

In this issue of the Environmental Health and Safety (EHS) Listserv, March 7, 2013:

1. Mark Your Calendars-TWO April Events!
 2. Nail It! (Nail Gun Safety)
 3. Elements of Creating Safety Cultures in Academic Institutions: Educate the Educators.
 4. Dumpsters: Keeping Trash IN and Stormwater OUT
 5. Revised Safe Operating Procedure & Program Document
-

1. Mark Your Calendars – TWO April Events!

#1: Don't miss the next Laboratory Safety Colloquium, "**Enhancing Laboratory Safety**," sponsored by Environmental Health & Safety and the Office of Research and Economic Development. Dr. Craig Merlic, UCLA Professor in the Department of Chemistry and Biochemistry will share his experience in building a laboratory safety culture at UCLA following a laboratory accident that claimed the life of a staff researcher in 2009.

There will be ONE SESSION ONLY on Thursday, **April 11, 2013, 1:30 – 3:00 p.m.** in the Regency Suite of Nebraska City Union. This spring's colloquium will be held in conjunction with the Office of Research and Economic Development *Spring UNL Research Fair 2013*. Mark your calendars for this important safety event!

Pre-registration is NOT required. We encourage a physical presence at Dr. Merlic's presentation. However, recognizing that circumstances may prevent some people from attending on-site, the session will be live streamed through the EHS web site: <http://ehs.unl.edu/training/Colloquium>. As with most other colloquia, this session is being recorded and will be available a few weeks after the event.

#2: The Chancellor's University Safety Committee (CUSC) will host an **Open Forum** meeting at Nebraska East Union on **Tuesday, April 16, 2013, from 3:00 – 4:30 p.m.** The campus community is encouraged to attend, share concerns, or just observe the workings of the CUSC.

The CUSC is a UNL committee established to assist the Chancellor by making recommendations of methods to reduce safety hazards at UNL. The campus community may contact the CUSC Chair at any time with safety concerns or questions and attend quarterly meetings.

The CUSC charter, as well as links to CUSC Chair, upcoming agenda, previous meeting minutes, current year's goal and more, are available online. Plan to attend the upcoming meeting!

Resources:

- Laboratory Safety Colloquium Series
 - EHS web site: <http://ehs.unl.edu/training/Colloquium/>
 - ORED web site: <http://research.unl.edu/laboratorysafetycolloquium/>
- Chancellor's University Safety Committee <http://ehs.unl.edu/chancellors-university-safety-committee-cusc#cusc>

3. Nail It! (Nail Gun Safety)

Nail guns are in use at various UNL locations. Nail guns boost productivity but also can cause serious injuries. One study found that 2 of 5 carpenter apprentices experienced a nail gun injury over a four-year period. More than half of reported nail gun injuries are to the hand and fingers. Serious nail gun injuries to spinal cord, head, neck, eye, internal organs, and bones can result in paralysis, blindness, brain damage, bone fractures, and death.

Nail gun safety starts with understanding the various trigger mechanisms. All nailers rely on two basic controls: a finger trigger and a contact safety tip located on the nose of the gun. There are several types:

- Full sequential trigger
- Contact trigger
- Single sequential trigger
- Single actuation trigger

There are seven major risk factors that can lead to a nail gun injury:

- Unintended nail discharge from double fire. Unintended nail discharge is a common source of injuries accounting for two-thirds of injuries. This occurs with contact triggers. Double fire can be a particular problem for new workers who may push hard on the tool to compensate for recoil.
- Unintended nail discharge from knocking the safety contact with the trigger squeezed. This occurs with contact and single actuation triggers. Holding or carrying these nail guns with the trigger squeezed increases the risk of unintended nail discharge.
- Nail penetration through lumber work piece which can occur with ALL trigger types. If the nail passes through a work piece it can either hit the worker's hand or fly off as an airborne nail.
- Nail ricochet after striking a hard surface or metal feature can occur with ALL trigger types. When a nail hits a hard/metal surface it has to change direction and can bounce off the surface becoming a projectile.
- Missing the work piece can occur with ALL trigger types. When the tip of the nail gun does not make full contact with the work piece, the discharged nail can become airborne.

- Awkward position nailing, can occur with ALL trigger types. In awkward positions the tool and its recoil are harder to control.
- Bypassing safety mechanisms can occur with ALL trigger types. Never disable or bypass safety features.

Six practical steps to prevent nail gun injuries are:

- Use full sequential trigger nail guns;
- Provide training (both new and experienced workers), including a “hands-on” component;
- Establish nail gun work procedures to address risk factors and make the work as safe as possible;
- Provide personal protective equipment (PPE): hard hats, high impact eye protection (safety glasses or goggles marked ANSI Z87.1), hearing protection – either earplugs or earmuffs;
- Encourage reporting and discussion of injuries and close calls; and
- Provide first aid and medical treatment.

Nail Gun Safety, a publication developed by the Occupational Safety and Health Administration (OSHA) and National Institute of Occupational Health and Safety (NIOSH), provides further information including a list of topics for training and a list of do’s and don’ts for safe work procedures.

This publication will assist with completion of a Job Safety Assessment (JSA) as outlined in the EHS ***Job Safety Assessment*** Safe Operating Procedure (SOP).

Resources:

- Nail Gun Safety (OSHA/NIOSH) http://www.osha.gov/Publications/NailgunFinal_508_02_optimized.pdf
- ***Job Safety Assessment*** SOP <http://ehs.unl.edu/sop/s-JSA.pdf>
- ***Hearing Conservation*** SOP http://ehs.unl.edu/sop/s-hearing_conservation.pdf

3. Elements of Creating Safety Cultures in Academic Institutions: Educate the Educators

As you may recall from previous issues of the EHS listserv, there has been a great deal of national attention given to the topic of laboratory safety in higher education following investigations of serious incidents at UCLA and Texas Tech. As a result, the American Chemical Society (ACS) recently issued a report, ***Creating Safety Cultures in Academic Institutions***. While this report focuses on laboratory safety, its content is applicable to all campus settings.

This report contained seventeen specific recommendations for creating vibrant, strong safety cultures in academic institutions. Each of these recommendations will be highlighted individually and presented as a series in the EHS listserv. The fifth recommendation in the ACS report is:

Ensure all faculty, staff, and graduate and undergraduate students involved in teaching, managing, or overseeing students in laboratory courses and sessions have successfully completed a course in lab safety.

Building solid safety awareness and attitudes requires a long-term effort and education of those in charge of educating others should be one focus of this effort. Designated faculty and staff, graduate teaching assistants and postdoctoral scholars, who teach laboratory sessions or oversee research in laboratories, should be educated to conduct research operations safely and have a thorough understanding of laboratory safety. Early-career faculty members might be mentored in safety and in learning how to develop a safety culture within their laboratory group.

There are many ways the educational process may occur, for example, through opportunities offered by professional organizations, or companies who provide or supply laboratory equipment. An excellent resource is the National Research Council's *Prudent Practices in the Laboratory*. As part of the educational process in laboratory safety, graduate students could participate with faculty and staff in periodic laboratory inspections or walk-through surveys, as well as being encouraged to participate in departmental safety committees, allowing them to participate in investigations of laboratory incidents and reminding them to take advantage of informal opportunities to teach safety skills to others while working in the laboratory. Current events in laboratory safety, such as incidents or new safety knowledge, could be presented as part of a seminar.

On-going safety education, planning, and communication can be accomplished by adhering to the recommendations contained in the EHS SOP, ***Chemical Hazard Assessment and Risk Minimization***. This SOP stresses the importance of integrating the safety risk assessment process with the well known scientific process.

Environmental Health and Safety and the Office of Research and Economic Development (ORED) provide a safety education opportunity twice a year through the Laboratory Safety Colloquium Series. In spring and fall these two departments bring subject matter experts to Lincoln to widely share their particular safety expertise. Upcoming is a topic of timely interest, ***Enhancing Laboratory Safety***, featuring Dr. Craig Merlic of the University of California-Los Angeles (UCLA).

Professor Merlic has been very active promoting chemical safety at UCLA. He created a course "Safety in Chemical and Biochemical Research" (Chemistry 400) in 1991 and worked to make the course required for all graduate students in the Department of Chemistry and Biochemistry. He serves as chair of the Department Safety Committee and is a member of the campus-wide UCLA Laboratory Safety Committee. He also advises the UCLA Office of Environment, Health and Safety on issues of safety policy and procedure.

Attending and encouraging colleagues, postdoctoral candidates, graduate students, and research staff to attend available safety events is a visible statement of the importance of “educating for safety.” The proper attitude toward safety is reflected in the “Safety Ethic,” espoused by the Safety Culture Task Force of the ACS Committee on Chemical Safety:

- **Value safety:** Safety is an integral part of what one does, its automatic, and it does not change its priorities. It is never questioned and never compromised.
- **Work safely:** One continues to learn about safety, learns to recognize hazards, assesses the risks of hazards, manages the risk of hazards, and prepares to handle emergencies.
- **Prevent at-risk behavior:** One does not cut corners or bypass safety measures in the laboratory (or other work environment) and shares this information with others, as needed.
- **Promote safety:** One encourages and acknowledges others in working safely.
- **Accept responsibility for safety:** One takes steps to work safely, setting a positive example for others, and being accountable for safety.

Resources:

- EHS SOP **Chemical Hazard Analysis and Risk Minimization**
http://ehs.unl.edu/sop/s-chemical_haz_assessment_risk_min.pdf
- Creating Safety Cultures in Academic Institutions
http://portal.acs.org/portal/PublicWebSite/about/governance/committees/chemicalsafety/CNBP_029720
- ACS Committee on Chemical Safety resources <http://www.acs.org/safety>
- **Prudent Practices in the Laboratory: Handling and Disposal of Chemicals, Revised 2011 Edition** http://www.nap.edu/catalog.php?record_id=12654
- UC (University of California) Center for Laboratory Safety (Resources)
<http://cls.ucla.edu/>
- Previous colloquia topics accessible online:
 - EHS web site: <http://ehs.unl.edu/training/Colloquium/>
 - ORED web site: <http://research.unl.edu/laboratorysafetycolloquium/>

4. Dumpsters: Keeping Trash IN and Stormwater OUT

There are many dumpsters located throughout the UNL campus. Dumpsters play an important role in keeping campus clean. They can also be conveyors of pollution if not maintained/managed properly. Dumpsters and waste receptacles must be closed when not in use, plugged at all times and not overfilled. Lids and plugs are the first line of defense against wind and rain carrying pollutants into the environment.

It's just stormwater....or is it? Stormwater, water that originates during precipitation events, starts out clean. However, if dumpster lids are left open, clean

stormwater can quickly turn into dirty water. If this dirty water is allowed to escape it is now considered leachate, a liquid that, in passing through matter, extracts solutes, suspended solids or any other component of the material through which it has passed. Leachate is an illicit discharge and is not allowed under the UNL Stormwater program.

Leachate can escape from dumpsters equipped with plugs if the plug is left open/is opened. NEVER open a dumpster plug and release liquids. These liquids, once released, travel to the nearest storm drain. Storm drains flow directly into rivers and streams without filtration.

If the dumpster doesn't leak nor has a plug it's not important to keep the lid closed, right? Wrong! Landfills charges by the pound for trash disposal and water is heavy. If water is allowed to accumulate in dumpsters, it costs the University more than necessary for trash disposal. Also, in transferring dumpster contents into a transport vehicle, liquid (leachate) can readily escape. Keep dumpster lids CLOSED except when adding materials to the dumpster.

No rain in the forecast, no need to close the lid, right? Wrong again! Environmental hazards include flying debris propelled by wind. When dumpster lids are left open the trash inside can blow out. The best way to eliminate this negative environmental impact is to keep dumpster lids closed when not in use.

Here are a few tips to keep trash inside dumpsters and stormwater out of dumpsters:

- NEVER unplug a dumpster and release stormwater that has accumulated.
- Do not overfill dumpsters or allow trash to accumulate around dumpsters.
- If you notice a plug is missing or a dumpster is leaking report the dumpster location to the Facilities Service Desk, 402-472-1550.
- Close dumpster lids after each use. If a dumpster lid is broken contact the Facilities Service Desk, 402-472-1550, with the exact location of the dumpster.
- As always, report any suspected illicit discharges to Environmental Health and Safety.

Environmental Health and Safety administers the UNL Stormwater program. To report any suspected illicit discharge, regardless of whether it is associated with a trash dumpster, or for questions regarding stormwater, contact Environmental Specialist, Liza Garrett, 402-472-2212, egarrett3@unl.edu.

Resources:

- ***Storm Water Pollution Prevention*** Safe Operating Procedures
<http://ehs.unl.edu/sop/storm-water-pollution-prevention>

5. Revised Safe Operating Procedure & Program Document

- ***Import and Transfer of Etiological Agents*** http://ehs.unl.edu/sop/s-ship_etiologic_agents.pdf

Updated to reflect revised guidance from CDC related to Etiological Agent Import Permit Program

➤ ***Respiratory Protection – Program Summary***

Minor revisions made to correct typographical errors and an incorrect regulatory reference.

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>