

**In this issue of the Environmental Health and Safety (EHS) Listserv, November 4, 2015:**

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## **1. Fall Safety Colloquia – 7 Days and Counting**

Two colloquia, co-sponsored by EHS and the Office of Research and Economic Development, are scheduled for November 11, 2015, just one week away! These two distinct colloquia each feature a speaker from Cintas, an industry leader in flame-resistant protective clothing for both laboratory and trades workers. Each colloquium will be presented twice to maximize accessibility:

- Protective Apparel for Laboratory Safety
  - City Campus Union 9:30 – 10:30 a.m.
  - Repeated at East Campus Union 11:30 a.m. – 12:30 p.m.
- NFPA 70E Electrical Safety Protective Apparel
  - Auditorium in Facilities Management Shops (FMS) Building 11:00 a.m. – 12:00 p.m.
  - Repeated 12:30 p.m. to 1:30 p.m.

Plan to attend the Fall Safety Colloquium applicable to your work. RSVPs are not required. A map of free parking from 10:30 a.m. – 2:00 p.m. in a specific lot adjacent to the Facilities Management Shops (FMS) Building for those who do not have a UNL Parking Sticker and wish to attend a session at that location is posted on the EHS web site.

### **Resources**

- EHS Safety Colloquium Series <http://ehs.unl.edu/training/Colloquium>

## **2. Wintertime Safety**

Both walking and working in snowy/icy/cold conditions are the focus of this article. Let's begin by reviewing suggestions for "walking." Walking around campus or from your vehicle/bus to your workplace during the winter can be hazardous. Every winter slip/trip/fall injuries at UNL attributed to snow and ice account for approximately 3% of the overall number of injuries in a given year. That may not sound like much...until YOU are one of the injured.

Just like winter driving, winter walking requires anticipation. Think "defensive walking." Follow these guidelines to help avoid injury:

- Use **appropriate footwear** for the surface/conditions. Avoid slick-soled shoes. Wear boots/shoes/overshoes with grip soles such as rubber or neoprene composite.
- Plan ahead to give yourself **sufficient time** to reach your destination.
- Plan your route and **watch where you walk**. Avoid routes that have not been cleared or appear glazed over.
- **Avoid carrying** large/heavy/awkward objects that can obstruct your view or affect your balance or center of gravity.
- Use special care in **parking lots**. Try to park in areas free of ice. When entering/exiting your vehicle, use your vehicle for support.
- Think about the **walking surface** whenever you move about campus, especially on days that are sunny. Some areas previously cleared may have partially thawed and refrozen, especially near the edges, leaving a glaze of ice.
- Use caution when **entering a building** as any snow left on your footwear will thaw with the building heat. Notice if the floor is wet from previous entrants. Avoid such indoor wet areas and if they cannot be avoided, traverse them the same as you would walk on ice. Contact Custodial Services to inquire about equipping areas prone to track-in with walk-off mats.
- **Pay complete attention** to your walking. Don't talk on the phone or text, search for items in your purse/briefcase, get distracted by greetings/conversation, think ahead to events of the upcoming day, etc.
- Always use "**defensive walking**" techniques. Watch for hazards like black ice.

If you must walk on slippery surfaces:

- Take short steps or shuffle your feet. Walk more slowly so you can react quickly to a change in traction.
- Bend slightly as you walk to keep your center of gravity over your feet. Curl your toes under and walk as "flat-footed" as possible.
- Test potentially slick areas by tapping your foot on them before proceeding.
- Avoid uneven areas and stepping up/down on icy areas such as curbs.
- Keep your hands out of your pockets. Use your arms for balance. Imagine you are going to "walk like a penguin."

Resources Specific to Winter Walking:

- Be Safe On Ice <http://ccd.fnal.gov/fire/walking-safely-on-ice.pdf>
- Iowa State University Environmental Health and Safety "*Helpful Hints When Walking on Snow or Ice*" <https://www-ehs.sws.iastate.edu/prep/weather/winter/walking>

Next let's look at "working outdoors." There are a number of hazards associated with working outside in cold weather. Be aware of potential hazards, their warning signs, and how to avoid the hazard so you can safely navigate this winter season.

- **Hypothermia.** In cold weather your body may lose heat faster than it is produced. Prolonged exposure will eventually use up all your body's stored energy, resulting in an abnormally low body temperature. If low body temperature affects your brain, you may not be able to think clearly or realize you are in trouble. Warning signs include: shivering, fatigue, and loss of coordination.
- **Frostbite.** Frostbite is an injury caused by freezing, characterized by reduced blood flow, leading to lack of feeling and color in the affected body parts. Most often the body parts affected are nose, fingers, toes, ears, cheeks or chin. Warning signs include: numbness, aching, tingling or stinging, bluish or pale skin, and skin that feels unusually firm or waxy.
- **Chilblains.** Repeatedly exposing skin to cold temperatures can cause permanent damage to groups of small blood vessels in the skin, characterized by redness and itching that return with subsequent exposures. Body parts most often affected are cheeks, ears, fingers and toes. Warning signs include: redness, itching, blistering/ulcers, and inflammation.

Prevention is always the best policy to avoid cold stress. Here are some precautions workers should take if they must work in extreme cold:

- **Wear appropriate clothing.** Layered clothing, loose and not too tight, provides insulation yet allows good blood circulation. Wear footwear designed for cold, wet conditions.
- **Cover your head** to reduce body heat loss. Protect ears, face, hands and feet.
- **Try to schedule work** for the warmest/driest/least windy part of the day. Take regular breaks in a warm, dry, and protected area. Limit the total amount of time outside during extremely cold weather.
- **Do not touch** cold metal surfaces with bare skin.
- **Stay hydrated** by drinking plenty of fluids, especially warm fluids. Avoid drinks with sugar and/or caffeine.
- **Avoid exhaustion or fatigue**, because energy is necessary to keep muscles warm.
- **Be aware if any medications you are taking might make you more susceptible** to cold stress. Certain medical conditions also increase your risk: diabetes, high blood pressure, or cardiovascular disease.
- **Monitor your physical condition** and that of your co-workers. You may not be aware of warning signs that a co-worker would be able to observe.

A National Weather Service Wind Chill Chart will help you evaluate temperature/wind combinations to work more safely outdoors when the weather is cold.

Other wintertime hazards, often related to snow cleanup, but also applicable in other outdoor work situations are:

- Lacerations or amputations from improperly attempting to clear jams in snow removal equipment. Make certain all powered equipment is properly guarded, isolated from power sources, and all parts have stopped moving before performing maintenance or attempting to clear a jam.
- Strains and sprains from prolonged or improper use of shovels or other snow removal equipment. Keep in mind body movement and positioning. Avoid overexertion.
- Carbon monoxide poisoning can result from idling vehicles or use of gasoline or kerosene-powered heaters or generators in an inadequately ventilated area. Avoid idling vehicles in garages or near buildings where the air-intake may allow exhaust to enter the building. Do not use gasoline/kerosene burning devices indoors without proper ventilation of exhaust fumes.

NOTE: Carbon monoxide (CO) is a colorless, odorless, tasteless gas that can cause sudden illness or death. Seek prompt medical attention if you suspect CO poisoning and are feeling dizzy, light-headed, or nauseous.

Resources Specific to Working Outdoors:

- National Weather Service (NWS) Wind Chill Chart and Calculator  
<http://www.nws.noaa.gov/om/winter/windchill.shtml>
- Occupational Safety & Health Administration (OSHA). “*Tips to Protect Workers in Cold Environments.*”  
[http://www.osha.gov/as/opa/cold\\_weather\\_prep.html](http://www.osha.gov/as/opa/cold_weather_prep.html)
- OSHA. “*Cold Stress Quick Card: Protecting Workers from Cold Stress*”  
<https://www.osha.gov/Publications/OSHA3156.pdf>
- OSHA “Winter Weather: Plan. Equip. Train.”  
[https://www.osha.gov/dts/weather/winter\\_weather/](https://www.osha.gov/dts/weather/winter_weather/)
- Centers for Disease Control (CDC) & Prevention. “*Cold Stress.*”  
<http://www.cdc.gov/niosh/topics/coldstress/>
- CDC “Frequently Asked Questions: Carbon Monoxide”  
<http://www.cdc.gov/co/faqs.htm>
- Iowa State University Environmental Health and Safety “*Winter Driving*”  
<https://www-ehs.sws.iastate.edu/publications/handouts/WinterDriving.pdf>

### **3. Safety Shorts (Cold Weather Walking & Working Tips)**

This series features links to short safety resource(s) each month. Regardless of format - video, PDF, other - these short features cover various topics and are intended as resources for safety committees, faculty/staff/students, as well as individual laboratories/work areas.

- **Cold Weather Slips and Falls – 9 Defenses – Safety Training Video – Fall Prevention** (Safety Memos, Duration 2:51 minutes). The focus of this video is walking on ice and snow. <https://www.youtube.com/watch?v=8YfwURGbJVg>
- **Winter’s Hidden Hazard – Cold Weather Health & Safety – Safety Training Video** (Safety Memos, Duration 2:59 minutes). The focus of this video is working in the cold. <https://www.youtube.com/watch?v=g3vEkqotiE8>
- **Walk Like a Penguin** (Marshfield Clinic Marshfield Center, Duration 1:10 minutes). This concept is used to illustrate safe walking on ice and snow. <https://www.youtube.com/watch?v=LHaWGibGwyk>

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. Health Effects of Contaminated Water In Eyewash Stations

The August 18<sup>th</sup> Issue of the EHS listserv reported on a laboratory incident involving acid splashed into a student’s eye and the “Safety Short.” ***Injuries and Chemical Burns to the Eye*** highlighted use of an eyewash station among other safety information. As a follow-up, we emphasize that eyewash stations must be maintained, to prevent injury and illness to workers from contaminated water. The OSHA Infosheet referenced below discusses the potential for microbial contamination in improperly maintained eyewash stations.

Eyewash stations are critical emergency safety equipment intended to mitigate eye injuries when control methods do not prevent exposure to a physical or chemical irritant or biological agent. The ANSI (American National Standards Institute) standard for eyewashes specifies that eyewashes must be capable of delivering tepid flushing fluid to the eyes for 15 minutes after a single movement (activating water flow) and subsequent hand-free operation.

Eyewash stations should be activated and thoroughly flushed once a week to reduce microbial contamination. Stagnant water due to failure to conduct this routine maintenance can result in growth of organisms that pose an infection hazard when the eyewash station is used in an emergency situation.

#### Resources

- OSHA (Occupational Safety and Health Administration) Infosheet “*Health Effects from Contaminated Water in Eyewash Stations*”  
<https://www.osha.gov/Publications/OSHA3818.pdf>
- ***Emergency Eyewash and Shower Equipment SOP***  
[http://ehs.unl.edu/sop/s-emerg\\_eyewash\\_shower.pdf](http://ehs.unl.edu/sop/s-emerg_eyewash_shower.pdf)
- EHS Listserv Past Issues <http://ehs.unl.edu/listserv-past-issues>

## 5. NEW Training: Chemical Hazard Assessment and Risk Minimization

Now online is a new web-based training module designed to assist those who work with chemicals, in particular in a laboratory setting. This training is designed to teach the general concepts and approaches to identify, evaluate, and mitigate hazards prior to all chemical manipulations. Nationwide this has been recognized as a prudent practice in college and university laboratory operations.

The American Chemical Society recently revised their Guidelines and Evaluation Procedures for Bachelor's Degree Programs to include a requirement that the undergraduate curriculum be designed in a manner that teaches students to use problem-solving skills to "recognize chemical and physical hazards in laboratories, assess the risks from these hazards, know how to minimize the risks, and prepare for emergencies."

While this training is not part of UNL's undergraduate curriculum, it is intended to serve as one tool to assist any person in the UNL community with understanding and applying chemical hazard assessment and risk mitigation processes and concepts. It is particularly intended for persons working in chemical laboratories and builds on important and foundational information prevented in the following EHS training: ***Injury and Illness Prevention Plan***, ***Emergency Preparedness***, and the four units of ***Chemical Safety*** training.

### Resources

- EHS web-based training <http://ehs.unl.edu/web-based-training>

## 6. Safety Poster – Safer Science

EHS has developed a number of safety posters of relevance to the campus community. Have you thought about how "safer" science actually happens? Safer scientific endeavors begin with each of us.

Here are a few tips toward the goal of a safer workplace:

- Restrain long hair to keep it from inadvertently falling into chemicals or becoming entangled in equipment.
- Wear ANSI Z87 eye protection appropriate for the hazard: dusts and other flying fragments, objects, chips or particles; hot sparks; chemical splash or mist; intense light/radiation (lasers, welding, etc.).
- Wear appropriate attire, e.g., long pants, close-toed shoes.
- Use ANSI-approved hand protection appropriate to the hazard: contact with chemical, biological, radioactive materials; likelihood of cuts, abrasions, or puncture; exposure to severe or prolonged vibration; potential contact with electrical systems; exposure to temperature extremes such as heated surfaces or cryogenics.



Order your FREE poster(s) today by contacting [ehs@unl.edu](mailto:ehs@unl.edu) or 402-472-4925 with your name, campus mailing address, and quantity desired.

## Resources

- Safety Posters <http://ehs.unl.edu/safety-posters>

## 7. Revised Safe Operating Procedures (SOPs)

- **Construction Activities – Environmental Protection and Compliance**  
[http://ehs.unl.edu/sop/s-construction\\_activities\\_EP\\_%26\\_compliance.pdf](http://ehs.unl.edu/sop/s-construction_activities_EP_%26_compliance.pdf)  
Updated to include information on PCBs (Polychlorinated biphenyls), metal-bearing paints, and fly ash
- **Insect Stings and Bites** SOP  
[http://ehs.unl.edu/sop/s-insect\\_stings.pdf](http://ehs.unl.edu/sop/s-insect_stings.pdf)  
Title and contents revised to include information on vector-borne diseases
- **Oil Release Preparation and Response** SOP  
[http://ehs.unl.edu/sop/s-SPCC\\_spill-release\\_prep\\_response.pdf](http://ehs.unl.edu/sop/s-SPCC_spill-release_prep_response.pdf)  
Combined information previously found in the SOPs “SPCC & Storm Water BMPs Hazards of Oil” and “SPCC & Storm Water BMPs Spill/Release Preparation & Response” into one document
- **Transport of Biohazardous Materials (Including Research and Clinical Specimens/Materials)** SOP  
[http://ehs.unl.edu/sop/s-bio-transport\\_biohaz\\_materials.pdf](http://ehs.unl.edu/sop/s-bio-transport_biohaz_materials.pdf)  
Clarification that contents applies to on-site transport only

**Remember...SAFETY IS AN ATTITUDE!**

**Environmental Health and Safety**

University of Nebraska-Lincoln

3630 East Campus Loop

Lincoln, NE 68583-0824

(402) 472-4925

<http://ehs.unl.edu>