Safe Use of Fume Hoods

Fume hoods are one of the most effective ways of protecting researchers from air contaminants associated with irritating and/or hazardous chemicals. However, it is the responsibility of each researcher to engage in safe work practices while working in fume hoods to provide adequate protection for both themselves and others. The following guidelines should be followed at all times when using chemical fume hoods:

- Conduct all operations that generate irritating or hazardous air contaminants inside the fume hood. Substitute toxic chemicals with less hazardous materials whenever possible.
- Keep all apparatus and chemicals at least 6 inches back from the face of the hood. Some labs run a strip of masking tape 6 inches back along the front face of the fume hood to denote a “Safe Work Zone.”
- Keep the hood sash closed as much as possible when working in the fume hood. Hoods with multiple glass sliding panels should be aligned in such a way to provide a barrier between the chemicals and the researcher.
- Do not store chemicals or apparatus in the hood. Blocked vents can lower the face velocity of the hood.
- Do not remove the hood sash or panels. Modifications can directly affect fume hood efficiency.
- Do not use the hood as a waste disposal method (e.g. volatilize chemicals).
- Keep the slots in the hood baffle free of obstruction by apparatus or containers.
- Use equipment with legs to raise it off the work surface and allow even airflow under and around the equipment.
- Never use electrical outlets inside the fume hood. All equipment cords should be run to outlets outside of the hood.
- Minimize sources of turbulence at the hood face (e.g. foot traffic, equipment, fans, moving arms in and out).
- Keep laboratory doors closed whenever possible.
- Never cut into a preexisting fume hood to add additional ducts. Adding additional ducts can reduce capture efficiency and create potentially dangerous situations.
- Be aware that fume hoods may not be able to adequately protect workers from chemicals with low exposure limits (part per billion ranges). In such cases, additional control measures may need to be implemented.

Though proper use of fume hoods is of the upmost importance, the time spent away from hoods can also be quite expensive in terms of energy expenditures. If the fume hood sash was left open and running for 24 hours a day for an entire year, a single hood could use up to 3.5 times the energy of a house. The prolonged use of electricity to run the hoods coupled with the drawing
out of warmed air in the winter and cooled air in the summer costs thousands of dollars per year to the University. Therefore when researchers are not working directly in the fume hood, the hoods should be turned off (if possible) or the sash should be closed completely. Shutting the sash when not in use has the following benefits:

- Reduces the total energy consumption of entire buildings, resulting in significant decreases in CO₂ emissions from power plants.
- Saves anywhere from hundreds to thousands of dollars per year for a single hood. Even constant volume hoods draw less air when closed.
- There is no impact on lab operations other than increasing the overall safety of the lab.

Fume hoods at the University of Connecticut are tested once per year. Ideally, all hoods should be running between 80-120 feet/minute and if so, should contain a green sticker. Fume hoods that have yellow or red stickers are running either too high or too low and should be reported either to the appropriate building manager, [see Fume hood-Building Manager List](#) or directly to Facilities & Operations at (860) 486-3113. When used and managed properly, fume hoods should continue to provide a valuable means of protection for researchers from hazardous chemicals. In addition, shutting the fume hood sash when not in use can reduce greenhouse gas emissions and save thousands of dollars in energy costs to the University.