

**In this issue of the Environmental Health and Safety (EHS) Listserv –  
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## **1. Lab Coats from a Vending Machine**

Have you ever seen vending machines like these in Hamilton Hall? The Chemistry department reviewed injury incidents to students over a period of time. The department determined that, due to inadvertent chemical splashes in student lab classes, a program for supplying lab coats to an identified group of students would improve Chemistry Lab safety.



Over 8 years ago the Chemistry Department had implemented a requirement for lab coat wear in courses that were upper-level lab courses. At that time, the department did not think it was feasible to implement a lab coat requirement for the entry level lab courses since those courses were much larger and there was nowhere to store 800 lab coats.

As part of the department's continual move towards implementing better safety standards for Chemistry students, requiring lab coat use in additional lab courses was reviewed over time. Recently, the Chemistry Department spent

nearly a year in consultation with faculty members at other universities and conducting a survey of General Chemistry Coordinators at other Big 10 institutions. As a result of this research, they arrived at a vending machine solution which other large universities had instituted. The company selected, Cintas, was the only one offering this type of service when the decision was made to move forward. In addition to the fact that lab coat use could reduce injury from chemical spillage, other considerations were:

- It is not wise for students to carry dirty lab coats in their backpack and potentially spread contamination.
- Students should not launder their own lab coats with other laundry due to the potential for chemical contamination of their regular laundry.

The program instituted allows students enrolled in certain Chemistry lab courses to swipe their NUID at a vending machine like those shown above and get a lab coat from the dispenser unit. When the student's lab is finished, the student swipes their NUID at the receptacles which are part of the dispenser and places their dirty lab coat inside to be laundered by the company maintaining the vending machine. This program is being paid for partially by laboratory fees and partially by the department.

Upon implementation of this program, the primary comment from undergrad students was that they felt "more professional." The University of Texas-Austin did a 6-semester study of undergraduate lab grades before and after implementing a lab-coat program and found a four-point increase in lab course scores. Students seemed to take laboratory work more seriously when required to wear a lab coat.

This program is part of the Department of Chemistry's continual effort towards implementing better safety standards for their students. Questions about this program may be addressed to Martha Morton, Chemistry Safety Committee, [mmorton4@unl.edu](mailto:mmorton4@unl.edu) or Leah Zohner, [leah.zohner@unl.edu](mailto:leah.zohner@unl.edu), Program Administrator.

## 2. Safe Snow Removal

Snow shoveling and use of a snow blower present a number of hazards. Here are some tips to help keep you safe while moving snow.

Preparation:

- **Dress appropriately.** Wear water-repellent clothing, layered to allow removal of a layer to prevent overheating. Cover your head, hands, and feet with weather-appropriate gear. Wear shoes/boots with slip-resistant soles.

- **Timing matters.** Start snow removal when there is a light covering and repeat. Do not wait for the snow to stop/accumulate. Do not plan to shovel immediately after eating and avoid caffeine before beginning.
- **Clear vision is important.** Be sure your cold weather clothing does not obstruct your vision so you can watch for icy spots/uneven surfaces. Maintain awareness of your surroundings so you do not inadvertently find yourself in a traffic path as vehicles may not have good traction on the snow/ice.
- **Prepare yourself.** Shoveling snow can raise your heart rate and blood pressure. Snow shoveling is an aerobic activity. Do not shovel right after eating. Warm up before shoveling, stretching as you would for any workout. Walking a few minutes or marching in place is one suggestion for a “warm-up.” Cold, tight muscles are more likely to result in a sprain or strain. If you have a history of heart or other medical problems or do not exercise regularly, check with your doctor before shoveling.

While shoveling:

- **Pace yourself.** Take it slow and stretch before you begin. Take frequent breaks and drink plenty of water to prevent dehydration. Stop shoveling immediately if you experience pain or difficulty breathing or become fatigued.
- **Use proper equipment.** Use a shovel comfortable for your height and strength. Sometimes a smaller blade is better as it avoids the risk of trying to pick up too much snow at once.
- **Use proper technique.** When gripping the shovel position your hands 12 inches apart. This increases leverage and reduces the strain on your body. If possible, push the snow rather than lift to avoid back strain.
- **Push the snow, if possible. Lift only when necessary. If you must lift, lift properly.**
  - Lift with your legs and tighten your stomach muscles.
  - Keep your back straight and do not bend at the waist.
  - Scoop small amounts and walk to where you want to dump the snow.
  - Never remove deep snow all at once, rather shovel an inch or two and repeat.
  - Do not twist your body to shovel or empty the load. Never throw snow over your shoulder.

If possible, use a snow blower instead of shoveling by hand. However, recognize that a snow thrower presents unique hazards. These are a few tips to help prevent injury when using a snow thrower:

- **Never wear loose pants, jackets, or scarves.** Loose clothing can become entangled in moving parts and pull you in. Wear boots with good traction.

- **Operate snow blowers only when there is good visibility.**
- **NEVER stick your hands in the snow blower!** To resolve jams, shut-off the engine and wait more than five seconds to ensure all moving parts are still. Use a solid object to clear the chute.
- **Do not leave the snow blower unattended.** Shut off the engine if you must walk away.
- **Add fuel before starting the machine, never while the engine is running or hot.** Be sure to fuel the snow blower outside not in a garage, shed or another enclosed area. Do not operate in an enclosed area to avoid being overcome by engine fumes (carbon monoxide).
- **Avoid the engine.** The engine becomes hot during use and can burn unprotected flesh.
- **Use the pull-cord safely.** Hold cord firmly, stand with feet wide apart. Do not force the cord if it does not move freely. Sharply pulling can cause upper body/back injury.
- **Watch the power cord.** For electric snow blowers, remain aware of power cord location. Entangled/severed power cords can lead to shock or electrocution.
- **Do not remove safety devices and keep hands and feet away from moving parts.** Safety devices, shields, guards, and interlocks are there for operator protection.
- **Watch out for motor recoil.** After the machine is turned off there is a brief recoil of motor and blades.
- **Keep others away, including children.** Snow blowers can pick up and shoot objects such as rocks and other debris with significant force. Take care to properly position the discharge chute so as to not direct snow into the path of others in the area.
- **Wear earplugs.** Gas-powered models typically run about 85 decibels so protect your hearing.
- **Wear goggles.** Protect your eyes from small stones or other items that can be thrown up by a snow blower.
- **Understand the machine.** Read the instruction manual prior to use and be familiar with all features. Do not attempt to operate, repair, or maintain the snow blower without reading the instruction manual.

## General Resources

- National Safety Council *“Why do People Die Shoveling Snow?”*  
<https://www.nsc.org/home-safety/tools-resources/seasonal-safety/winter/snow-shoveling>
- American Association of Orthopedic Surgeons *“Orthoinfo: Prevent Snow Shoveling and Snowblowing Injuries”*  
<http://orthoinfo.aaos.org/topic.cfm?topic=A00060>

- Consumer Reports “Commonsense tips for safer snow blowing”  
<http://www.consumerreports.org/cro/news/2013/12/common-sense-tips-for-safer-snow-blowing/index.htm>
- Canadian Centre for Occupational Health and Safety “Landscaping – Snow Blower”  
[https://www.ccohs.ca/oshanswers/safety\\_haz/landscaping/snow\\_thrower\\_s.html](https://www.ccohs.ca/oshanswers/safety_haz/landscaping/snow_thrower_s.html)
- OSHA Winter Weather Hazards/Precautions  
<https://www.osha.gov/winter-weather/hazards>
- OSHA Protecting Workers from Cold Stress  
<https://www.osha.gov/Publications/OSHA3156.pdf>

### Video Resources

- **Snow Shoveling Safety** (Cleveland Clinic, 2:06 minutes)  
<https://www.youtube.com/watch?v=-IMXSElabMM>
- **Easy Snow Shoveling Techniques – LSTraining.com** (LS Training System, 2:26 minutes)  
<https://www.youtube.com/watch?v=hX6uaTivlcQ>
- **Snowblower Safety** (Grabow Hand to Shoulder Center, 2.47 minutes) [https://www.youtube.com/watch?v=G00z3F\\_lmeY](https://www.youtube.com/watch?v=G00z3F_lmeY)
- **Snow Blower Safety Tips** (Toro, 3:14 minutes)  
<https://www.youtube.com/watch?v=qLp75kUdRDw>

### 3. Safety Shorts: Carbon Monoxide Safety

The following videos provide information on how to avoid illness or death from carbon monoxide exposure, an often-overlooked winter hazard.

- **The Quiet Killer** (Centers for Disease Control and Prevention, 3.17 minutes)  
<https://www.youtube.com/watch?v=gZp5jAg4-PM>  
This video references using generators outdoors only. Do not leave snow throwers and other gas-powered equipment running inside a garage.
- **Winter Safety Tips** (U.S. Consumer Product Safety Commission, 1.46 minutes)  
<https://www.youtube.com/watch?v=PmkNxz0BZdw>  
The recommendation to not run vehicles in a home garage also applies when vehicle exhaust is close to an air intake vent.
- **Carbon Monoxide Safety** (City of Vaughan, 1.15 minutes)  
<https://www.youtube.com/watch?v=Pt7jT5mlQbM>

NOTE: Resources are provided for informational purposes only. Publication does not in any way endorse a particular company or product or affect current UNL policies and procedures.

#### **4. Situational Preparedness – Parking Lot Safety**

Situational preparedness is so important that we will be looking at various aspects over time, as well as providing resources to assist you to “be prepared” for whatever situations you may encounter. Everyone who drives to work or elsewhere uses a parking lot/garage sometimes. The key to parking lot safety is to ‘Stay Alert.’

Safety isn’t guaranteed just by driving slowly in parking lots. Below are some general safety tips for drivers:

- Avoid cutting across lots. Stay in the traffic flow lane.
- Drive slowly and use directional signals.
- Anticipate the actions of other drivers.
- Obey signage within the lot.
- When backing out, be mindful of vehicles and pedestrians.
- If possible, select a parking area/slot where you do not need to back out but can exit by pulling forward.

Tap into technology. Many vehicles today are equipped with backup cameras, which provide a wide view behind a vehicle operating in reverse. Remember to keep your backup camera lens clean or the view will be obstructed.

Even with a backup camera or other technology, it is best to conduct a quick, 360-degree walk-around the vehicle before backing, keeping an eye out for low-lying objects. Monitoring systems can alert drivers of vehicles in blind spots. Typically, drivers are warned of another vehicle’s presence via symbol, sound, or vibration. These systems may not detect motorcycles, smaller objects or people.

Once you begin backing out of a parking area look over your shoulder and use your mirrors as you back up.

Other Parking Lot hazards. Inadequate pavement striping, potholes or cracks, lack of signage, debris, poor lighting, puddles, as well as snow and ice can lead to pedestrian injuries or vehicle collision.

Choosing the right parking spot can go a long way toward deterring theft and crime. Consumer Reports provides some simple safety rules:

- Pick spots that are well-lit and close to where you will be going.
- Lock your doors.

- Store purchases or other items in places that are out of sight (in the trunk or tucked under dark-colored blankets).

When contemplating taking a safety shortcut, always ask yourself: Is it worth the risk?

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## 5. Plan Ahead - Winter



During the winter be intentional when navigating walkways where snow may have melted during the day and refrozen. Look for paths that are/have remained clear. Use care going up and down steps and entering buildings even if you can't see any water or ice where you plan to step. When getting into and out of a vehicle maintain physical contact with the vehicle in case you encounter a slippery spot. Select a parking spot that is clear of ice, snow, and water that can refreeze. Neglecting to plan ahead while winter walking and driving is a mistake that can lead to aches...or worse.

### Resources

- **Plan Ahead** graphics <https://ehs.unl.edu/plan-ahead>

## 6. Revised Safe Operating Procedures

- **Acrylamide**  
<https://ehs.unl.edu/sop/s-acrylamide.pdf>  
Updated references and addition of a spill response procedure
- **Ground Glass and Glassware Safety**  
<https://ehs.unl.edu/sop/s-groundglass.pdf>  
Updated references

➤ **Nanoparticle Safety**

[https://ehs.unl.edu/sop/s-nanoparticle\\_safety.pdf](https://ehs.unl.edu/sop/s-nanoparticle_safety.pdf)

Updated references and resources

**Adopt Safety as Your Attitude – DON'T LEARN BY ACCIDENT!**

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