

# Laboratory Self-Inspection Tool

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This Laboratory Self-Inspection Tool is meant to assist you with maintaining your lab space as a safe workspace. These are items that will be reviewed during your annual lab inspection. Please work with your lab members to create and keep a safe lab environment. Speak with your inspector or reach out to EHRS with your questions or safety concerns.

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## Administrative Requirements

Check that the following administrative tasks have been completed. These are compliance requirements. In most cases these can be completed by either the Lab Safety Coordinator or the PI. Some documents require the PI to certify them after they have been updated.

### Applicable to All Labs

- **Laboratory Safety Assurance & Chemical Hygiene Work Plan**
  - Log in to BioRAFT: <https://penn.bioraft.com/>
  - Scroll to the bottom of your lab profile summary page to where it says “View Laboratory Safety Assurance & Chemical Hygiene Work Plan”
  - Check to make sure that the date shown for “Laboratory Safety Assurance Last Certified by PI” is within the past year.
  - If this date or the “Hazards Last Certified by PI” date are not within the past year, the PI must follow these directions to update the documents in BioRAFT: <https://ehrs.upenn.edu/health-safety/lab-safety/laboratory-inspection-program/how-certify-lab-hazard-identification-survey>
- **Room signs**
  - Doors leading into the laboratory from the corridor must be posted with current information and correct after-hours contacts. Compliant lab room signs are provided to PSOM labs by the school and to other labs by EHRS.
    - PSOM room sign request form:
    - <https://www.med.upenn.edu/spo/signs/placards.html>
    - Other schools room sign request form: <https://ehrs.upenn.edu/health-safety/health-safety-forms/room-sign-request-form>
- **BioRAFT Lab Member List**
  - Check that your lab member list has been confirmed within the past year.
  - Log in to BioRAFT: <https://penn.bioraft.com/>
  - Click on the “Members” tab at the top of your lab’s profile page.
  - Check that the “Last Confirmed” date in the upper right-hand corner is within the past year. If the member list is correct, click the “confirm” button below the member list table.
  - If you need to update your lab members, instructions are available on the EHRS website at <https://ehrs.upenn.edu/health-safety/lab-safety/laboratory-inspection-program/how-add-lab-members-your-bioraft-profile>
- **Lab Locations (Spaces) in BioRAFT**
  - Log in to BioRAFT: <https://penn.bioraft.com/>
  - Check your assigned lab spaces by clicking on the “spaces” tab at the top of your lab’s profile page.
  - Use the webform on the EHRS website to request that spaces be added or removed to your lab’s BioRAFT profile: <https://ehrs.upenn.edu/health-safety/lab-safety/laboratory-inspection-program/request-changes-bioraft-lab-locations-spaces> (EHRS will verify your space assignments with the school before making any changes to your profile)

### Applicable to Labs who use Biological Materials

- **Biological Registration**
  - Log in to BioRAFT: <https://penn.bioraft.com/>

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- Look for the box that says “compliance summary” at the top of your lab profile summary page.
  - If your lab does not work with biological materials, you will see a grey dot next to the word “Biological”. Contact EHRS if this is incorrect.
  - If your lab does work with biological materials, you will see the status of your registration. A green check mark means that your registration has been approved by EHRS within the past year.
  - If you see a warning symbol, or if your work has changed since you last submitted your registration, click on the “Bio” tab at the top of your profile page to update your registration.
- Instructions for completing this process can be found on the EHRS website at: <https://ehrs.upenn.edu/sites/default/files/inline-files/BioTAB%20instructions.pdf>
- **rsNA registration (renew every 3 years)**, if applicable
  - See registration and amendment forms at <https://ehrs.upenn.edu/health-safety/biosafety/institutional-biosafety-committee-ibc/recombinant-synthetic-nucleic-acids>
- **Exposure Control Plan**, if applicable
  - This requirement applies to all faculty, students, and staff who work with bloodborne pathogens or human source material in a laboratory or clinical setting. More information about this requirement can be found on the EHRS website at <https://ehrs.upenn.edu/health-safety/biosafety/research-compliance/bloodborne-pathogens-policy>
  - Instructions for checking the status of your ECP can be found on the EHRS website at <https://ehrs.upenn.edu/health-safety/lab-safety/laboratory-inspection-program/how-check-status-your-exposure-control-plan>

## Applicable to Labs with Chemicals

- **ChemTracker Chemical Inventory**
  - Log in to BioRAFT (<https://penn.bioraft.com/>) and click on the “ChemTracker” tab at the top of your lab’s profile to view your chemical inventory.
  - All hazardous chemicals must be tracked in ChemTracker.
  - Detailed instructions for using ChemTracker can be found on the EHRS website at <https://ehrs.upenn.edu/health-safety/lab-safety/chemical-inventory-program/resources-chemtracker-users>
  - Contact the Chemical Inventory Team at [cheminv@ehrs.upenn.edu](mailto:cheminv@ehrs.upenn.edu) if you need assistance.
- **Check your inventory**
  - For instructions on how to fix common inventory errors, see the ChemTracker Help Documents and Tip Sheets on the EHRS website at <https://ehrs.upenn.edu/health-safety/lab-safety/chemical-inventory-program/resources-chemtracker-users>

## General Lab Maintenance and Behavior

Confirm:

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- Proper lab attire consisting of long-pants and closed-toed shoes (as well as lab coats, gloves, and safety glasses) is worn by all persons in the laboratory. The Principal Investigator must enforce this policy and document enforcement.
- Bench tops are free of clutter and well organized
- Eyewashes and emergency shower stations are accessible. Remove any clutter or stored items from these spaces.
- There is no storage within 18" of ceiling (for buildings with sprinklers)
- There are no fabric-upholstered or damaged chairs in the lab spaces. Ask your PI or Department to replace any fabric chairs with wipeable, non-porous chairs.
- There is no food or drink in any lab spaces. Remind lab staff not to consume or store food or drink in the lab.
- Eyewash stations are tested at least once a week (for eyewashes with plumbed drains). Use the spray to wash out the sink or other items and encourage other lab members to do that same. Flush-mounted wall units can be activated by opening the door. *Do not test shower units.*
- Electrical outlets within 5 feet of a water source have GFCI protection. (See [Electrical Safety Fact Sheet](#))
- Hot plates are unplugged when not in use. (See [Hot Plate Malfunctions and Misuse](#)).
- Refrigerators and all types of freezers are in good order, defrosted as needed, and have clean filters.
- Centrifuges are maintained; rotors are in good condition.
- Sharps and razor blades are secured if being reused (dispose of rusty blades).
- Power strips and extension cords are not daisy-chained, and extension cords are not used as a long-term solution. Ask your building administrator for alternative power supply options.
- All lab staff have clean, undamaged, and proper-fitting PPE (lab coat, safety glasses, gloves) and they are worn while in the lab.
- Ensure all lab staff have access to additional PPE for hazardous work (chemically-resistant gloves, cryogen-handling gloves, splash goggles, face shields, heat-resistant gloves, etc.)

## Cold Rooms

Confirm:

- Cold rooms are free of clutter and mold. Check cold rooms for mold monthly, wipe-off any growth with 70% ethanol, and report any ongoing issue to your Building Administrator.
- No food or drink is stored in the cold room.
- No gas cylinders, dry ice or hazardous chemicals are stored in the cold room.

## Equipment Corridors

- Keep equipment corridors free of clutter
- No hazardous chemical storage is permitted in equipment corridors except for closed flammables and corrosive cabinets.
- Keep a 44-inch-wide path open for egress

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## General chemical storage

Confirm:

- Flammable, toxic and oxidizing gases are listed in your ChemTracker chemical inventory.
- Chemicals are properly stored and segregated, such as acid and bases.
- Hazardous liquids are not stored above eye level.
- Bottles are not stacked and containers of liquid are stored upright.
- Damaged chemical containers/lids are disposed of and illegible or missing labels are replaced.
- Secondary/intermediate containers 1-gallon and larger are labeled with full chemical names and hazard statements. Non-hazardous intermediate containers 5-gallons and larger are labeled with the words "non-hazardous".
- Gas cylinders are well secured, either to the wall or by floor anchors.
- Spaces are labeled with "designated area" for use of ethidium bromide or other carcinogens, mutagens, or toxins unless the entire room has been labeled as a designated area on the door sign.

## Flammable-Liquids Storage Cabinets

- For information about Flammable Liquids Storage Cabinet specifications see <https://ehrs.upenn.edu/health-safety/lab-safety/lab-design-equipment/flammable-liquids-storage-cabinets-specification>
- All flammable liquids must be stored inside a flammable-liquids storage cabinet.
- Make sure that the door to cabinet can close and latch easily and securely. Request a work order if repairs are needed.
- Check for containers of expired or non-dated peroxide formers. Examples: diethyl ether, tetrahydrofuran, dioxane. More information about peroxide forming chemicals is available in the Chemical Hygiene Plan at <https://ehrs.upenn.edu/health-safety/lab-safety/chemical-hygiene-plan/standard-operating-procedures/sop-peroxide-formers>

## Fume Hoods

Confirm:

- Fume hoods are free of clutter and well organized; equipment does not block airflow or back baffle.
- The hood has an EHRS ID# sticker and green sticker indicating the maximum allowable sash height. (Contact EHRS if either of these is missing).
- The fume hood sashes are not broken and operate easily. Request a work order if repairs are needed.
- Alarm is not sounding and has not been deactivated/muted. Request a work order if repairs are needed. Do not use a hood that is in alarm or does not seem to be functioning properly.
- Hood has not been placed in "emergency/purge" mode. The hood is not designed to be used while in this mode. Contact EHRS if you have questions about this.

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- Hood sashes are closed when not in use.
- There are no flammable materials, large waste carboys, or excessive chemicals stored in the hood.

## Vacuum Pumps

- For general information about the safe use and maintenance of vacuum pumps see EHRS website (<https://ehrs.upenn.edu/health-safety/lab-safety/chemical-hygiene-plan/fact-sheets/fact-sheet-vacuum-pump-use-and>)
- For all systems involving potentially hazardous materials, vacuum exhaust for must be vented to a laboratory exhaust duct or fume hood. The exhaust ports of pumps stored in vacuum pump cabinets must be connected directly to the vent port inside the cabinet. The pump may not vent into the cabinet interior. Contact EHRS if you are unsure how to properly vent your vacuum pump.
- Ensure belt guards are in place for all belt-driven vacuum pumps.
- Check the oil level of oil pumps. Oil must not be too high or low. Change oil regularly.
- Oil pumps must be fitted with an oil-mist separator unless you have been advised by EHRS that this is not required for your pump.
- Utilize a cold trap to protect the vacuum pump from chemical liquids and vapors.

## Tissue Culture Rooms

- For general information about Biosafety Cabinets see EHRS website (<https://ehrs.upenn.edu/health-safety/biosafety/biosafety-cabinets>)
- Biosafety Cabinets must be certified annually (check sticker on cabinet)
- Keep Biosafety Cabinets clutter-free: only materials used during procedures should be stored in the cabinet. Keep front and rear grilles clear of materials at all times.
- A hydrophobic filter must be installed on the vacuum line before the vacuum turret.
- Use of continuous flame Bunsen burners inside the cabinet is prohibited (See: [Alternatives to Use of Flames inside a Biosafety Cabinet](#)).
- UV must not be used as primary decontamination method. Speak with a Biosafety Officer for more information about proper disinfectants.
- Soap and paper towels must be available at the sink in the tissue culture room and used by lab staff.

## Infectious Waste and Sharps

Confirm:

- Infectious waste is kept neat and orderly and removed from the lab space regularly.
- Razor blades, scalpel blades, needles, and syringes (with or without needles) are disposed of in an Infectious Waste Sharps Container.
- Sharps containers are only filled to 2/3 capacity, and lid is in place while in use.
- Non-sharps “Red-Bag” Waste is removed regularly and is not overfilled.

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- ❑ Red bag is supported by hard-sided waste bin or frame (not an open bag on the floor). Cardboard boxes cannot be used for infectious waste collection.
- ❑ No sharps containers, glass boxes or trash cans are lined with red bags.

## Satellite Waste Accumulation Area

If lab has any chemicals in use or in storage, confirm there is chemical waste collection and check the following:

- ❑ All chemical waste is tagged with yellow chemical waste tag and all sections of the tag are filled out.
- ❑ Contents of waste container listed on the tag as soon as anything is added to the container.
- ❑ All chemical waste containers are closed when not in use and are kept in secondary containment bins.
- ❑ Satellite waste accumulation area has signage. Signs available at <https://ehrs.upenn.edu/policies-resources/satellite-accumulation-area-sign>
- ❑ Gas-producing waste streams are collected in vented waste containers. (See Fact Sheet: Gas-Producing waste at <https://ehrs.upenn.edu/health-safety/lab-safety/chemical-hygiene-plan/fact-sheets/fact-sheet-gas-producing-waste>)
- ❑ Higher-hazard waste such as reactives, strong corrosives, and highly toxic chemicals should remain in the lab for no longer than 3 months. Use appropriately sized containers to collect the chemical waste.
- ❑ Waste is not collected in glass bottles.
- ❑ Broken-glass disposal boxes are used for non-hazardous, non-infectious sharps waste disposal.
  - Line box with heavy poly bags.
  - Do not overfill these boxes!
  - Do not put syringes, syringe barrels, razors, or blades in these boxes!

## Resources

Biological Safety Cabinets (BSC certification and repair, Vacuum system protection, use of open flames in BSCs, Use of UV lights in BSCs): <https://ehrs.upenn.edu/health-safety/biosafety/biosafety-cabinets>

Position paper on the use of UV lights in BSCs: <https://ehrs.upenn.edu/sites/default/files/inline-files/absauvlightpositionpaper-2.pdf>

Laboratory Inspection Program <https://ehrs.upenn.edu/health-safety/lab-safety/laboratory-inspection-program>

Chemical Inventory Program <https://ehrs.upenn.edu/health-safety/lab-safety/chemical-inventory-program>

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Chemical Hygiene Plan <https://ehrs.upenn.edu/policies-resources/chemical-hygiene-plan>

Chemical Waste <https://ehrs.upenn.edu/health-safety/regulated-waste/chemical-waste>