



Lab Safety!

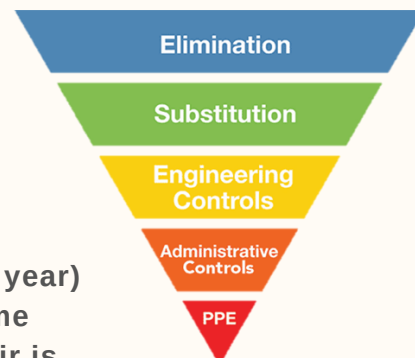
July/August 2022 Newsletter

Engineering Control- Fume Hoods

Engineering controls, such as fume hoods, biosafety cabinets, glove boxes, etc., are among the first lines of defense when it comes to keeping you safe in the lab (after elimination and substitution).

Fume hoods are tested at least annually (TWU aims for twice a year) to ensure that they are working properly. Depending on the fume hood system the building has, the face velocity (how fast the air is moving) needs to be anywhere from 80-100 cfm.

That being said, even a properly working fume hood can fail to be protective if it is not used correctly! Avoid these common mistakes when it comes to fume hoods.



1. Raising the sash too high

- When using a fume hood, the sash should be pulled down as low as you can safely work, in front of the user's face to protect the breathing zone. The standard sash opening height is 18 inches from the work surface. The only time the sash should exceed 18 inches is during the set-up of equipment. When not in use, the sash should *always* be kept closed.

2. Not maintaining the correct distance from the hood

- When working in the hood, chemicals should be kept at least 6 inches back from the face of the hood to ensure that vapors are caught efficiently. Also, the user should stand a few inches back from the hood (i.e. not put their torso directly against the hood). Standing too close to the hood can create "eddies" (reverse currents of air), pulling vapors out of the hood.

3. Blocking airflow in the hood

- To prevent blocking airflow in the hood, place containers and equipment toward the sides of the hood to prevent blocking exhaust slots. Also, keep objects away from the return ducts and baffles.

4. Storing chemicals in the hood

- Chemicals should not be stored in a hood long term (this also applies to waste!). Storing chemicals there blocks airflow. Additionally, certain chemicals, like flammables, will not be offered protection in a fire the way that a flammable storage cabinet would. Avoid this expensive misuse of equipment.

5. Not using a fume hood when one is needed

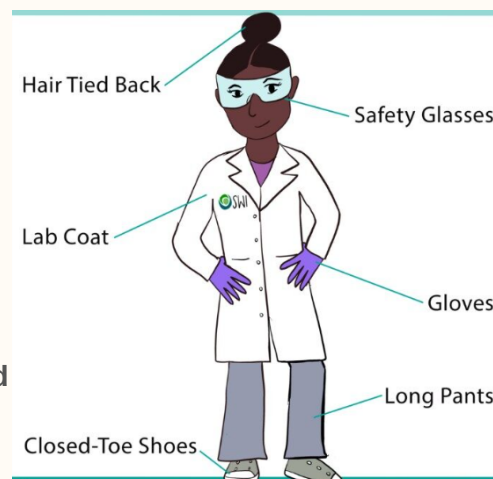
- ALL particularly hazardous substances (carcinogens, reproductive toxins, acutely toxic chemicals, etc.) must be worked with inside a fume hood (or glove box). Depending on the chemical and its quantity, certain other chemicals *might* be able to be worked with on a benchtop, but you should use a hood whenever possible.

You can watch an informative video on proper fume hood use by clicking "Watch Video".

[WATCH VIDEO](#)

Personal Protective Equipment (PPE)

With the arrival of summer and blisteringly hot Texas weather, people are understandably dressing for warmer temperatures. While personal protective equipment (PPE) includes all clothing and work accessories designed to protect employees from workplace hazards, personal protection starts with personal clothing choices as well. While not considered PPE, personal clothing offers a measure of protection against chemical splash and other hazards.



For example, long pants or long (ankle length) skirts, and closed-toe shoes are required when working in the lab. These protect against splashes and cover areas that a lab coat does not. Additionally, shirts that cover the entire torso should be worn beneath lab coats, to provide an extra layer of protection against this vulnerable area. If you wish to dress for the warm weather (i.e. shorts and flip-flops) that is OK- as long as it is NOT worn into the lab. You can bring an extra pair of closed-toed shoes to change into and some scrub bottoms or sweatpants which can be slid over shorts.

While not PPE exactly, you also need to make sure that long, dangly things are either not worn or are secure. Long hair should be tied back and dangly jewelry should be removed and stored away. Headcoverings should be secured; certain tasks may require disposable head coverings.

Lab coats are one of the first things people think about when it comes to PPE, and for good reason. These protect against chemical and biological hazards. Make sure to wear and fully button up your lab coat whenever you are working with these hazards.

Gloves provide protection for your hands, but care should be taken when selecting the glove you will use. While standard disposable nitrile gloves work well for most lab activities, if you will be needing to submerge your hands for a significant period of time or are working with severely toxic or corrosive chemicals, you may need a more durable glove. Check the chemical's SDS (section 8 is for exposure controls/PPE) for information on glove compatibility. If you can't find satisfactory information there, you can look for glove compatibility charts that detail information. Similarly, nitrile gloves would not be suitable for physical hazards, such as heat or cold resistance required when working with autoclaves or liquid nitrogen, respectively.

Protecting your face and eyes is arguably even more important than protecting your hands. Chemical splash goggles work well for protection against chemical splashes, while goggles and safety glasses with side shields work well for impact protection. Face shields provide protection from impact and some splashes. If you are working with UV or lasers, you may need special eye protection for those devices. If you aren't sure what eye protection is suitable, consult your PI or EH&S!

One last thing- one item of PPE that you should NOT need in a lab is a respirator. If there are respiratory hazards, the work should be carried out in a fume hood. Respirator use requires enrollment in the Respiratory Protection program, which includes a medical evaluation and fit testing of the respirator. If you feel like the work you are doing requires a respirator, contact EH&S for a consultation.

Pioneers Recognized For Safety Excellence!

If you've had the pleasure of meeting Dr. Adalvan Martins, you undoubtedly noticed his helpful, radiant energy right away! Adalvan received his Master's in Agricultural Engineering at the Federal



University of Viçosa & his Ph.D. in Plant Science at the Federal University of Lavras, both in Brazil. Fortune smiled on TWU when he joined Biology as the Laboratory Services Supervisor in Jan of 2022. His passion for helping others is reflected in the hard work to keep Pioneers safe in the lab. Just a few of his many improvements include the creation of centralized bulletin boards for safety information, testing peroxide forming chemicals for PIs and streamlining lab safety training verification. In his spare time he enjoys hiking, cooking & spending time with his partner & friends. Thank you, Adalvan!



Is there someone at TWU you feel should be recognized for their commitment to safety? Complete this form!

Pioneer Prepared!



If there is ever an active assailant, do you know how to respond?

While no one can truly prepare for something like that, there are steps you can take just in case.

Run, Hide, Fight is the active assailant response and a Pioneer Alert would go out with those instructions. What it means is:

- If you can, run! It's the best option.
- If you can't run, then hide; silence your cell phone and lock or block doors.
- If you can't run or hide, be prepared to fight back.

There is a training on Bridge that covers this in more detail, including how to spot and report suspicious behavior, how to respond to police in an active assailant incident, etc.

If you still have questions, contact EH&S!

Safety Story

Nearly everyone has heard the tragic story of Sheri Sangji, the UCLA student who died from burns sustained in a lab accident involving an air-reactive chemical in '09. Sheri was not wearing a flame-resistant (FR) lab coat.

What you may not know is that a similar incident occurred at the University of Utah in '18. The researcher sustained burns to their hands, but not to their torso, thanks to an FR lab coat. The incident could have been significantly worse without proper PPE.



[READ MORE](#)

Event Reminders

- EH&S Snacks & Conversation: Come by to chat about your safety questions!
 - SRC 204M
 - Thursday, September 15th
 - 1:30 - 2:30 pm

Who's that from EH&S?



Rockie Young, an Environmental Health & Safety Specialist, joined TWU in 2013. He served in the Army for 31 years. He's primarily responsible for fire safety. You'll see him out on campus ensuring our fire alarms, extinguishers, emergency lights, etc. all work properly. His approach to safety is paying attention to the details and not taking safety for granted or getting complacent. Often it's little, overlooked things that can result in the most harm. In his free time, Rockie loves to spend time relaxing and traveling!