

*Note: An electronic version of the Lab Safety Resources Binder with active web links is available at [http://oregonstate.edu/ehs/lab\\_safety](http://oregonstate.edu/ehs/lab_safety)*

## Laboratory Safety Resources Binder (LSRB) for Laboratory Supervisors and Principal Investigators (LSs/PIs)

The LS/PI has primary responsibility for safety in the laboratories under their control. The LS/PI is responsible for ensuring, with documentation, that all employees working in their laboratory(ies) have the materials and training needed to work safely and in compliance with regulations and Oregon State University (OSU) policy. “Employee” is defined as an individual who is paid by Oregon State University or a LS/PI who is employed to work in a laboratory workplace. This may include faculty, staff, post-doctoral fellows, graduate students, and student workers. For training purposes, unpaid volunteers, students, and interns shall be treated as employees.

OSU Environmental Health and Safety (EH&S) has developed programs and resources to help LSs/PIs meet safety and regulatory goals. This binder serves as the framework for an ad-hoc, laboratory-specific health and safety program that LSs/PIs should implement. One LSRB should cover an entire research program, unless two distinct research programs are operated at separate locations (e.g., separate research programs conducted at Corvallis campus and Hatfield Marine Science Center).

**Note: The table below summarizes the major items an LS/PI must address when implementing an effective health and safety program. Items in bold should be the LS’s/PI’s first priority, as these address major regulatory requirements and/or OSU policy. Several of these items may be delegated to a lab manager or graduate student, but the PI is responsible for ensuring task completion.**

Information, Postings, and Forms	LS/PI Role
<b>Lab-Specific Chemical Hygiene Plan (LCHP)</b> ( <a href="http://oregonstate.edu/ehs/chp">http://oregonstate.edu/ehs/chp</a> )	<b>Create an LCHP and update it as new equipment and processes are added to or removed from your laboratory(ies).</b>
Job Hazard Assessment Forms (See Appendix I of the OSU CHP or LCHP Template, available at <a href="http://oregonstate.edu/ehs/chp">http://oregonstate.edu/ehs/chp</a> )	Complete hazard assessments prior to writing lab-specific standard operating procedures (SOP) for potentially hazardous equipment and processes.
<b>Lab-Specific SOPs</b>	<b>Create lab-specific SOPs for potentially hazardous equipment and processes.</b>
Lab Hazard Sign ( <a href="http://oregonstate.edu/ehs/LabHazSign">http://oregonstate.edu/ehs/LabHazSign</a> )	Ensure the entrance to each of your labs is clearly marked with the current OSU Lab Hazard Sign.
Emergency Poster ( <a href="http://emergency.oregonstate.edu/download">http://emergency.oregonstate.edu/download</a> )	Ensure this poster is clearly displayed in your laboratory(ies).
Lab Safety Quick Reference (flip chart) (hard copy available from EH&S or electronic version at <a href="http://oregonstate.edu/ehs/sd0081">http://oregonstate.edu/ehs/sd0081</a> )	Ensure this is clearly displayed in your laboratory(ies).
Lab Safety Self-assessment Forms ( <a href="http://oregonstate.edu/ehs/sites/default/files/pdf/laboratory_safety_assessment.pdf">http://oregonstate.edu/ehs/sites/default/files/pdf/laboratory_safety_assessment.pdf</a> )	Ensure periodic (at least annual) laboratory safety self-assessments are performed and documented.
Injury/Illness Reports ( <a href="http://oregonstate.edu/admin/hr/document/pdf/roa">http://oregonstate.edu/admin/hr/document/pdf/roa</a> )	Report all injuries to the Office of Human Resources using the forms on their website.
Accident/Near-Miss Reports and Discussion (Appendix I of the OSU LCHP Template)	Encourage employees to report all accidents/near-misses. Document and discuss these occurrences with your research group. These can be valuable learning opportunities and may lead to safety improvements in the lab.
Overnight/Unattended Lab Reaction Form (Appendix I of the OSU LCHP Template)	Ensure employees label all fume hoods that contain unattended reactions/processes.
Employee Training	
<b>EH&amp;S-provided Training</b> ( <a href="http://oregonstate.edu/ehs/training">http://oregonstate.edu/ehs/training</a> )	<b>Assign training found on the EH&amp;S website for employees to complete. Document that they have completed assigned training.</b>

<b>LS/PI Lab-Specific Training (See Appendix I of the LCHP Template for a sample Employee Training Documentation Form.)</b>	<b>Conduct lab-specific training with employees that covers lab safety, chemical use, labeling and disposal of chemicals, and use of equipment and processes in your laboratory(ies). Document the training.</b>
LCHP ( <a href="http://oregonstate.edu/ehs/CHP">http://oregonstate.edu/ehs/CHP</a> )	Ensure, with documentation, that all employees read the LCHP.
Safety Instructions ( <a href="http://oregonstate.edu/ehs/safety-instructions">http://oregonstate.edu/ehs/safety-instructions</a> )	Select and assign EH&S safety instructions for employees to read, and document that they have completed that training.
<b>Lab Equipment and Personal Protective Equipment (PPE)</b>	
<b>LS/PI Role</b>	
List of Laboratory-Appropriate Clothing and PPE	Create a list that describes what clothing employees are allowed (and NOT allowed) to wear in your laboratory(ies). Describe the PPE used in your laboratories. Ensure all employees dress appropriately and use the correct PPE.
<b>Chemical Spill Kit</b> ( <a href="http://oregonstate.edu/ehs/sites/default/files/pdf/si/spill_response-chemicals_si.019.pdf">http://oregonstate.edu/ehs/sites/default/files/pdf/si/spill_response-chemicals_si.019.pdf</a> )	<b>Assemble and maintain a chemical (and biological, if necessary) spill kit that is suitable for the types and volumes of chemicals used in your laboratory(ies). Clearly label the spill kit, and ensure that all employees know how to use its contents. Chemical spill kits can now be purchased from Chemical Stores in Gilbert Hall (Corvallis main campus).</b>
<b>Chemical Storage, Use, and Disposal</b>	
<b>Safety Data Sheets (SDS)</b> ( <a href="http://oregonstate.edu/ehs/msds">http://oregonstate.edu/ehs/msds</a> )	<b>Ensure employees reference current SDSs (formerly MSDSs) and know where to find them.</b>
<b>Chemical Inventory</b> ( <a href="http://oregonstate.edu/ehs/cheminv">http://oregonstate.edu/ehs/cheminv</a> )	<b>Maintain and regularly update an online chemical inventory with EHS software that reflects the chemicals stored in your laboratory(ies).</b>
Hazardous Waste Labels ( <a href="http://oregonstate.edu/ehs/waste">http://oregonstate.edu/ehs/waste</a> )	Ensure all chemical containers and hazardous waste containers are properly stored and labeled (chemical name, NFPA or HMIS hazard ratings, chemical waste label).
Compressed Gas Cylinder Storage ( <a href="http://oregonstate.edu/ehs/sites/default/files/pdf/si/gas_cylinder_safety_si022.pdf">http://oregonstate.edu/ehs/sites/default/files/pdf/si/gas_cylinder_safety_si022.pdf</a> )	Ensure all compressed gas cylinders are properly secured and stored.
Hazardous Waste Disposal ( <a href="http://oregonstate.edu/ehs/sites/default/files/waste-hazardous_disposal_si008.pdf">http://oregonstate.edu/ehs/sites/default/files/waste-hazardous_disposal_si008.pdf</a> )	Ensure hazardous waste (chemical, biological, and radioactive) is disposed of properly.
Shipping Hazardous Material ( <a href="http://oregonstate.edu/ehs/sites/default/files/pdf/si/hazardous_material_shipping_si034.pdf">http://oregonstate.edu/ehs/sites/default/files/pdf/si/hazardous_material_shipping_si034.pdf</a> )	Ensure, with documentation, that hazardous material is shipped properly.
Chemical Reuse Program ( <a href="http://oregonstate.edu/ehs/sites/default/files/pdf/si/chemical_reuse_program_si093.pdf">http://oregonstate.edu/ehs/sites/default/files/pdf/si/chemical_reuse_program_si093.pdf</a> )	Ensure that all unwanted chemicals are offered to EH&S for reuse prior to disposal.

In addition to (or in lieu of) this Lab Safety Resources Binder, LSs/Pis may maintain an electronic version, provided the elements listed above are included. Employees must be provided access to a copy of the LCHP and SOPs, either in paper form or electronically. The rationale for using a physical version of the LSRB is that it can be used as a readily-available training resource for employees, and in the event of a visit from a regulatory agency, demonstrates that the LS/PI is maintaining an up-to-date health and safety program for their laboratory(ies). An electronic (.pdf) version of this document with active links is available on the EH&S website ([http://oregonstate.edu/ehs/lab\\_safety](http://oregonstate.edu/ehs/lab_safety)).

EH&S offers various training presentations/courses (<http://oregonstate.edu/ehs/training>), such as:

- Radiation Safety Orientation
- Lab Hazard Awareness
- Animal Handler Safety Awareness
- Hazard Communication: Safety Data Sheets and the Global Harmonizing System
- Laboratory Biosafety and Bloodborne Pathogen Training
- Fire Extinguisher Use Training
- Respirator Training and Fit Testing (<http://oregonstate.edu/ehs/SD0020>)

NOTE: Some of the presentations/courses above are required for certain lab workers and require periodic refresher training.

The EH&S website contains the most up to date regulatory requirements, university policies, and links to EH&S services, such as:

- Hazardous/biological/radioactive/sharps waste disposal (<http://oregonstate.edu/ehs/hmguid>)
- Lab Safety Consultations (<http://oregonstate.edu/ehs/lab-safety-consultation>)
- Respirator training and fit testing (<http://oregonstate.edu/ehs/SD0020>)
- Sterilization of biologically contaminated spaces (contact the OSU Biological Safety Officer)
- Autoclave testing (<http://oregonstate.edu/ehs/autoclave-test-kit>)
- Radiation safety consultation and oversight (<http://oregonstate.edu/ehs/rso>)
- LCHP guidance (contact EH&S)
- Online Chemical Inventory (MSDS online) (<http://oregonstate.edu/ehs/cheminv>)
- Safety Data Sheets (SDS, formerly called MSDS) (<http://oregonstate.edu/ehs/msds>)
- Lab sign request forms (<http://oregonstate.edu/ehs/LabHazSign>)
- Asbestos assessment and abatement (<http://oregonstate.edu/ehs/asbestos>)
- Ergonomics consultations/training, and more

#### **AUTHORIZATIONS:**

Information about radioisotopes or radiation-emitting machines (<http://oregonstate.edu/ehs/rso>) that are governed by the provisions of a license and/or regulations from the State of Oregon can also be found on the EH&S website, including EH&S requirements prior to purchasing new radiation-emitting equipment.

Information about the OSU Institutional Biosafety Committee (IBC) (<http://oregonstate.edu/ehs/bio>), which oversees all work conducted at OSU involving recombinant DNA and hazardous biological material, is also available. Any research project/program using potentially hazardous biological material must be registered with the IBC.

#### **SPILLS:**

Biological or chemical spills that are too large or hazardous to deal with using standard laboratory personal protective equipment and spill kits should be reported to Public Safety (541-737-7000) any time for assistance. Information about the spill and hazards should be provided, and Public Safety will contact the appropriate personnel in EH&S to clean up the spill. **Always dial 911 if there is a serious injury.** Each laboratory should have a well-stocked first aid kit so that minor injuries can be handled. Accidents and near misses must be documented, as they are learning opportunities and a chance to evaluate lab practices, procedures, equipment, lab setup, or engineering controls. All injuries must be properly reported using the forms provided by the Office of Human Resources. (<http://oregonstate.edu/admin/hr/document/pdf/roa>).

#### **WASTE PICKUP:**

Hazardous, biological, radioactive, and sharps waste removal/disposal requests can be made via the EH&S website (<http://oregonstate.edu/ehs/waste>). For more information about hazardous waste handling and disposal see the OSU CHP and EH&S website, or contact a member of EH&S staff.

#### **FACILITY REPAIRS:**

For repairs, contact the Work Coordination Center via their webform. (<http://oregonstate.edu/facilities/wcc/>)