

Getting Started: A Guide for New Principal Investigators

Laboratory Safety

The Laboratory Safety Requirements below apply to all OSU research, teaching, and support spaces that use or store hazardous materials or equipment (such as a lab, shop, mechanical room, art studio, etc.).

Supervisor and PI Responsibilities

OSU Principal Investigators (PI's) are required to register labs, personnel, and their chemical inventory with Environmental Health & Safety (EH&S). Registration can be done at <http://my.ehs.oregonstate.edu/qualtrics/pi-registration>. PIs are also responsible for maintaining safe working conditions, ensuring worker safety training, communicating hazards associated with their space and maintaining an annual up-to-date chemical inventory.

EHS Assistant for Lab Safety

After PI's register with EH&S, they will be set up in the EH&S Assistant ([EHSA](#)) database. The program is designed to assist with regulatory compliance and should be used as a tool to enter and update your chemical inventory, register lab rooms and employees, view employee training records, and address deficiencies noted in inspection reports.

Chemical Inventory:

All OSU groups that use or store chemicals must maintain an up-to-date chemical inventory in the EHSA online inventory system. Information regarding what must be included and excluded from your chemical inventory can be found on the [Chemical Inventory Guidelines](#) Safety Instruction.

Lab-Specific Chemical Hygiene Plan (L-CHP) and Standard Operating Procedures (SOPs)

Each Laboratory Supervisor/Principal Investigator (LS/PI) must maintain an L-CHP, which should contain lab-specific SOPs. The [L-CHP Template](#) can assist with creation to an L-CHP but does not include lab-specific SOPs. A copy of the L-CHP must be readily available to employees and can be accessed physically or electronically.

Chemicals, equipment, and processes identified as particularly hazardous or high risk require a lab-specific SOP if the topic is not covered in the L-CHP. SOPs should be reviewed by all employees in the laboratory. An SOP template is available at the [SOP template library page](#).

Safety Training

Both initial and refresher training is required for each employee. All lab employees must complete the [OSU Laboratory Safety Training Program](#). Additional training may be required based on lab practices or contents. More information on training can be found on the [EH&S training page](#). All trainings required by EH&S are documented via the EHSA Program.

PIs and supervisors should augment an employee's training with additional lab-specific training materials tailored to their unique work (i.e. acid washing, etc.). Lab-specific training must be documented. The [Employee Training Documentation Form](#) can be used to assist with documenting lab-specific training.

Lab Safety Resources Binder

OSU EH&S provides a Lab Safety Resource Binder to assist Lab Supervisors and Principal Investigators (LSs/PIs) meet safety and regulatory goals. The binder should be kept in a central location within the lab so employees can have easy access to required safety information, including your lab-specific Chemical Hygiene Plan, training documents, job hazard assessment, SOPs, etc.

An electronic version of the basic Lab Safety Resources Binder information is also available at http://ehs.oregonstate.edu/lab_safety, or contact EH&S to request a copy and binder.

Access to Safety Data Sheets (SDSs)

All employees who work in labs/shops/spaces on campus that contain chemicals or other hazardous materials must have access to SDSs (or MSDSs). If your lab/shop/space has computer and internet access within, you may use OSU's [MSDS online](#) program to access SDSs for your hazardous materials. If no internet access is available, hard copies must be available in the space.

Lab Caution Sign(s)

Every laboratory room, teaching lab, workshop, chemical storage room, and space with materials not commonly found in an office requires a lab caution sign at each entrance. The signs are produced by EH&S, but it is the responsibility of laboratory personnel to provide information to keep the sign up-to-date. A Lab Caution Sign can be requested here: <http://ehs.oregonstate.edu/LabHazSign>. If no hazards are present, you can also request a Notice sign to indicate emergency/contact information.

Assessments: Laboratory and Hazardous Waste

EH&S conducts official lab assessments on a 12 to 18 month plan based on OSU's building list and associated lab/shop hazard rankings. Deficiencies noted during an assessment should be addressed in a timely manner; priority items must be corrected within 30 days and necessitate a follow-up assessment.

EH&S will conduct a [laboratory consult](#) of your space upon request as well; no official report is generated during these consults.

Lab Set-up

Equipment

- Fume Hoods: EH&S annually inspects all laboratory fume hoods on campus. Before using a fume hood, ensure that the hood has been inspected within the year (see the sticker on the fume hood). If the hood is not working properly, notify EH&S and Facilities Services (contact info at end of document).
- Eyewash & Safety Showers: EH&S annually inspects all emergency safety showers. Lab personnel are required to conduct and document inspections of eyewashes on a *weekly* basis. A copy of the "Emergency Eyewash/Drench Hose Inspection Record" is available in the Lab Safety Resources Binder and online: [Eyewash & Safety Shower Safety Instruction](#). If your eyewash or shower does not work properly, please notify EH&S and Facilities Services.
- Autoclaves: Autoclaves need periodic testing to ensure proper functioning. If your lab will use a new autoclave, be sure to enroll in the [autoclave testing program](#) to request an autoclave testing kit.
- Drying ovens: OSU requires a written safety procedure posted on the front of the oven. Information on the procedure should include, but is not limited to, time and temperature maximums for specific uses.

Chemical Storage

- Flammable and combustible liquids exceeding ten gallons must be stored inside an approved flammable storage cabinet.
- Liquid chemicals such as solvents and concentrated acids or bases require secondary containers.
- No glass storage containers are permitted on the floor.
- Ensure all chemicals stored together are compatible (including gas cylinders).
- Labeling: All chemical containers one gallon or larger must be labeled in plain English (e.g. Ethanol rather than EtOH) and must be legible. If the liquid is in a container less

than a gallon in size, an acronym/abbreviation may be used if a corresponding abbreviations page is accessible in the lab. EH&S provides a basic [abbreviations page](#). More labeling information is available in the [chemical container labeling safety instruction](#).

- Chemical reactions left unattended without proper storage or labeling, must have a “[Overnight/Unattended Reaction Posting](#)” nearby the experiment.

Laboratory Self-Assessments

A lab self-assessment is required annually and will help fulfill Chemical Hygiene Plan requirements. More information: [Laboratory Safety Self-Assessment Form](#), [Self-Assessment Guide](#).

Hazardous and Universal Wastes

Hazardous and universal wastes generated at OSU must be disposed of through a system managed by EH&S.

- All hazardous waste must be appropriately labeled using OSU’s waste label. Labels can be printed ([Hazardous Waste Label](#)) or you can request a hard copy via the [hazardous waste pickup request system](#).
- Sharps (including needles, razor blades, syringes, or even used microscope slides) must be disposed in a red sharps container. These are available at Chemistry Stores in Gilbert Hall (OSU EH&S does not provide sharps containers).
- A hazardous waste and/or universal waste pickup request can be found under the “How do I” tab at: <http://ehs.oregonstate.edu/waste>. You can also use this link to request primary and secondary waste containers as well as to offer unused chemicals for the chemical reuse program.
- A [Hazardous Waste Determination](#) is required for the waste in your lab. If you have chemical waste that is routinely produced, fill out the determination form and EH&S will send you a finished copy of the determination for your records.

Personal Protective Equipment (PPE)

- Closed-toed shoes must be worn at all times by all individuals that are occupying the laboratory.
- Laboratory coats, gloves, and eyewear are required to be worn while working with or in the vicinity of hazardous materials that pose a potential hazard to the employee.
- Some operations and procedures may warrant protective clothing in addition to laboratory coats, gloves, and protective eyewear. PPE such as respiratory protection, hearing protection, etc. should be discussed with EH&S prior to use.

Lab Coats – Laboratories with chemical hazards are required to provide and utilize lab coats. The OSU laboratory safety coat program is sponsored by EH&S and provides safety coats for all OSU laboratory employees at no charge to the department. Your building manager or department personnel should be able to tell you where the lab coats are exchanged.

Eye Protection – OSU policy and OSHA regulations require that appropriate eye protection be provided to and worn by employees whose jobs expose them to eye hazards. Normal prescription glasses do not provide adequate protection from injury to the eyes and do not meet ANSI eye protection specifications. If an employee is required to wear prescription eyewear, prescription safety glasses are considered a reasonable departmental expense and shall be covered by the department. Questions regarding the [Safety Glasses Prescription Program](#) can be directed to EH&S.

Chemical Spills

All laboratories with hazardous chemicals are required to have a chemical spill kit readily accessible within the space. Chemical spill kits are available for purchase from Chemistry Stores in Gilbert Hall. Instructions on cleaning up a chemical spill can be found [here](#) and should be reviewed before attempting to clean up a spill: If the spill is large (greater than 1 gallon), involves a highly hazardous chemical, or if the employee does not feel comfortable cleaning up the spill, call the public safety emergency line (541-737-7000) to report it for immediate EH&S response. You can also use this number to report any after-hours spills.

Specialty Areas

Each program listed below will have special requirements. Each program also has their own assessment and check off sheet. The program manager can provide you a copy upon request.

Biosafety Labs (BSL)

Programs have been established to provide a central registry of potentially hazardous microbial agents and other hazardous biologicals, recombinant DNA activities, and bloodborne pathogens and zoonotic agents of human disease. If you plan to work with materials described above, contact the Biological Safety Officer at jbc@oregonstate.edu. More information is also available on the Biological Safety webpage: <http://ehs.oregonstate.edu/bio>

Radioactive Materials or Radiation-Producing Machines

All research and teaching activities at OSU that involve the possession and/or use of radioisotopes or radiation-emitting machines must apply for a Radiation Use Authorization (RSC102). Information on training, inspections, waste procedures, etc. is available at <http://ehs.oregonstate.edu/rso>

Lasers

Some lasers must be registered with EH&S: <http://ehs.oregonstate.edu/laser>. Laser users must complete online training (required for use of Class 3B and 4 lasers; recommended for all others), and should schedule machine-specific training with the laser administrator of the laser systems they will use.

Shops

A shop at OSU is any area that has equipment, processes, or activities relating to lathes, surface grinders, milling machines, table saws, drill presses, etc. Each type of shop presents specific safety hazards, which if not properly identified and addressed, can lead to injury. The EH&S Shop Safety Program provides inspections and recommendations to shops for the hazards present. EH&S will work with shop personnel to help ensure appropriate safety programs and training are in place to protect workers from hazards they could encounter as part of their work assignments. More information: <http://ehs.oregonstate.edu/shop-safety>

DEA Controlled Substances

All DEA Controlled Substances must be registered with the DEA prior to purchase. EH&S is available to assist laboratories in managing the use of the controlled substances in research. More information: <http://ehs.oregonstate.edu/controlled-substances>

Other EH&S Resource Links:

- EH&S Home Page: <http://oregonstate.edu/ehs/>
- EH&S Contact Information: <http://oregonstate.edu/ehs/staff>
- EH&S Assistant (EHSA): <http://ehs.oregonstate.edu/ehs-assistant>
- Report a Safety Concern: <http://oregonstate.edu/ehs/report-safety-concerns>
- Report a Near-Miss: ehs.oregonstate.edu/near-miss
- Access to Safety Training Records: <http://oregonstate.edu/ehs/safetytrainingreview>
- EH&S general email: ehs@oregonstate.edu