

Research Safety Annual Spotlight Topics

Use this monthly spotlight on safety to work through the general safety oversight of your lab throughout the year. You'll notice that some months set you up well for future monthly safety focus projects! Also review the quarterly safety training at the end of this list, and work with your lab to ensure everyone is properly trained. If you have questions, contact EHS by calling 650-723-0448 and ask to speak to a Lab Safety member.

January: Risk Assessment

Review the Laboratory Risk Assessment Methodology with your lab group and how it maps into the scientific method. Explore, Plan, Challenge, Assess!

- *Review* the EH&S website page on [Risk Assessment](#) and the [Learning Library video](#).
- *Print* the [Risk Assessment Tool](#) and select an experiment in the lab to review with your lab group. Evaluate the outcome. What was the risk rating? What could you change to reduce the risk? What outcomes are unacceptable?

February: SOPs

A Standard Operating Procedure (SOP) is a set of written instructions that describes in detail how to perform a process or experiment safely and effectively. Time to review your lab's SOPs. Does your lab have the appropriate SOPs in place? Are there processes or experiments that should have a written SOP?

- *Review* the [SOP](#) webpage and the [EHS curated research protocols and SOPs](#), as well as the General Use [SOPs](#)
- *Determine* what processes or experiments require an SOP by consulting the [Restricted Chemicals and High Risk Procedures](#). Priority should be given to any operation involving Restricted Chemicals, certain higher risk chemicals, or higher-risk procedures. Review the templates and General Use SOPs before developing your lab's SOP and submit to EH&S via the [SOP Intake Form](#) for a courtesy review

Lab members must have an SOP approved by the PI prior to working with SU Restricted Chemicals

Hazardous Work Authorizations: Specific authorizations are required for certain types of research, including those using [biological hazards](#), [radiation](#), [lasers](#), [animals](#), or work with [human subjects](#). Be sure all lab members on these protocols know where to find copies of the protocols and are familiar with the hazards and work.

In addition, you may need to register with EHS for certain high hazard activities. High hazard work includes physical safety hazards such as confined space entry, work from heights, use of equipment such as cranes or hoists, and certain electrical voltages or equipment which carry the potential to pose serious risks to researchers. PIs who conduct high-hazard research which meets the threshold criteria will need to register in this program. Please refer to the [New High Hazard Research Policy](#) for more information.

March: PPE Hazard Assessment, Purchase & Use

Time to review your lab's Personal Protective Equipment to ensure it protects your researchers. PPE may become worn or damaged during use or overtime. It is important to inspect your PPE to make sure it is still adequate and will protect you from the hazards you are working with.

- *Review* the [PPE](#) webpage, the learning library video on [PPE](#) and your [current PPE assessment](#), which should be found on your [BioRAFT](#) document tab. If a new assessment is required, update, review with the lab, and upload it to your BioRAFT document tab.
- *Ensure* everyone in the lab is trained on the [PPE Training Guide](#) and communicate requirements for street clothes through onboarding, meetings, signage, SOPs and informal reminders.
- *Check* out the [PPE Quick Guide](#)
- *Check* the condition of PPE and replace any that is damaged
- *Contact* EHS if respirators are used in your lab
- *Ensure* that the proper PPE is readily available to researchers. Request [PPE cost-sharing](#) from EH&S if applicable.

A list of common items with links to purchase or acquire is available on the [EH&S Safety Store](#)

April: Tier III (group-specific) Training: Plan & Develop

Researchers who work with hazardous materials or processes in the lab must be provided with in person Tier III group-specific training that includes an orientation of emergency and safety equipment and procedures, a review of hazards specific to the lab, where to find safety information, and more.

- **Review** your lab's [group-specific training](#)
- **Ensure** all researchers have completed the [Lab-specific training checklist](#) and identify required Tier II training using the [Training Needs Assessment Tool](#) by going to STARS > My Training > Training Needs Assessment
- **Develop** [lab specific training](#) for the hazards in your lab. Train researchers on the lab specific training
- **Save** training records in the [BioRAFT](#) documents tab

May: Exposure Control Devices (ECDs)

ECDs include chemical [fume hoods](#), biosafety cabinets, snorkels, exhaust hoods and gas cabinets. Be sure that ECDs have current certifications. Follow best practices for proper operation and optimal airflow. Keep fume hoods and biosafety cabinets free of excess materials. If an ECD malfunctions, discontinue use and request repair. Check out the [Lab Ventilation Management Program](#)

Annual certification: Make sure your Fume Hood and Biosafety Cabinet (BSC) are certified on an annual basis. Check the certification date on your Fume Hood or BSC. If Fume Hood certification is expired or approaching within 8 weeks contact your facilities or building manager; if your BSC is expired, contact TSS to schedule an appointment - DWornell@techsafety.com or call 800-877-7742.

June: Regulated Waste Practices Review

There are many different rules for storing regulated (hazardous/chemical, biological/medical and radioactive) waste in your labs. It can be hard to keep track, so EH&S has summarized the main things you need to know to store waste in your lab safely.

Hazardous Waste: All lab wastes containing chemical constituents are presumed by the State of California to be regulated hazardous wastes. Do not dispose of chemicals, solutions, or waste containing hazardous chemicals in any sink or floor drain unless it is listed on nonhazardouswaste.stanford.edu. Do not neutralize or otherwise treat waste, but rather dispose of it directly in a hazardous waste container marked with a waste tag from wastetag.stanford.edu. For more information check out these webpages:

- [Handling and Storing Hazardous Waste](#)
- [Recycling and Disposal Guide](#)
- [Empty Container Decision Tree](#)
- Request chemical waste containers from [EH&S Safety Store](#)
- Follow [Wilson the Waste Container](#) on his journey as a waste container at Stanford

For old hazardous waste (greater than one year), submit a pick up request using wastepickup.stanford.edu. If found during a county inspection, note on the pick up request that this is an item cited by Santa Clara County (SCC) HM inspection.

For unknowns, submit a [Request for Analysis of Unknown Material](#)

Biohazardous/Medical Waste: Determine if your material meets the definition of [biohazardous waste](#) and store it properly following the guidance on this [page](#).
[Sharps disposal guidance](#)

Radioactive Waste: Does your lab generate radioactive waste? If so, you will work closely with Health Physics on [proper storage and disposal of radioactive isotopes](#) and any items used during your research with radioactive material that you wish to dispose of.

Still unsure how to manage your waste? Have unique waste streams that don't appear to fit the guidance above? Reach out to EHS and we'll be happy to assist you! Contact your Research Safety Specialist directly, or call EHS at 650-723-0448 and ask to speak to Lab Safety.

July: BioRAFT Update

Plan ahead for new rotation students or others who may join your lab at the start of the upcoming academic year! Onboard all new lab members; add new members and confirm current members in your BioRAFT list; update hazards and training requirements if not done in April; review your lab's [PPE assessment](#), [risk assessments](#) and [SOPs](#); introduce new lab members to the EH&S website.

Update BioRAFT members and hazard verification:

- **Update** lab members under the members tab and when finished click on confirm list button
- **Update** the job activities for each lab member under the manage job activities tab
- [Detailed instructions](#) may be found on page C-11

August: Group-level Onboarding Process: Plan & Update

Stanford's Chemical Hygiene Plan requires that all lab members be trained on the specific hazards that exist in their lab and the procedures, equipment, and resources available in their lab for working safety with these hazards. Use the [Lab-Specific Training Template](#) to review the training of each employee and document that they have been trained.

September: Quarterly Inspections Review & Critique

To store and use hazardous materials, Stanford has a storage permit through Santa Clara County. One requirement for maintaining the permit is to conduct quarterly or monthly inspections of all places chemicals are used or stored. Login to [BioRAFT](#), check past inspections, and close out any open findings. Review findings from self-inspections during group meetings and discuss with group members how to prevent similar findings in the future. Correct any deficiencies and document the corrective actions in BioRAFT. [Detailed instructions](#) may be found on page C-15.

October: Group-level Emergency Plans & Practice: Evacuation, Spill Response

Review [Emergency Procedures](#) for various emergency situations in your lab:

- [Earthquake](#)
- [Fire](#)
- [Hazardous material incident/suspicious odor](#)
- [Evacuation procedure](#)
- [Flooding and water damage](#)
- [Power outages](#)
- [Medical emergency](#)
- [Biological Exposure Incidents](#)
- Update the contents of your lab's [Life Safety Box](#)





November: Incident Reporting, Investigation & Corrective/Preventive Actions

Stanford is committed to keeping a safe environment for their employees, students and visitors.

After an incident occurs, it is to be reported by the employee or on behalf of the employee using the [Incident Reporting \(SU-17\)](#) form. The responsible supervisor is prompted to complete incident follow-up/analysis to take the necessary corrective measures towards addressing any associated safety issue. Once completed, the employee will receive an email containing the information from the follow-up report. EH&S may follow up with the person(s) involved. How to conduct a review of an incident:

- **Gather** all information - What were they doing? When/where did it happen? What PPE was used? What SOP was being followed?
- **Determine** the immediate cause - the event that directly led to the incident?
- **Think** about underlying causes - to understand how the system had a loss of control and to correct the issue. This step is not to assign blame.
- **Correct** any deficiencies - identify and implement corrective actions that could have prevented the incident.
- **Discuss** and share lessons learned at group meetings - goal of learning from the incident
- **Document** corrective actions - write down what you learned, what went wrong and what changes will be made.

EH&S conducts blame-free investigations with the goal of identifying root causes and preventing similar incidents in the future. Report all incidents, even those that seem minor, as well as near-miss incidents to help everyone be safer.

December: Shutdown/Startup; Lab & Room Specific Plans; Lab Continuity Plan

Setting up, moving or closing a lab requires special considerations. Review pages 22-23 for more information on [startup, moving and closing your lab](#). Consult the lab shutdown checklist for more guidance.

Training Focus

Quarter 1 Focus: Research Safety Foundations

Required Trainings for all University Employees*:

- EHS-3400 Ergonomics Computer Workstation*
- EHS-3600 Ergonomics Awareness*
- EHS-4200 General Safety, Injury Prevention (IIPP) and Emergency Preparedness*
- EHS-5400 Supervisor health & safety responsibilities
- EHS-1900 Chemical Safety for laboratories (Required for any lab working with chemicals)
- EHS-5200 Orientation for Lab Safety Coordinators (in person course provided by EH&S for new Lab Safety Coordinators)

Quarter 2 Focus: PPE & Hazard Controls

Group-Level Tier III

- Review your lab's **PPE Assessment**
- Make sure everyone in the lab has completed and signed the tier III **lab specific training checklist** and know where to find safety equipment including spill kits, fire extinguishers, eyewash and showers, first aid kits and the life safety box.
- Know where to find safety data sheets (SDS), stanford operating procedures (SOPs)
- Know the specific hazards that exist in the lab and which hazards are covered by SOPs
- Review the **Chemical Hygiene Plan**

Quarter 3 Focus: Specific Research Hazards (i.e., Compressed Gas, Cryogenics, Electrical, Ladders)

Required Trainings based upon working environment/job responsibilities:

- EHS-4800: Laboratory Ergonomics (Classroom course)
- EHS-5250: Radiation Safety Training
- EHS-2650: DOT: Excepted Quantities, EHS 2651 recertification every two years
- EHS-2700: DOT: Shipping Dangerous Biological Goods or Dry Ice; EHS-2701 recertification biennially)
- EHS-2125: Controlled Substances
- EHS-1600: Bloodborne pathogens; EHS-1601 recertification annually
- EHS-1400 Back Care/Safe Lifting and Carrying
- EHS-2200 Compressed Gas Safety
- EHS-2480 Cryogenic Liquids & Dry Ice Safety
- EHS-2800 Electrical safety awareness
- EHS-4300 Hazard Communication for non-lab workers
- EHS-4400 Haz Mat Response Cleanup Labs/Shops
- EHS-4810 Ladder Safety
- EHS-4820 Laser Safety Training (work with class 3 or class 4 lasers)
- EHS-4821 Laser Safety (work with class 3 or class 4 lasers recertification every three years)
- EHS-5275 Working Safely Near Radioactive Materials

Quarter 4 Focus: Resilient Research

Emergency Procedures

- EHS-3700 Fire Extinguisher Training (entire department can receive this)
- EHS-3825 Fire Extinguisher Use in Labs