Electrical Safety in the Laboratory

The typical laboratory contains a wide variety of electrically powered equipment including stirrers, shakers, pumps, hot plates, heaters, power supplies, ovens, and electrophoresis equipment. These and all electrical devices used in the lab setting present a potential danger of injury due to electric shock, fires due to poorly installed or maintained systems and fires due to sparks serving as an ignition source for flammable or combustible materials. Lab workers can protect themselves from the hazards of electricity by following some basic guidelines. The guidelines include maintaining awareness of the condition of lab equipment, the proper use of lab equipment and safe work practices.

Be Prepared
- Learn the location of your electrical panels and shut-off switches so you can quickly disconnect power in the event of an emergency. Be sure to always leave at least a 3-foot clearance around electrical panels for ready access.
- Plan ahead for what steps will be taken in the event of a power loss. Think about potential vapor/gas release from vapor-generating processes or chemical fume hoods if power is lost.
- Conduct a periodic inspection of laboratory electrical equipment to be sure it is in good condition. Remove equipment from service if in poor condition and replace or have it repaired by a qualified repair person.

Outlet Receptacles
- Electrical outlets should have a grounding connection and accept three-prong plugs. Multiple plug outlet adapters are not allowed.

Power Cords, Power Supplies
- Inspect power cords to be sure they are not frayed or have exposed wiring.
- Carefully place power cords so they don’t come in contact with water or chemicals. Contact with water is a shock hazard. Corrosives and solvents can degrade the cord insulation.
- Do not allow cords to dangle from counters or hoods in such a manner that equipment could be unplugged, fall or cords could be tripped over.
- Do not allow cords to contact hot surfaces to prevent melting insulation.
- Do not lift a piece of electrical equipment by the cord or pull the cord to disconnect from the outlet to prevent damage.
- Portable power supplies are commonly used in the lab. These devices are extremely high electrical energy sources and must be used carefully. Never attach an exposed connector such as an alligator clip to a power supply.
- Power cords must have grounding plugs (3 prong) and be properly insulated.

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Safety Specialist Passes ASP Exam

Kelsey Contreras recently passed the Associate Safety Professional (ASP) exam. This is a credential offered by the Board of Certified Safety Professionals. ASPs are persons who perform at least 50% of professional level safety duties including making worksite assessments to determine risks, potential hazards and controls, evaluating risks and hazard control measures, investigating incidents, maintaining and evaluating incident and loss records and preparing emergency response plans, among other various duties. Congratulations Kelsey on this accomplishment!

New Administrative Assistant Hired

Susan Allert started her journey with EH&S on August 16, 2021 as Administrative Assistant II. She has 30 years of experience providing administrative support. Her experience includes executive administrative support and Human Resources support. Susan is originally from Chicago, Illinois and relocated to Texas fifteen years ago. She worked as an administrative assistant for UTA’s Student Activities department before joining EH&S. She has already proven to be a valuable asset to our department.

Electrical Safety in the Laboratory

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- Extension cords are not allowed in the laboratory for permanent use. The only exception is electrical power surge protectors (UL listed).

Circuit Protection

- No more than two high current draw devices such as ovens and centrifuges should be plugged into the same outlet to prevent an overloaded circuit. Overloading can lead to overheated wires and arcing. This can cause electrical shock injury and fire.
- Fuses and circuit breakers prevent over-heating of wires and other electrical components. This overload protection is useful for equipment that may be left on for a long time such as stirrers, drying ovens, vacuum pumps, Variacs, etc.
- Ground-fault circuit interrupters, or GFCIs, disconnect current if a ground-fault is detected and protect the user from electric shock. GFCI outlets or portable GFCIs are used near sinks and potentially wet locations. Keep electrical equipment (and yourself while you are using electrical equipment) away from water/chemical or their spills unless you are sure the equipment is rated for this type of use.

Electricity and Flammable Materials

- Keep flammable materials away from electrical equipment. The equipment may serve as a source of ignition for flammable or explosive vapors.
- Receptacles providing power for equipment used inside a fume hood should be located outside the hood.
- Make sure that equipment used where flammable vapors may be present is specially rated to not produce sparks. Many household appliances such as hot plates, vacuum cleaners, and drills don’t meet this requirement and should be used under very controlled conditions.
- If refrigeration or freezing is needed, flammable materials should only be stored in explosion proof or flammable rated refrigerators. These do not contain any spark sources such as lights and switches.
- Do not plug heating mantles directly into a 110-volt outlet as they can overheat, leading to fire hazard. They need a variable autotransformer to control the input voltage.
- Be aware that if drying ovens are used to dry organic materials, vapors may accumulate inside the oven and/or escape into the lab atmosphere. Take care to prevent developing explosive mixtures in air by not drying organic materials that can create these conditions.

General Electrical Safety

- Avoid contact with energized electrical circuits.
- Only qualified electrical workers may install, service or repair electrical equipment.

Learn the Sounds of Fire Safety

Is there a beep or a chirp coming out of your smoke or carbon monoxide alarm? What does it all mean? Knowing the difference can save you, your home, and your family! Make sure everyone in the home understands the sounds of the smoke and carbon monoxide alarms and knows how to respond. Learn the sounds of your smoke and carbon monoxide alarms by checking the user guide or search the brand and model online.

What is your alarm telling you?

SMOKE ALARMS
• A continued set of three loud beeps—beep, beep, beep—means smoke or fire. Get out, call 9-1-1, and stay out.
• A single “chirp” every 30 or 60 seconds means the battery is low and must be changed.
• All smoke alarms must be replaced after 10 years.
• Chirping that continues after the battery has been replaced means the alarm is at the end of its life and the unit must be replaced.

CARBON MONOXIDE (CO) ALARMS
• A continuous set of four loud beeps—beep, beep, beep, beep—means carbon monoxide is present in your home. Go outside, call 9-1-1 and stay out.
• A single chirp every 30 or 60 seconds means the battery is low and must be replaced.
• CO alarms also have “end of life” sounds that vary by manufacturer. This means it’s time to get a new CO alarm.
• Chirping that continues after the battery has been replaced means the alarm is at the end of its life and the unit must be replaced.

Make sure your smoke and CO alarms meet the needs of everyone in your home, including those with sensory or physical disabilities.

Some tips:
✓ Install a bedside alert device that responds to the sound of the smoke and CO alarms. Use of a low frequency alarm can also wake a sleeping person with mild to severe hearing loss.
✓ Sleep with your mobility device, glasses, and phone close to your bed.
✓ Keep pathways like hallways lit with night lights and free from clutter to make sure everyone can get out safely.

Hear a Beep, Get On Your Feet!
Get out and stay out! Call 9-1-1 from outside.

Hear a Chirp, Make a Change!
A chirping alarm needs attention. Replace the batteries or the entire unit if it’s over 10 years old. If you don’t remember how old the unit is, replace it!

FIRE PREVENTION WEEK™

For fire safety tips, visit firepreventionweek.org and sparky.org
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Find Us on Facebook: UT Arlington Environmental Health & Safety Office
Special Programs Coordinator Retires

Debbie Kirkley retired from UTA on July 31, 2021 after 20 years of service. Debbie started with EH&S as a receptionist and retired as Coordinator I for Special Programs. She will spend her retirement days babysitting her brand new grandson, Dean. We will miss Debbie and wish her the best in retirement.

EH&S employees participate in National Night Out (NNO) on October 5, 2021. This event includes free food, prizes, activities, and demonstrations related to public safety. A large number of community partners attend and promote various aspects of public safety. EH&S participates in NNO every year with activities including the very popular fire extinguisher training and distributing literature and freebies promoting our services.
Environmental Health and Safety department staff members are always available to answer questions about potential laboratory and fire safety hazards.

**EH&S TRAINING COURSES**

Online safety training is located on the EH&S training management website: [https://uta-ehs.org](https://uta-ehs.org)

- Bloodborne Pathogens for Laboratory Research Personnel
- Bloodborne Pathogens (Non-Research)
- BioSafety Level 2
- On-Site Biohazardous Waste Management
- Vaccinia Virus
- Laser Safety
- Radiation Awareness
- Radiation Producing Machine
- Hazard Communication & Waste Mgmt- Academic
- Hazard Communication & Waste Mgmt- Non-Academic
- Fire Alarm Device
- Back Injury Prevention
- Confined Space Entry Awareness
- Hand & Power Tool Safety
- Hearing Conservation
- Lockout/Tagout
- Respiratory Protection
- Class C Underground Storage Tank
- Defensive Driving Awareness
- 12 & 15 Passenger Van
- Powered Industrial Truck (Forklift)
- Hot Work Safety

Call us at 817-272-2185 to schedule specific trainings not available online:

- Radioactive Materials
- Fire Extinguisher
- Respirator Fit Testing
- Hands On PIT (Forklift)

The Great Escape with Fire Extinguisher Training and Evacuation Chair in person trainings are offered on a bimonthly basis. Click here for the schedule. Please call to sign up for a date.

**DRIVING UTA VEHICLES**

Defensive Driving Awareness - This online course must be completed every 3 years to remain an authorized driver of UTA vehicles. Additionally, an individual driving record check (MVR) must be updated annually.

12 & 15 Passenger Van Training: Take the online course first. A behind-the-wheel driving test is also required and will be conducted at the EH&S office, 500 Summit Ave. Drivers must have already passed the Defensive Driving Course and have a current approved driving record check (MVR) to attend. Click the link below to schedule a date and time.

[EH&S Booking Site for 12 & 15 Passenger Van Training](https://uta-ehs.org)