

A Safe Lab is an Efficient Lab

OSU Lab Efficiency Questionnaire

Laboratory space is one of the biggest energy users on campus. A little planning and some simple modifications can make a significant difference in the energy costs associated with your lab. Often a safely run lab and an efficient lab go hand in hand. For example, proper use of your fume hood is not only important for safe experimentation, but it reduces energy costs at the same time. Take a little time to go through this checklist and think about each item carefully. Afterwards, take the time to implement the changes that apply to your lab.



1. Do you keep your lab door shut?
Laboratory doors are often fire doors and should remain shut for safety reasons.
2. Which pieces of equipment within your lab are “on” or plugged in 24/7?
3. Look at each piece of equipment. Can any of them be turned off without damage or loss of calibration?
4. Can timers be used to start/stop equipment that does not need to continuously run? *Good examples include a water bath or heater.*
5. Can you share water baths or other equipment with other labs?
6. Do you have equipment that can be turned off at night? *Consider using a power strip to make it easy to turn off multiple items or hard-to-reach items at once.*
7. Have you been shown the correct way to operate your specific model of fume hood?
8. Is the annually reviewed safe operating position clearly marked on your fume hood? *If not, contact Environmental Health and Safety.*
9. Are chemicals and/or objects stored in your fume hood?
10. Do you organize samples in freezers or incubators so the ones you use most are easy to grab and clearly labeled so you can pack and unpack quickly?
11. Do you know the defrost schedule for your ultra-low freezers?
12. Can you chill rotors in a cooler rather than using the ultra-centrifuge if you don’t always need them to be cool?
13. Do you have a defined process or checklist for shutting down your lab at the end of the day?



Email: energy@okstate.edu

OSU Energy Management Program

Web: <https://energy.okstate.edu>



Resources

OKLAHOMA STATE UNIVERSITY RESOURCES

Laboratory safety manual (2013). In *Oklahoma State University: Environmental Health & Safety Online Manuals*. Retrieved from <http://ehs.okstate.edu/hazmat/Labman.htm>

OSU energy guidelines (August 2007). *Oklahoma State University: Energy Management Program*. Retrieved from <http://energy.okstate.edu/energy-guidelines>

OSU energy policy (August 2007). *Oklahoma State University: Energy Management Program*. Retrieved from <http://energy.okstate.edu/energy-policy>

Oklahoma State University: Environmental Health and Safety. Retrieved from <http://ehs.okstate.edu/>

OTHER UNIVERSITY RESOURCES

Chemical fume hoods. In *Purdue University: Radiological and Environmental Management*. Retrieved from <https://www.purdue.edu/ehps/rem/ih/cfh.htm>

Dille, Sara. (2011). Fume hood efficiency and Labs21 pilot internship final report. In *Indiana University Bloomington*. Retrieved October 6, 2015 from http://sustain.indiana.edu/programs/internship-program-in-sustainability/docs/final-reports/AY11-12/Sara-Dille_11-12.pdf

Fume hoods. In *University of California, Berkeley: Sustainability & Energy*. Retrieved from <http://sustainability.berkeley.edu/fume-hoods>

Fume hoods and energy FAQs. In *The University of British Columbia: UBC Sustainability*. Retrieved from <https://sustain.ubc.ca/campus-initiatives/green-research/shut-sash/shut-sash-faqs>

Fume hood management. In *Montana State University*. Retrieved from <http://www.montana.edu/us/fs/energy/fumehoods.php>

Goad, Grant. (2013). Fume hoods and energy savings: shut the sash! In *BioSurplus*. Retrieved October 6, 2015 from <http://www.biosurplus.com/blog/fume-hoods-and-energy-savings-shut-the-sash/>

Online training self-study unit: chemical fume hoods. (2011). In *University of North Carolina: Environmental Health and Safety*. Retrieved October 6, 2015 from http://ehs.unc.edu/training/self_study/fume_hood/container.php?page=2

INDUSTRY AND GOVERNMENT RESOURCES

A guide to laboratory fume hoods. In *EscoGlobal*. Retrieved from <http://www.escoglobal.com/resources/pdf/guide-fumehoods.pdf>

Commonwealth Scientific and Industrial Research Organization (CSIRO). (2014, September 14). *Shut the sash*. [Video file]. Retrieved October 6, 2015 from <https://www.youtube.com/watch?v=6LNmKhQhgEw>

Labconco Corporation. (2009, December 18). *Labconco fume hood airflow & operation*. [Video file]. Retrieved October 6, 2015 from <https://www.youtube.com/watch?v=q2Pp3wge2j8>

Mills, Evan. (April 2006). Energy use and savings potential for laboratory fume hoods. In *Berkeley Lab*. Retrieved October 6, 2015 from http://evanmills.lbl.gov/pubs/pdf/fh_energy_full_report.pdf

Mills, Evan. (April 2006). Laboratory fume hood energy model. In *Berkeley Lab*. Retrieved from <http://fumehoodcalculator.lbl.gov/index.php>

Have questions? Contact your Energy Manager at energy@okstate.edu.