

Robertson Lab 2022 Site Specific Training

Safety

Safety is the business of everyone in the lab. Everyone who works in the lab (including students) must complete MSU safety training, including annual lab safety refresher sessions. Stacey VanderWulp (Lab Manager) or Andy Fogiel (KBS Safety Coordinator) can tell you which safety training sessions you are required to complete. Additional information is also available from MSU Environmental Health and Safety (EHS) at www.ehs.msu.edu.

Responsible Conduct

Appropriate conduct is an expectation of everyone who works at or visits KBS and is everyone's business. KBS has a code of conduct that you will have signed and committed to adhere to as a member of the KBS community. Keep in mind that this charges you to be conscious of the safety and well-being of others, and to intervene when a situation threatens a person's health or safety: speak up! You are also responsible for helping to keep KBS free of sexual and other forms of harassment. Again, speak up: it is your responsibility to intervene when you see signs of inappropriate conduct. Additionally, everyone in the lab is required to take MSU's Relationship Violence and Sexual Misconduct (RVSM) training with regular refreshers. Ask Stacey or Phil for details if you have not received notice from MSU or KBS administration. Additional information about RVSM training is available at www.oie.msu.edu. KBS Code of Conduct is at https://www.kbs.msu.edu/wp-content/uploads/2021/10/KBS_CoC_revision_13Oct2021_accessible.pdf

Emergency Contacts are posted on the outside of each lab door (Academic 330, 333 and 334), as well as on or near the doors to the LTER Field lab, LTER Storage/Shop building, and the LTER and GLBRC gas trailers.

MSU **Chemical Hygiene Plan** can be found online: http://www.ehs.msu.edu/chemical/programs_guidelines/chem_hygiene/chem_hygiene_plan/chp_full.pdf

A hard copy is also available in a binder in Academic 334.

Material Safety Data Sheets (**MSDS or SDS**) are available for all chemicals in the lab. Hard copies of sheets can be found in binders in the lab. Also, you can search online for an SDS. Go to <https://ehs.msu.edu/sds.html> and follow the instructions on that page.

MSU **Waste Disposal Guidance** can be found here: <https://ehs.msu.edu/waste/index.html>

A hard copy of that information is also available in a binder in Academic 334.

Standard Operating Procedures for common lab activities like dishwashing and acid-washing are posted in the lab. Training is required before using the acid bath.

Other laboratory procedures can be found online: <https://lter.kbs.msu.edu/protocols>

There are specific areas in the lab designated for different types of solid and liquid **chemical storage**. Please see Stacey or Cathy McMinn for more information and before purchasing new chemicals. Unlabeled solutions, gases and solids are a hazard. It is essential that every solution or sample that you prepare be marked with content, date, your name or initials, and **any applicable hazard warning**. Whenever a new chemical container enters the lab it must be dated, checked against our chemical inventory list, and if necessary, added to it.

Anyone working in the lab is required to have all skin covered below the waist, including closed-toed shoes. Use of lab coats is recommended. You are responsible for using **personal protective equipment** (goggles, gloves, etc.) where appropriate. These are available in the lab. For more information about types of safety equipment and when to use them, please see Stacey, Andy or Cathy.

There are **emergency eyewash** stations next to each of the sinks in the lab, as well as between the field lab sinks. There is an **emergency shower** located in the hallway just outside the lab.

Fume hoods can be found at the back of both 330 and 334. For help with operation of the hood and knowing when to use it, please see Stacey, Andy or Cathy.

Compressed gas cylinders pose a particular hazard, so there is an EHS training course required of anyone using them. Gas cylinders must be strapped/chained upright when in use, and when not strapped they must be capped with screw-on covers – even if you're moving the cylinder only a few feet.

Chemical Spill Kits can be found near the fume hoods in both Academic 330 and 334. There are also buckets to be used for disposing of broken glass. **Broken glass** should not be put into trash cans.

Chemicals, syringes, and needles must be disposed of properly. If you're not sure if something can be poured down the sink or put into the trash can, ask Stacey, Andy or Cathy. Waste containers and tags are available. **Needles and syringes** cannot be put into any trash can or dumpster. They must be disposed of in the red sharps containers found in the lab. **Hazardous waste**, including sharps, is collected in the lab, **tagged appropriately** and periodically picked-up by EHS personnel for disposal. Hazardous waste cannot be stored for more than 90 days.

Under no circumstances are consumables or cosmetics allowed in any part of the lab. Even empty containers, cups or wrappers must be kept out. Food and/or related trash found in trash cans could result in citations from EHS and Nuclear Regulatory Commission (NRC). There is a food-safe refrigerator in the 3rd floor mail/break room and a cart outside the lab for food and drink.

Security

Each person is given a unique key code allowing them access to only specific areas necessary for their work. You should never share your key code with anyone else.

All lab users are responsible for keeping the lab secure. Due to the presence of radioactive sealed sources in Academic 330 and 333, we are required to keep all lab doors closed whenever the lab is vacant. This means that if you are alone in the lab you must close the door when you leave, even in the middle of a normal work day, even if you're only leaving for a minute. You may leave the lab doors propped open when you are in the lab, as long as you pay attention to anyone entering the space. Also, be aware that there are video cameras in the lab.

Also because of radioisotopes, if you see anyone enter the lab that you don't recognize, you should introduce yourself and ask them their business and escort them out of the lab, if they're not associated with MSU or a lab project. Inspectors have been known to test access by simply walking into labs as unannounced strangers.

Security of field sites is also important. Be aware of your surroundings and on the lookout for anything or anyone that seems out of place. Be protective of our sites. We don't want our measurements of ecological phenomena next year to include the effects of your plot disturbance this year. Respect the trail systems and take trash etc. out of the field with you. Drive slowly even on main gravel roads in order to keep road dust out of the research plots as much as possible. Stop, or slow considerably, at intersections in the grass alleyways, especially when you can't see around the crop.

There is a **key box** in the lab with keys for areas where a key pad is not present. When you borrow a key, please be sure to put your name tag in its place. Return borrowed keys as soon as possible.

Space

Laboratory bench space is assigned by Stacey in consultation with Phil. Most bench space is for common use and usually occupied for the time it takes to perform a particular analysis or assay. Other bench space is assigned for longer periods to individual grads, postdocs, or visitors. If you need additional space for your activity, please ask before expanding. All bench space should be kept as clutter-free as possible.

Space in the lab is tight, and clutter becomes a safety hazard as bench tops fill. It is everyone's responsibility to keep glassware, chemicals, samples, equipment, etc. where they belong and out of common areas. Likewise, empty boxes, packing materials, etc. don't belong in the lab – take them downstairs to the shelves to be reused or to the recycling bins. As importantly, clutter invites dust, and dust from spilled samples and chemicals invites cross contamination. We analyze for trace concentrations of common elements – a small amount of a spilled reagent can seriously contaminate a balance or bench top – it is important that you **clean up all spills immediately and thoroughly**.

You should use supplied spray bottles of 70% ethanol to clean high-touch lab spaces, like counters, handles, doorknobs and light switches, at least daily. When using ethanol, the following PPE is required, lab coat, gloves and safety glasses/goggles.

Other

Sample preparation and analysis in our lab generates a lot of dirty **dishes**. It is important that all users be responsible for getting dishes washed as soon as possible after use. When dishes can't be washed immediately, then please put them into a tub labeled with your name. Don't add your dirty dishes to someone else's tub. If you are using acid-washed dishes,

you need to make sure those dishes are acid-washed and taken care of appropriately after your use. Put away dry dishes as soon as possible to free up space on the drying racks and prevent clean dishes from collecting dust.

Users should log off of **lab computers** when finished with them, making them available for other people.

When answering the **lab (or field lab) phone**, please identify the lab (“Robertson lab”) and yourself. If a call comes in for someone that is not available, please take a detailed message and get it to that person.

Employees of MSU may legally drive **lab vehicles** if you have a valid driver’s license, permission of your supervisor and have signed an Employee Driver Certification with KBS Administration. Priority for use of lab vehicles is given to core lab employees before graduate students and post-docs. Check with Stacey regarding availability. If you use a vehicle, please do not return it with the gas tank less than ¼ full. Stacey can explain how to get gas from the Dairy gas tanks and how to fill in the associated paperwork. You may not use any of the MSU vehicles for personal use. When finished using a lab vehicle, be sure to remove all your materials making it ready for the next user.

From time to time people from other labs in the building will ask to **borrow equipment and supplies**. If you see someone from another lab looking through our drawers, please remind them that borrowed items need to be checked out via the clipboard by the door and they should ask permission from Stacey or Cathy. Please be sure that borrowed equipment (soil cores, measuring tapes, etc.) is marked with the name of the lab.

Please inform Stacey or Cathy when you notice **supplies** running low or equipment in need of repair – either in person, via email or on the chalk board.

Questions? Please feel free to contact Stacey (616-446-6629), Andy (517-230-2002), Cathy (269-567-0287) or Phil (269-760-8364).

Thanks! Please keep in mind that all of the research conducted in the lab is done so with public, competitive funds and that it takes a substantial amount of teamwork to keep the quality high. If you’ve got questions, concerns, or suggestions about protocols or other aspects of this research, be sure to make them known.

I certify that the **Robertson Lab 2022 Site Specific Training** was reviewed and understood as required by MSU EHS.

Print Name

Signature and Date

