive material, either to another campus location or to another institution, requires prior written approval by Radiation Protection.

Ordering Radioactive Material: *NEW EH&S Office.* Review how to order radioactive materials. Include use of the USC Radiation Paperless Requisition Entry Process (WEBBA Budget Administration System) and information necessary to complete an order (permit holder, permit number, chemical form, and amount of activity ordered). All deliveries must be made to the HSC Environmental Health & Safety Office, 2001 N. Soto St, SBA, Los Angeles, CA 90032.

Radioactive Material Inventory Control: Review your specified locations and procedures for radioactive material use / storage. Stress the requirement for accurate and timely entries in the online Radioactive Protection system and placing the RMC number on all stock vials, tubes, etc.

Changes on the Radioactive Material Use Permit: Discuss any changes or amendments to your Use Permit in the last 12 months (e.g., new research protocols; new authorized users; addition of new radionuclides; changes in possession or procedure limits, or authorized locations).

Personal Dosimeters (if applicable): Emphasize the proper use and care of personal dosimeters (Whole Body & Ring badges). Review how to return badges to Radiation Protection, how to report lost/damaged badges, personnel changes, and any exposure concerns.

Security of Radioactive Material, Select Agents, Controlled Substances, and DOJ Chemical Precursors: Discuss your procedures for assuring that these materials are secure when stored and in use. Lock laboratory doors or storage areas whenever materials are unattended.

Proper Use of Portable Survey Instruments: Review the proper use of portable survey instruments to detect possible contamination, and the need to monitor hands with disposable gloves before, during and after handling radioactive material.

Emergency Response and Notification: Discuss how to report accidents and incidents that involve hazardous materials (including biologicals and rDNA), and what to do following an exposure incident, including how and where to obtain medical attention, and what documentation is required.

Exposure Control Plan: Discuss your laboratory’s Exposure Control Plan. Report all biohazardous spills and incidents to the Biosafety Office (323-442-2200, IBC@caps.usc.edu).

Post-Exposure Follow Up: Explain what to do if someone is exposed a hazardous material, and the post-exposure evaluation and follow-up that will occur following an exposure incident.

Engineered Sharps: Use safety engineered sharps whenever possible. Stress to never recap a needle, leave needle or other sharp unattended, or place any needles in trash or biohazard bag!

Conduct Safety Meetings: Review and discuss any hazards that were cited in safety audits of your laboratory. Set periodic meeting times throughout the year to discuss operating procedures and provide opportunity for your staff to discuss and resolve any safety concerns. See the CSB video and Safety Fact Sheets at capsnet.usc.edu/LabSafety to provide topics for discussion during safety meetings. Document meeting attendance with a sign-in sheet that is retained in department files.

Additional Topics:

USC Laboratory Safety • 2001 N. Soto St, SBA, 90032 • Tel: 323 442 2200 • Fax: 323 442 2201 • capsnet.usc.edu/EHS
Laboratory Safety Annual Refresher Training for Lab Staff

Principal Investigator: ___________________________  Topics Covered: (attach checked-off topics list or a description)
Date: ______________  Location: ___________________  Start Time: ______________  End Time: ______________
Instructor (PI/Permit Holder/ Lab Mgr): ____________________  Instructor's Signature: ____________________  Permit #: ______________

Please do not use nicknames. Include instructor name (above) and also as an attendee (below).

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*Do not use SSN.*
Annual Bloodborne Pathogens Training Required Outline

(Cover all topics below. Send sign-in sheet to EHS, 2001 N. Soto, SBA 90032; IBC@caps.usc.edu; or fax 323.442.2201)

Principal Investigators may conduct annual refresher training in lieu of sending employees to training classes provided by Environmental Health and Safety (send new employees to an EH&S class).

The below listed training topics constitute the minimum required elements, are taken directly from the Bloodborne Pathogens standard. View www.osha.gov/SLTC/bloodbornepathogens and USC’s program for more information. An EH&S PowerPoint to use in training may be requested from IBC@caps.usc.edu.

1. **An Accessible Copy of the Standard:** Inform personnel of where to find the Cal/OSHA Bloodborne Pathogens Standard and an explanation of its contents (www.dir.ca.gov/title8/5193.html).

2. **Epidemiology & Symptoms:** Explain general epidemiology & symptoms of bloodborne pathogens.

3. **Modes of Transmission:** Explain the modes of transmission of bloodborne pathogens.

4. **Risk Identification:** Explain the appropriate methods to recognize tasks and other activities that may involve exposure to blood and other potentially infectious materials (OPIM).

5. **Employer’s Exposure Control Plan:** Explain your lab’s Exposure Control Plan and how employee(s) can obtain a copy of the written plan. Review what to do in case of exposure.

6. **Methods of Compliance:** Explain the use and limitations of methods to prevent or reduce exposure, including appropriate engineering (engineered sharps, biosafety cabinets), administrative or work practice controls, and personal protective equipment (gloves, safety glasses).

7. **Decontamination and Disposal:** Review proper decontamination and disposal procedures.

8. **Personal Protective Equipment:** Discuss selection, proper use, location, removal, handling, decontamination and disposal of personal protective equipment for work in your lab.

9. **Hepatitis B Vaccination:** Remind personnel about the Hepatitis B vaccine, its efficacy, safety, benefits of being vaccinated, and that it is provided free of charge to employees through the USC Medical Surveillance Program at (323) 442-2200 or IBC@caps.usc.edu.

10. **Emergencies:** Provide information on appropriate actions and persons to contact in an emergency involving blood or OPIM. (USC BBP Exposure Procedure document available to download).

11. **Exposure Incident, Post-Exposure Evaluation and Follow-Up:** Explain exposure incident procedures, including how to report an incident, location of medical facilities, and that medical follow-up that will be available. Note: If a Sharp is involved, the Sharps Injury form must be completed for OSHA recordkeeping in addition to the Supervisor’s Report of Injury.

12. **Signs and Labels:** Explain all signs, labels and/or color coding required in the lab.

13. **Interactive Questions and Answers:** Provide an opportunity for interactive questions and answers.

**NOTE:** Additional training is required for employees of HIV, HBV and HCV Research Laboratories. Contact EH&S at IBC@caps.usc.edu for information.
Annual Bloodborne Pathogens Training

**Date:**

**Start Time:**

**End Time:**

**Location:**

**Facilitator Name:**

**Qualification (e.g., PI, MD, Nurse, Lab manager):**

**Signature indicating all required topics were covered:**

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<td>1. Location &amp; Explanation of Standard</td>
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