The University has about 1500 laboratories scattered across several campuses and off-site locations.

When a Principal Investigator is preparing to leave the University, the Laboratory Safety Unit has requested the PI and the department notify us. This is to ensure hazardous agents, non-fixed equipment and supplies will be removed from the space. Sometimes this does not happen.

Have you noted a lab in your area is no longer active? Has the door been closed for some time and the staff vanished? If yes, please notify the Laboratory Safety Unit so we can start the lab decommissioning process.

**ABANDONED LABS**

Personnel from various locations have called EH&S and Facilities to report sewer odors in their laboratory. Most of these odors are caused by dry traps in the plumbing drain lines.

Every plumbing fixture has a trap in its drain line. The trap provides a water barrier to prevent sewer gases and other foul smells from making their way up and out of the drain and into your lab. When the trap is filled with water, the seal formed by the water preventing these odors.

Traps dry out due to evaporation if the sink is not used periodically. During the winter, the water will evaporate faster due to low humidity conditions. The general rule is to pour about 250 ml of water down drains at least once a month to keep sufficient water in the trap. Don’t forget about the cup sinks, floor drains, fume hood sinks, and sinks that have been covered by equipment.

Drains that are never used are often over-looked as the source of the odor problem. These drains can be “treated” by pouring about 250 ml of non-toxic anti-freeze (propylene glycol) into the drain. This material does NOT evaporate and will eliminate the need to pour water down the drain on a monthly basis.

**ODORS**

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**Chematix:**

- User instructions for Chematix can be found at: [http://www.safety.rochester.edu/labsafety/chematix/instructions.html](http://www.safety.rochester.edu/labsafety/chematix/instructions.html)
- Your Chematix questions are important! Send them to: questions@safety.rochester.edu

**Lasers:**

- If you have not registered your research lasers, use this link to download the form: [http://www.safety.rochester.edu/labsafety/lasers/pdf/laser_registration.pdf](http://www.safety.rochester.edu/labsafety/lasers/pdf/laser_registration.pdf)
- Complete a form for each laser and send the form to EH&S.

Lab Safety Unit web page: [http://www.safety.rochester.edu/homepages/labsafefhome.html](http://www.safety.rochester.edu/homepages/labsafefhome.html)
Are laboratory accidents avoidable? What actions can be taken to prevent them from occurring? Several serious lab events have occurred at other colleges in the last few years that have heightened institutional concerns here. Multiple federal and independent groups have been studying these events and provide useful information online. Links you may find useful may include:

Berkeley Lab Lessons Learned Program at: [http://ehs.berkeley.edu/lessons-learned-uc-berkeley](http://ehs.berkeley.edu/lessons-learned-uc-berkeley)


Texas Tech University Safety@TTU: Lessons Learned at: [http://www.depts.ttu.edu/vpr/integrity/lessons-learned/index.php](http://www.depts.ttu.edu/vpr/integrity/lessons-learned/index.php)

Univ. of California IH&S Committee's Lessons Learned at: [http://ucih.ucdavis.edu/pages/lessons.cfm](http://ucih.ucdavis.edu/pages/lessons.cfm)

All incidents, including near misses, need to be reviewed to determine the direct, indirect, the root causes, and to identify the corrective measures necessary to prevent reoccurrence. The next edition of this newsletter (Spring 2016) will have an article on the laboratory incidents that occurred here at the University in 2015 and the actions needed to prevent them in the future.

### Laboratory Incidents

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OSHA requires Bloodborne Pathogen training be completed every year. Since BBP training is covered under lab safety training, you can avoid possible OSHA violations by completing the lab safety training.

If you have any further questions, please call the IBC Program Coordinator at 5-2402.

### Anesthetic Gas Leaks

Leaks from gas anesthesia equipment used in animal surgeries can result in over-exposures to lab personnel. The exposures usually come from leaky connections. Use this simple method to determine if your equipment is leaking: Using a soap solution in a spray bottle, turn on the oxygen line for the gas anesthesia equipment and spray all of the connections. A leak will generate additional bubbles. Replace those connections that leak and recheck. DONE!

Don’t forget that a significant quantity of anesthetic gas is released from open induction chambers and the animals. These need to be exhausted or contained in an F-Air canister.
Do you periodically reevaluate your workplace to verify appropriate controls are in place for all hazards present and implemented the appropriate controls? Re-evaluations are important to do after an incident or a near miss. Laboratory workers are potentially exposed to chemical/drug agents, biological agents, physical hazards, radioactive isotopes and radiation generating devices, and musculoskeletal stresses. For years, OSHA has mandated the use of the Hierarchy of Controls to control hazards (see https://www.osha.gov/Publications/laboratory/OSHA3404laboratory-safety-guidance.pdf).

OSHA's Hierarchy of Controls strategies are based on the premise that the best way to control a hazard is to systematically remove it from the workplace, rather than workers attempting to reduce their exposure. The Principal Investigator and EH&S have a duty to identify, evaluate and reduce potential hazards. The types of measures used to protect laboratory workers, from the most effective to least effective, are:

- engineering controls;
- administrative controls;
- work practices; and
- personal protective equipment (PPE)

Most employers use a combination of these controls. Employers must evaluate their particular workplace to develop a plan for protecting their workers that may combine both immediate actions and longer term solutions. Here at the University, this means that both the Principal Investigator and EH&S have a duty to identify, evaluate, and reduce all potential hazards. A description of each type of control for laboratories follows.

**Engineering controls:**
These controls are preferred over all others because they make permanent changes to the work environment, reduce potential exposure to hazards, and does not rely on worker behavior. Engineering controls can be the most cost-effective solutions. Examples include using safety needles/sharps, enclosing analytical equipment and using chemical fume hoods, slot hoods, and biological safety cabinets (BSCs).

**Administrative controls/Workplace Practices:**
These controls minimize exposures by actions that include modifying work schedules and tasks. Examples include prohibiting mouth pipetting, implementing chemical substitution where feasible, substituting plastic for glass when possible, purchasing/using premixed solutions and kits, and selecting a less hazardous chemical.

**Personal Protective Equipment (PPE):**
While engineering and administrative controls and proper work practices are more effective in minimizing exposure to workplace hazards, the use of PPE is another means of protection. PPE can prevent an exposure when other control measure fails. Examples of PPE include respirators, lab coats, face shields, goggles and disposable gloves. In addition, PPE must be:

- Selected based upon the hazard to the worker;
- Properly fitted and in some cases periodically refitted (e.g., respirators);
- Conscientiously and properly worn;
- Regularly maintained and replaced in accord with the manufacturer’s specifications;
- Properly removed and disposed of to avoid contamination of self, others or the environment; and
- If reusable, properly removed, cleaned, disinfected and stored for future use.

As always, please contact the Laboratory Safety Unit if you have any questions regarding the control of hazards in your laboratory.