**Lab Management and Safety Resources**

This collection of checklists and templates is made to provide you with support for managing your research lab. The tasks are divided based on occurrence: once, yearly, bi-annually, monthly, weekly, and daily.

The flexible format should allow for easy additions and deletions. Please edit the documents to fit the needs for your lab. Tasks that are integral to the safety of your lab at the indicated frequency are double starred (**\*\***).

The links in this document should help you navigate through the [OESO website](https://www.safety.duke.edu/) and other resources provided by Duke.

***Once***

Lab members

Write up a [lab member information sheet](https://www.safety.duke.edu/sites/default/files/lab_member_checklist.docx) for each person who joins the lab and include a checklist for things that need to be taken care of when he/she joins and leaves the lab.

Ordering

Share an [orders](https://www.safety.duke.edu/sites/default/files/orders.xlsx) document (*e.g.* via [Box](https://box.duke.edu/)) where everyone can place requests and/or log their orders.

Keep a [list of vendors](https://www.safety.duke.edu/sites/default/files/vendors.xlsx) and sales reps.

Write a [checklist for receiving orders](https://www.safety.duke.edu/sites/default/files/orders_instructions.docx) and their storage.

Data Management

Structure shared files such that they can be accessed quickly (review [data management resources](https://dosi.duke.edu/advancing-scientific-integrity-services-and-training/accountability-research/data-management-plan) provided by Duke).

Encourage the lab to go digital with their notebooks via *e.g.*, the [Duke-supported LabArchives electronic research notebook](https://dosi.duke.edu/labarchives).

Inventories

Make an inventory of all available chemicals including a map of the lab (*e.g.*, through this [offline inventory example](https://www.safety.duke.edu/sites/default/files/inventory_chemical.xlsx), [Quartzy](https://www.quartzy.com/tour/inventory), or [LabArchives](https://www.labarchives.com/inventory/)) using the safety information from the [GHS tool](https://www.safety.duke.edu/sites/default/files/GHS_Lookup.xlsm). (You might be able to request an actual map of your lab from your department admin/facility staff.)

**\*\***Make a separate inventory of your Particularly Hazardous Chemicals (Actions A and B in the [GHS tool](https://www.safety.duke.edu/sites/default/files/GHS_Lookup.xlsm)) using your full chemical inventory.

Make an [inventory of all equipment](https://www.safety.duke.edu/sites/default/files/inventory_equipment.xlsx) including a map of the lab. Update upon purchase of new equipment and keep a log of all equipment maintenance and repairs.

Make a [freezer inventory](https://www.safety.duke.edu/sites/default/files/inventory_freezer.xlsx) (*e.g.*, for your -80°C freezers).

Space planning

Place soap and other cleaning supplies at every sink.

Place spills kits near the area where a spill is most likely to happen.

Place sharps containers near areas where they are likely to be used – *e.g.*, near surgery areas and/or gel cutting areas.

Place [clear signs](https://www.safety.duke.edu/sites/default/files/signs.docx) with expectations for each area to prevent frustration and clutter in places that need to stay unobstructed.

Label all drawers and cabinets for efficiency.

Label equipment/fume hoods with clear instructions on how to operate them.

***Annually***

Safety Documentation

**\*\***Keep your safety documentation visible and accessible to all lab members, including:

* + - [Lab-specific Chemical Hygiene Plan](https://www.safety.duke.edu/laboratory-safety/chemical-hygiene)
    - [Duke Safety Manuals](https://www.safety.duke.edu/safety-manuals)
    - [SOPs and Guidelines](https://www.safety.duke.edu/laboratory-safety/chemical-hygiene/chemical-sops)
    - [Animal protocols](https://www.safety.duke.edu/laboratory-safety/animal-research)
    - [Chemical Waste Policies](https://www.safety.duke.edu/environmental-programs/hazardous-waste/chemical-waste)
    - [Small](https://www.safety.duke.edu/sites/default/files/Waste%20labels_small_Avery5162.doc) and [Large](https://www.safety.duke.edu/sites/default/files/waste%20accumulation%20label_Avery5524.doc) Chemical Waste Labels (order stickers through [LSWMS](https://lsw.duhs.duke.edu/LabSafetyManagement))

**\*\***Update content of/signatures on the following safety documentation:

* [Lab-Specific Chemical Hygiene Plan](https://www.safety.duke.edu/laboratory-safety/chemical-hygiene/chemical-sops-and-sop-templates/chemical-sop-faqs) – Should be reviewed and re-signed by everyone in the lab at least every year OR when changes are made.
* [Chemical SOPs](https://www.safety.duke.edu/laboratory-safety/chemical-hygiene/chemical-sops) – Should be reviewed by all users of material covered in the SOP at least every year OR when changes are made.
* [Biosafety SOPs](https://www.safety.duke.edu/sites/default/files/CombinedABSL-2andBSL-2SOPTemplate.doc) – Should be reviewed and re-signed by the OESO Biological Safety Division and at least every **3 years** OR when changes are made. Users of the material covered in the SOP should review and sign the OESO-approved SOP once it is updated.
* [Animal use](https://www.safety.duke.edu/laboratory-safety/animal-research/use-hazardous-agents-animals) SOPs – Review and update upon protocol approval cycle (check with PI for the latest updated version).
  + - [Chemical hazard door sign](https://www.safety.duke.edu/sites/default/files/ChemicalHazardDoorSign.pdf) - Should be reviewed and re-signed by OESO at least every **3 years** OR when changes are made. Make users of covered chemicals aware of updated door signs.

**\*\***Post lab door signs:

* + General lab contact information sign([small](https://www.safety.duke.edu/sites/default/files/LabDoorSign6x4.docx) or [large](https://www.safety.duke.edu/sites/default/files/LabDoorSign8x5.docx)) on each door
  + [Biosafety Level 1 (BSL1) door sign](https://www.safety.duke.edu/sites/default/files/BSL1.docx) if appropriate
  + [Biosafety Level 2 (BSL2) door sign](https://www.safety.duke.edu/sites/default/files/BSL2.doc) if appropriate
  + [Chemical hazard door sign](https://www.safety.duke.edu/sites/default/files/ChemicalHazardDoorSign.pdf) (approved by OESO) if appropriate on animal rooms between dosing and cage change

**\*\***Post the [emergency response and incident reporting information](https://www.safety.duke.edu/emergency) in at least each room (*e.g.,* near the landline phone). (Request flipchart from [OESO](https://www.safety.duke.edu/contact-us)).

**\*\***Label all chemical containers using the [blank chemical label template](https://www.safety.duke.edu/sites/default/files/OESO%20Chemical%20Label%20Template.dotm), these [premade labels of common chemicals](https://www.safety.duke.edu/occupational-hygiene-safety/hazard-communication/hazard-communication-labels), or by clearly writing the chemical name, concentration (if not pure), and any applicable hazard warnings on the container.

Check equipment maintenance dates (freezer/fume hood/BSC etc.).

Post [contact information](https://www.safety.duke.edu/sites/default/files/contact_info.docx) of each person affiliated with the lab near the landline phone and keep a record of their emergency contacts.

Create presentations about safety to show at lab meeting when issues arise and reminders are needed.

General Safety

Check for potential safer alternative products and chemicals.

***Biannual (every semester)***

Lab Deep Cleaning

Provide a sign-up sheet with all tasks and expectations laid out.

Clean out the fridges and freezers.

Defrost -20°C freezers.

Check the state of all equipment (cords, cleanliness, etc.).

Remake counterbalance tubes for centrifuges using a scale.

Check expiration and contents of first aid and/or spill kits.

Check the condition of hazard labels on frequently used items such as wash bottles and equipment.

Chemical Hygiene

Run all CAS numbers from your inventory through the newest [GHS tool](https://www.safety.duke.edu/sites/default/files/GHS_Lookup.xlsm) available to check for safety updates.

**\*\***Use the orders documents to make sure your chemical inventory, SDS sheets, and SOP collection are all updated.

Lab members

Training

Check if anybody needs in-person (safety) training.

Think about a recurring safety or managerial issue to present at lab meeting.

Assign tasks to other lab members and rotate regularly:

* + - Responsibility for equipment (*e.g.*, centrifuge, sonicator, Nanodrop)
    - Responsibility for a shared area (*e.g.*, office, gel station, fume hood)
    - Dishes (create written guidelines)
    - Biohazard waste autoclaving (create written guidelines)
    - Media preparation (create written guidelines)
    - Recycling (create written guidelines)

***Monthly***

Budgeting

Check the amount spent per grant (using the [orders](https://www.safety.duke.edu/sites/default/files/orders.xlsx) document).

Connect with sales reps for upcoming purchases, check posted deals.

Chemical Hygiene

* Evaluate if waste pick-up needs to be requested (adjust the evaluation frequency to the amount of waste that is accumulated by the lab):

**\*\***Unused, unopened, or unknown chemicals should be requested for pick-up as soon as possible.

**\*\***Chemicals waste containers need to be removed within 1 year of the accumulation start date (open date).

General Safety

Check if any PPE needs to be cleaned/laundered/repaired/ordered.

***Weekly***

Ordering

Check general supplies inventory.

Order low priority items (New chemical? Add it to your inventory and review the [GHS tool](https://www.safety.duke.edu/sites/default/files/GHS_Lookup.xlsm) and the supplier’s SDS).

General Safety

**\*\***Flush eyewash stations.

Check if all biohazard waste is disposed of.

Check if dishes are piling up too much.

Check personal bench cleanliness.

***Daily***

Availability

Create a culture of resources: make sure everyone knows who they could contact anytime they have a question or safety concern, set clear boundaries for contact outside business hours.

Start of the day

* Check for clutter in the lab

General walkways should be unobstructed.

**\*\***Eyewash stations (surrounded by 6-inch free space).

**\*\***Emergency showers (surrounded by 16-inch free space).

Sprinklers (clearance from the bottom of the sprinkler heads should be at least 18 inches).

If present, the fire extinguishers and alarm pull-stations need to be accessible.

* Check cleanliness of shared areas:

Sink

Balances

Fume hoods

Gel station

Common bench

* Ordering

Order high priority items (New chemical? Add it to your inventory and review the [GHS tool](https://www.safety.duke.edu/sites/default/files/GHS_Lookup.xlsm) and the supplier’s SDS).

End of the day

* Make sure the last person who leaves checks the general state of the lab including:

**\*\***Chemicals should be properly stored and must be properly labeled.

**\*\***Chemical waste must be securely closed, properly labeled, and placed in secondary containment.

Gas valves/hotplates/water baths should generally be turned off unless indicated otherwise.

Freezers/fridges/incubators/fume hoods should be closed.