EHS ENVIRONMENTAL HEALTH AND SAFETY

Lab Chatter

October 2015
Volume 2, Issue 2

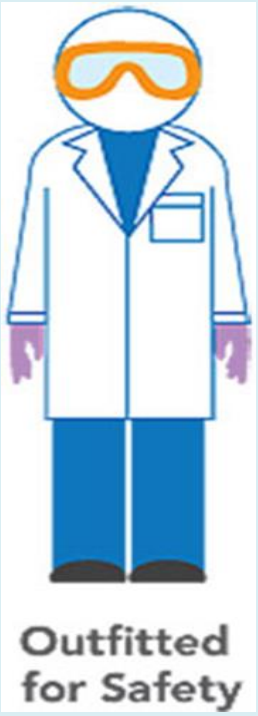
UNE UNIVERSITY OF NEW ENGLAND

Contents:

Proper lab attire is required in all campus laboratories as outlined by UNE EHS policies.

-No shorts/capri pants
-No sandals/flip flops
-No exposed feet, legs, or midriffs
-Lab coats (as required)
-Safety glasses/goggles, gloves, and additional PPE (as required by SDS or instructor)

The Marine Science Center has a separate lab attire policy for field work labs; see Angela Cicia, CHO for more information
For additional information on safety policies, contact UNE EHS (See last page).



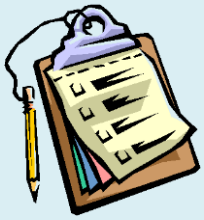
Weekly SAA inspections and absences

By Jessica Tyre

In these busy times, we all have the occasional off-campus conference, speaking engagement, vacation, or extended illness and we are not always able to keep up with our normal activities and commitments. However, your hazardous waste SAA (satellite accumulation area) needs to be in compliance in your absence. If the Maine Department of Environmental Protection (ME DEP) were to arrive and view your inspection logs the week you were out and they were not completed, UNE would still receive a violation, regardless of the reason. It is important for you to plan ahead if you are going to be away from campus for a week or more. There are two options for managing your SAA inspections:

1. Call EHS to pick up all waste currently in the SAA and shutdown the SAA while you are away. We can set it up very easily for you when you return.

2. Assign another individual, who has completed the UNE hazardous waste training module, to conduct your SAA inspections for you in your absence. **This person must have the appropriate training and be available for the dates you are unavailable. **



? ***Please feel free to contact EHS with questions or issues regarding your hazardous waste SAA or if you need to close/open your hazardous waste SAA. See contact information on last page of EHS Lab Chatter.***

Safety Spotlight

Specialized hazards in laboratories is the October 2015 Safety Spotlight

By Jessica Tyre

There are many hazards in laboratories. Some of them are consistent throughout all laboratories and some are specialized to the type of lab work or research being conducted. All UNE employees and students get a broad overview of lab safety in the training modules provided by the University. These training modules cannot possibly cover all the specialized hazards in all laboratories on the campuses. Instructors, lab managers, researchers, faculty and staff members are responsible for making sure they have provided a comprehensive training of the specialized hazards in their laboratory. These hazards could be: working with liquid nitrogen/cryogenics, exposure to specific biological agents, the handling precautions needed to work with specific animals whether they are sea creatures, rats, mice or insects, utilizing compressed gas cylinders, working in and out of -80 freezers, working with hazardous chemicals that have dangerous properties, or even specialized pieces of equipment in the lab that have their own unique hazards and personal protective equipment requirements. Please remember that if you have new employees or students working in your lab, they will need to know the safety protocols specific to your lab operations. Do not assume that if the person has had previous lab experience that they have been exposed to all the potential hazards in your laboratory, as this may not be the case. It is important for the individual to know (at a minimum):

- Hazards specific to the lab space and safe handling procedures
- Protocols/SOPs for working in the lab space
- Signs and labels communicating hazards
- Location of the Safety Data Sheet (SDS) book
- Location of all PPE needed
- Emergency procedures and location of emergency equipment
- Contact information of the person ultimately responsible for the lab workers

Proper training is essential to guarantee everyone leaves work in the same condition in which they arrived. Training and effective communication are crucial in attaining a positive safety culture at UNE. Safety in the lab is everyone's responsibility and it starts with you!

Changes in delivery protocol of hazardous chemicals for the Biddeford campus

By Ronnie Souza

A review of current delivery practices by Campus Services Mailroom to end-users in laboratories across campus revealed necessary changes in the delivery and receipt of hazardous chemicals in order to be compliant with State and Federal regulations as well as National Fire Protection Association guidelines (NFPA), which are enforced by our local fire department.

The University is required by Federal and State regulations to develop and implement a Chemical Management program. Under the Chemical Management requirements, UNE employees are required to handle, store and use the chemical properly from initial receipt to ultimate disposal (cradle to grave).

In order to understand what changes are taking place let's first take a look at our current chemical delivery protocol for the Biddeford Campus.

Current Chemical Delivery Protocol:

Hazardous Chemicals were being delivered to office locations of faculty/researchers and administrative staff in various buildings across campus.

What are the issues with this type of Delivery protocol?

- Office areas are not designed or approved locations in which to receive hazardous chemicals.
- Office areas do not have proper signage to alert others that hazard chemicals are present.
- Administrative Staff receiving chemicals do not receive annual Chemical Hygiene and Hazard Communication training and are therefore not properly trained.

So what changes do we need to implement in order to be compliant?

Proposed Chemical Delivery Protocol:

Hazardous chemicals will now be delivered directly to specific laboratories in each of the impacted buildings. Email notification of a pending delivery will be sent to the person that purchased the hazardous chemical. Only hazardous chemicals will be delivered to the new locations, all refrigerated/frozen packages and laboratory supplies will continue to be delivered as they have in the past. Email notification for non-hazardous packages will not be sent.

Sample of the email notification for hazardous chemicals:

"Your shipment has arrived. Expect delivery on the next mail run". This email will include a tracking number and the name of the company that shipped it. The email is dated and the subject reads: NOTICE FROM UNE MAIL SERVICES.

Where are the new centralized locations in each building?

Alfond – Laboratory 332, this space is currently in use for hazardous chemical receiving
Marine Science Center – Laboratory 117C
Morgane – Laboratory 211, this space is currently in use for hazardous chemical receiving.
Pickus – Laboratory 219
Stella – Laboratory 303

Please take a moment to review the UNE EHS Lab Safety Rules posting that is mounted on all laboratory doors and make sure all lab staff are familiar with the lab safety requirements. Thank you!

EHS
ENVIRONMENTAL HEALTH AND SAFETY

LAB SAFETY RULES

PLEASE READ ALL RULES BEFORE ENTERING AND LEAVING THE LAB

1. **No Food or Drink in the Lab**
   - Do not chew gum in the lab.
   - Do not apply cosmetics in the lab.

2. **Personal Safety**
   - Personal possessions will be stored outside of the lab.
   - Wear long pants and closed shoes (no sandals or exposed skin).
   - Wear appropriate PPE when handling toxic or hazardous chemicals as required by SDS.
   - Do not use any equipment unless you are trained and approved to do so.
   - If chemicals come into contact with your skin or eyes, flush immediately with water at the nearest eyewash station for 15 minutes and notify your instructor.

3. **General Lab Safety**
   - Report malfunctioning equipment to the person responsible immediately.
   - Consider all chemicals to be hazardous unless you are instructed otherwise.
   - Know the location of all safety and first aid equipment in the lab.
   - Report all accidents/incidents that occur while working in the lab.
   - Never leave burners unattended. Turn off the gas at the bench after use.

4. **Before Leaving the Lab**
   - Tighten lids on all chemical containers and SAA containers.
   - Clean up your work area.
   - Dispose of PPE.
   - Wash your hands.
   - Turn off all heat/ignition sources.
   - Turn off the lights and close the door.

September 2014

UNE UNIVERSITY OF NEW ENGLAND
www.une.edu/campus/ehs

LAB SAFETY CASE STUDY #1:

UCLA chemist avoids prison time for lethal lab accident

June 26, 2014 by Rebecca Trager (http://www.rsc.org/chemistryworld)

A legal case that could have set a precedent whereby university researchers in the US would be held liable for unsafe practices in their laboratories has been resolved without going to court, and the chemistry professor in question has avoided serving prison time.

After Sheri Sangji, a young research assistant at the University of California, Los Angeles (UCLA), died from lab injuries in early 2009, her supervisor, Patrick Harran, faced criminal prosecution. But a settlement was announced on 20 June that allows him to escape a trial.

On 29 December, 2008, Sangji was conducting an experiment in Harran's organic chemistry lab with a pyrophoric t-butyl lithium solution. She wasn't wearing a protective lab coat when the chemical burst into flames, severely burning her over nearly half of her body. She died from her injuries 18 days later.

The California Occupational Safety and Health Administration concluded in 2009 that the accident resulted from safety lapses and inadequate training, and criminal charges were brought against both UCLA and Harran.

UCLA settled its charges in July 2012, while Harran was charged with four felony counts of willfully violating state occupational health and safety standards. If convicted, he faced up to four and a half years in prison, but by settling out of court he has avoided this and is instead required to participate in community service and pay a $10,000 fine to a regional burn center where Sangji was treated.

'Ultimately responsible'

Although Harran was not required to plead guilty to any of the charges, in addressing the court on 20 June he acknowledged his role as Sangji's supervisor. Harran said he was 'ultimately responsible for the safety of personnel' in his lab.

Under the terms of the settlement, Harran is required to develop and teach a seven-week organic chemistry course for five years to help inner city high school graduates prepare for college level organic chemistry. He also must complete 800 hours of non-teaching community service at UCLA Hospital or UCLA Health Services, and will be required to speak to incoming UCLA students majoring in chemistry or biological sciences about the importance of lab safety. Until he completes all of these settlement agreement conditions, the criminal charges will remain pending, up to five years. The case will then be dismissed.

As what appears to be the first US professor ever charged with a felony involving the death of a student or employee they supervised, Harran's case received much publicity, and its relatively anticlimactic resolution drew some criticism.

Paul Bracher, a chemist at Saint Louis University, says he is 'dismayed' by the deal. Bracher expresses concern that a professor could remain in charge of his research group after demonstrating 'such profound incompetence' at maintaining a safe lab.

Slap on the wrist

Prosecuting Harran would have created a sense of justice, says Bracher: 'If someone commits a crime, they should pay for it.' He characterizes the deal as 'not even a plea bargain,' since the charges will completely disappear.

'He makes $300,000 a year, so $10,000 is less than a slap on the wrist,' Bracher adds, suggesting that it would have sent a strong message to the scientific community if Harran had been sentenced to house arrest, or something similar. 'The deal will probably have a slightly negative effect on lab safety because it shows that the government isn't serious about enforcing these labor laws in academic labs,' he tells Chemistry World.

Others appeared less surprised by the case's outcome. 'He was never going to plead guilty to any felony that was going to compromise his ability to get grant funding,' says Russ Phifer, executive director of the National Registry of Certified Chemists. However, he thinks the charges brought against Harran and UCLA have improved lab safety.

Since the accident, UCLA has increased the number of lab safety inspections, strengthened policies on the required use of personal protective equipment, and developed a hazard-assessment tool that labs must update whenever conditions change. 'This case in its entirety has had more impact on lab safety than anything else that's happened in the last 20 years,' says Phifer.

LAB SAFETY CASE STUDY #2:

Yale Student Dies in Chemistry-Lab Accident

April 14, 2011 By SOPHIA HOLLANDER (http://www.wsj.com)

A Yale University senior lauded as an ardent champion of women in science was killed in an accident in a campus lab, university officials said Wednesday. Michele Dufault, 22 years old and weeks from graduating, died after her hair became tangled in a lathe at Sterling Chemistry Lab, the university said in a statement. Police were notified at 2:36 a.m. after a group of students discovered Ms. Dufault, said New Haven Police Department spokesman Joseph Avery.

Before the accident, the school required undergraduates to complete one safety class before gaining access to the laboratory's machines, which were then available to them around the clock, multiple students said. A friend of Ms. Dufault, Joseph O'Rourke, said she had completed one machine-safety class and was taking a second one. A university spokesman didn't return calls for comment. Machine use will now be restricted to specific hours with monitors present until a review of safety policies is complete, Yale President Richard Levin said in a statement.

The U.S. Occupational Safety and Health Administration and Yale University Police are conducting investigations. A.J. Riggs, a senior majoring in physics and mechanical engineering, had worked with Ms. Dufault on her project. He said students often visit the lab late at night, when it is less crowded. The lathe is a circular vise that can hold a drill bit or a blade and rotates at a high rate of speed, Mr. Riggs said.

Across campus, Ms. Dufault, who was majoring in astronomy and physics, was remembered as a passionate promoter of women in sciences, helping to organize a Conference for Undergraduate Women in Physics at Yale in 2010 and collaborating with the Massachusetts Institute of Technology to stage a similar conference this January. "She creates a sense of community that is often difficult to find in a group so poorly represented as women in physics," said Edmund Bertschinger, the head of the physics department at MIT. He recalled seeing her face "cheerfully" popping up on computer screens during Skype calls leading up to the conference. She offered advice on panelists and urged the organizers to carve out space for more interactions between the speakers and students. "She was absolutely right," he said. "She was very supportive, encouraging, wise and gave us a sense of mission. She was a leader."

Yale junior Daksha Rajagopalan remembered Ms. Dufault reaching out in 2008 after they shared a physics class with only three women. Though Ms. Rajagopalan had fantasized about becoming a physicist since childhood, she said she was on the verge of quitting when Ms. Dufault approached her. At Ms. Dufault's invitation, Ms. Rajagopalan attended a conference on women in physics and found it revelatory. "Honestly, she's most likely the reason I'm still a physics major," she said. Ms. Dufault also encouraged Ms. Rajagopalan to pursue interests beyond physics, such as geology and climate. Ms. Rajagopalan, now a 20-year-old junior, decided to double major in physics and environmental studies.

The Yale laboratory was closed for the day and classes were canceled. Students sought out each other to mourn and share memories of a woman friends recalled as curious about exploring the world and committed to welcoming others to a sometimes-intimidating field. Mr. O'Rourke recalled first meeting Ms. Dufault as they sat on a bus heading to practice for the Yale Precision Marching Band in 2008. She overheard him mention an interest in astronomy and physics and leaned over to flash him a smile. "That's the way she was with everyone," said Mr. O'Rourke, a 20-year old junior.

Ms. Dufault, a cycling enthusiast from Scituate, Mass., played tenor saxophone in the band and went on to lead the section her junior year. She also joined Mr. O'Rourke as a member of the Yale Drop Team, which works with NASA to provide students with the opportunity to experience near-zero gravity. But this year she withdrew from the club to focus on her senior project, involving dark matter, he said. "She's been working really hard on it for the entire year because she cares really deeply about it," he said. "Like everything else she was doing."

Chemical Fume Hoods

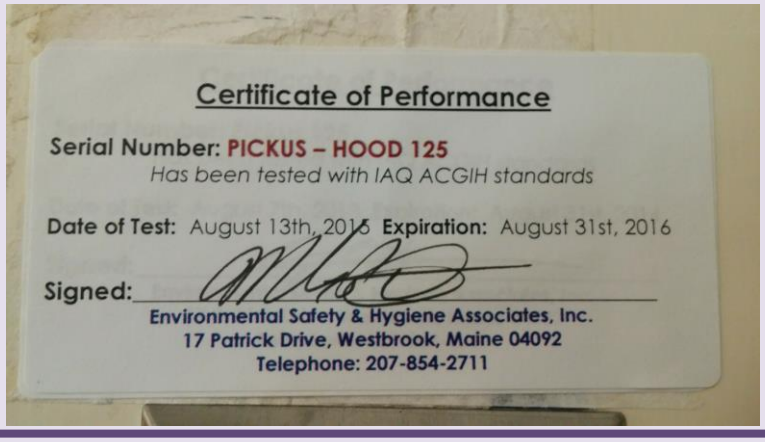
By Peter Nagle

The chemical fume hood is the primary engineering control used in laboratories to protect workers from chemical fumes. The OSHA Laboratory Standard (29 CFR 1910.1450) requires employers to take measures to assure that fume hoods are functioning properly. UNE tests the fume hoods quarterly and has them re-certified annually by an outside vendor. The annual certifications are posted on each hood just above the sash on either the right or left hand side. You should see the most current certification posted on your hood. It expires on August 31, 2016. If you see an expired certification posted, contact EHS and we will work to bring your hood into compliance.

Operators of fume hoods are also responsible for the proper functioning of their fume hoods. Make sure to do the following **when operating a fume hood:**

- Have the minimum amount of material needed to perform your work in the hood so as not to alter the airflow.
- Make sure nothing is obstructing airflow through the baffles or baffle exhaust slots.
- Elevate large equipment at least two inches off the work surface in order to maintain proper air circulation.
- Keep all materials in the hood at least six inches from the sash opening.
- Do not use fume hoods for permanent chemical storage. Fume hoods are for work only, not storage.
- Make sure the sash is open no more than 18 inches and not above the line marked on the sash frame.
- Never allow your head to enter the plane of the hood. If working with horizontal sliding sashes, keep the glass in front of your face and work around the side of the sash.
- Keep the hood work surface free from loose debris such as paper which can easily enter the exhaust ducts and reduce airflow.
- Promptly report any hood that is not functioning to Facilities or EHS.
- Ensure that your staff understands how to properly utilize the fume hood.
- Close the fume hood sash when you are done working in the fume hood.

Finally, do not become over confident with the fume hood's ability to protect you from the hazards of working with chemicals. Even when working in a fume hood, safety glasses, gloves and proper lab attire should always be worn.



◄ Each UNE fume hood should have a current certification sticker as seen here.

If yours does not, please contact EHS.

www.une.edu/campus/ehs

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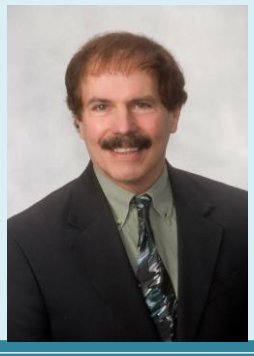
Please Welcome:

New Chemical Hygiene Officer, Donald Day Jr., College of Arts and Sciences

Education: B.A. Chemistry, Bowdoin College, Brunswick, Maine
Expertise: Chemical hygiene; industrial coatings; green chemistry; polymers; organosilicons
Biography: Don is a scientist/engineer who spent his career in the specialty coated papers industry. He is keenly interested in all aspects of laboratory methodology – especially safe practices and legal compliance. Don enjoys using his chemical background to "invent" new and improved everyday products that employ unique coatings to achieve certain properties.

Don enjoys both domestic and international travel and plans to experience new places and ventures. He also is a fan of theatrical productions and has seen a number of famous plays and musicals around the world. Although not fluent, Don has familiarity with the German language and utilizes it when traveling in Germany/Austria and with German speaking clubs in the area.



UNE Chemical/Equipment Sharing Listing

The UNE Chemical/Equipment Sharing Program is a great way to reduce hazardous waste, reduce costs for your department, and have a positive environmental impact on campus. If you have any commonly used lab chemicals or lab equipment you are considering disposing of, please contact EHS so they can be listed in the next issues of EHS Lab Chatter as available for the UNE Chemical/Equipment Sharing Program.

Chemicals/equipment currently available:

College of Pharmacy is offering: two cases of Erlenmeyer flasks that have never been opened. *Please contact EHS if you are interested. (First come, first serve).*