**Hood Lab Routine Maintenance**

Updated: 3 Sept. 2021

(SEC, LMC, and JMH)

Be a good lab member…remember that the lab is a shared environment and there should always be a clean area of bench space available for someone to do lab work. Any areas that you used during the day should be wiped down and cleaned with MilliQ as soon as you are done. This is not only for your own work cleanliness, but also so the area you used is ready for someone else as soon as you are done.

* Daily
  + Wipe down counters with MilliQ (before/after performing sample processing and analyses). If you spill any chemicals, treat with the spill kit if necessary, and wipe up immediately.

Different projects need to be mindful of their potential impact of on each other. Streams projects deal with nutrient values well above background levels for lakes projects. Wiping down counters with MilliQ when finished processing samples for any project helps prevent contamination.

* + Put away supplies in high-traffic areas (e.g., counters, lab cart)

As mentioned above, there should always be CLEAN counter space available in the lab for someone to work.

* + Acid wash any field/lab supplies after use—at the end of the day if possible, or as soon as time permits. If you’re unable to acid wash immediately, soak items in MilliQ until items can be acid washed.

\*\*Streams projects especially need to be sure to rinse and acid wash sample bottles, syringes, filtration gear, and field gear since letting items sit with stream water residue can permanently stain and items with tannins from the water causing contamination carryover in future use of the items.

* + For SRP/Particulate P analysis on spec: acid wash tubes and caps (scrub tubes with MilliQ and scrub brush, rinse tubes and caps 3x with MilliQ, 3x in acid bath, and do a final 3x rinse with MilliQ). Allow caps to dry face-down on paper towels and tubes to dry upside down in test tube racks. See SRP/particulate P SOPs for full acid washing instructions.
  + Chl-a analysis on Flora: rinse chl tubes and caps three times with MilliQ and allow to dry. Caps should dry face-down on paper towels, tubes should dry upside down in test tube racks. See chl-a SOP for full washing instructions.
  + After filtering: drain manifold, empty water from vacuum flask, disconnect all tubing lines, rinse with MilliQ, and allow to dry. Acid wash filter towers—filter towers should be scrubbed with a paper towel, scrub brush, and MilliQ before acid washing (sediment/algae is sticky!). Take care not to lose the black filter screen on the 25mm filter towers when acid washing and drying. Once filter towers and manifold are completely dry, you can re-assemble the filter towers and place them back on the manifold, and cover the filter towers with plastic bags.
  + Drying oven and muffle furnace: coordinate with others on use to ensure space for all samples and analyses-- remove samples and store in desiccator or lab drawer if others need the room
  + Balances: turn off balances after use. If you spill anything while weighing, clean off the balance by gently wiping the balance platform with MilliQ and a paper towel. Check the balance after use to make sure there isn’t any residual chemicals left behind from weighing, wipe up if needed.
  + If you notice we’re running low on chemicals (i.e., when there is only half a bottle left) or other general lab supplies (syringes, pipette tips, weigh boats, bottles, ect.)-- contact Blair and Jim to order more. Certain items, such as filters, should be ordered with specific project funds—in these cases you should order enough for your own needs.
  + Reagents: if you use up all or most of a reagent used by the general lab (e.g., reagents used in SRP/Particulate P analysis, 90% acetone for chl-a analysis), prepare more
  + Equipment/Supply organization: clean up and organize equipment and supplies from your project; store in drawers, bins, lockers, ect.
  + Balances: turn off all balances when not in use
  + MilliQ: keep an eye on any MilliQ warnings (replacement parts, cleaning cycles). If a warning appears and it’s easily fixable (e.g., run RO Cl2 cleaning cycle), feel free to address the problem. If it’s a bigger fix (replacement part) or you don’t feel comfortable addressing the warning, contact Blair.
  + Sink/MilliQ area: Do not place supplies or glassware in the sink. Keep this area clean, and clear of your supplies/equipment as much as possible—many other people in the Hood Lab/AEL use the MilliQ system. If you can’t acid wash items immediately, allow items to soak in a bin with MilliQ off to the side. Dry items upside down on paper towels or on drying racks. Once your washed items are dry, return them to their proper place.
  + Pipettes (with so many people using them, a check on their accuracy should be performed daily—using the precision balance, pipette a standard amount of MilliQ onto the balance and check the weight—1mL water from the pipette should equal 1g on the balance)
* Weekly
  + Take out trash/recycle boxes – Do this more frequently if needed.
  + Sweep lab – If you spill ANYTHING… treat with spill kit if needed and sweep immediately.
  + Replenish paper towels (as needed)
  + Acid wash any remaining supplies from the week (i.e., things only used by you—scint vials, sample bottles, low-use glassware, ect.)
  + Put away acid washed supplies that have finished drying (for glassware—cover with tin foil and store on plastic-covered shelves; for bottles/scint vials—cap tightly and put into cabinets/storage bins; for tubes—store in containers and caps in bags)
  + Sample organization: remove dried samples from drying oven and ashed samples from the muffle furnace; store in desiccator or lab drawer; organize samples in the freezer to make sure there’s space for others
  + Equipment/Supply organization: clean up and organize equipment and supplies from your project; store in drawers, bins, lockers, ect.
* Monthly
  + Acid bath (replace as needed— e.g., when volume is low or it starts to look yellow tinged indicating that too much water has evaporated and has made the bath more concentration than 10%. Continuing to wash when tinged yellow can damage more fragile pieces of labware (scintillation vial caps, tube caps and their liners etc.)
* Annually/Bi-annually
  + Wipe down all shelving/counters with MilliQ (to prevent P dust buildup)
  + MilliQ: change filters/run cleaning cycles (as needed—alarms on MilliQ will indicate maintenance requirements)
  + Chemical inventory
  + Glassware: make sure there are enough pieces for routine lab tasks and any experiments/intensive lab work. If glassware breaks, consider ordering more if we’re starting to run low on certain items.
  + Fridge/freezer: go through samples and inventory/organize or dispose of anything no longer needed (check with Jim before throwing anything out)
  + Sample organization: go through samples stored in lab and inventory/organize or dispose of anything no longer needed (check with Jim before throwing anything out)
  + Equipment/Supply organization: consider putting any items that haven’t been used in a while in long-term storage (i.e., find a spot in 513, the pool facility, storage shed, boat barn, ect.)
  + Equipment calibration:
    - Balances (by Mettler Toldeo (Melissa coordinates this for all balances in the AEL))
    - Flora (Keep record of secondary standard. If possible, yearly calibrate with liquid chlorophyll standard from Turner Designs)
    - CHN (preventative maintenance visit suggested prior to getting instrument back up and running)
    - Lachat (calibrate for each sample run and analyze external standards as primary standard checks)
    - Fluoroprobe (manufacturer calibration needed; coordinate with NOAA-GLERL)
    - Spectrophotometer (tag team calibration of the spec using same liquid chlorophyll standards from Turner when doing Flora’s calibration)