Department of Environmental Health and Safety

Safety BEACON

www.udel.edu/ehs
302-831-8475

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Sitting Pretty with Ergonomic Work Chairs

A comfortable and ergonomically-designed task chair is an essential workplace tool for those that spend several hours each work day seated at their desk. A proper chair, used correctly, minimizes stresses on the body. It also allows proper body alignment that reduces the risk of repetitive motion injuries.

Although all modern task chairs will have some adjustability features such as chair height, back tilt, and seat pan depth, no "one size fits all" chair exists because of the wide diversity in the human dimensions.

EHS maintains a collection of various ergonomic chairs to help UD employees select a chair that "fits" them. Employees can schedule an appointment to examine the various designs prior to purchase and can even borrow a chair for a few weeks so they can "test drive" the chair in their actual work location.

To schedule a time to examine the UD ergonomic chair collection, contact EHS at dehsafety@udel.edu. Chairs may also be viewed at the WB Mason showroom at 113 Interchange Boulevard in Newark. Contact Glenn Frazier, WB Mason representative, at 302-563-0429 for assistance while at the storeroom.

UMN Lab Explosion Lesson: Understand Hazards and Communicate Risks

The fume hood after the explosion. Credit: University of Minnesota

On June 17, 2014 an explosion in a chemistry lab at the University of Minnesota (UMN) injured a graduate student as he was synthesizing trimethylsilyl azide. University officials say the incident originated in a lack of hazard awareness and highlighted the need to identify hazardous processes and better communicate these hazards.

The synthesis was based on previously published methods but was altered in an attempt to eliminate production problems. At the time of the explosion, the injured student was not wearing personal protective equipment. The explosion left him with second-degree burns and glass injuries to his arm, side and an eardrum. The explosion also destroyed the experimental apparatus and hood.

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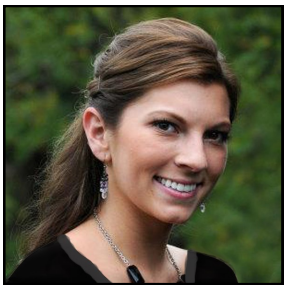
Who's New? / EHS Staff Changes

There have been a number of staff changes and additions to EHS recently.

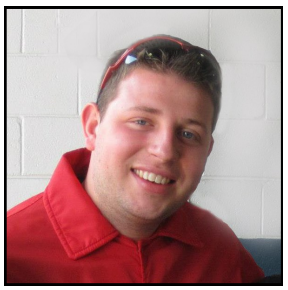


Dianna Harden is the new Administrative Assistant to the EHS staff. Dianna joined EHS in April 2013 as a miscellaneous wage employee and became a fulltime employee in April 2014. She graduated from Wilmington University in 2011 with a Bachelor's Degree in Business Management. Dianna is the first point of contact for EHS; she works at the front desk and provides customer service to our campus by dispatching emergency and non-emergency calls to our staff, scheduling EHS safety trainings for the campus community, and supporting the EHS staff with a wide range of administrative needs.

Elizabeth Cunningham joined EHS in July as an EHS Specialist. She is a graduate of Elizabethtown College and most recently worked for Weston Solutions in West Chester. Among her many duties, Elizabeth will be managing the department's fall protection, confined space, gas monitoring, and excavation programs along with consulting on other workplace safety issues. Elizabeth brings a broad range of real life experience that will enhance EHS programs, so be sure to say "Hi!" to Elizabeth when you see her on campus!

Kyle Kokoszka is the new EHS Fire-I/H Technician. Kyle comes to the department as a former miscellaneous wage Fire Inspector, Del-Tech Fire Protection Engineering student and volunteer firefighter with Middletown Volunteer Fire Department. Kyle will be working on the oversight of the campus fire extinguisher maintenance program, "Quality Assurance Inspector" for our dining and commercial cooking locations for hood and duct cleanings, and support with indoor air quality complaints. He is also active with semi-annual residence hall and public assembly fire/life-safety surveys and conducting fire drills. Having Kyle onboard has greatly enhanced the overall campus fire safety program.

Ann Woodall has been reassigned duties within the department and now will primarily support the radiation safety program and the office ergonomics program. She has provided administrative support as well as assisting with the waste management program and ventilation survey program. Ann will now be responsible for conducting radiation safety assessments, managing radioactive waste, calibrating radiation instrumentation, and distributing radiation dosimeters. Ann will also play an increasing role in the area of office ergonomics in the near future.



Arman Fardanesh has recently been promoted to the Biosafety Specialist position in EHS. Arman joined the department as a student intern assisting with the CPR program and was then hired as the Chemical Waste Senior Technician in 2011. In his new position, Arman will be managing the bloodborne pathogens program, infectious waste, and biosafety cabinet programs. He will continue to teach CPR classes and help manage the CPR/AED programs.

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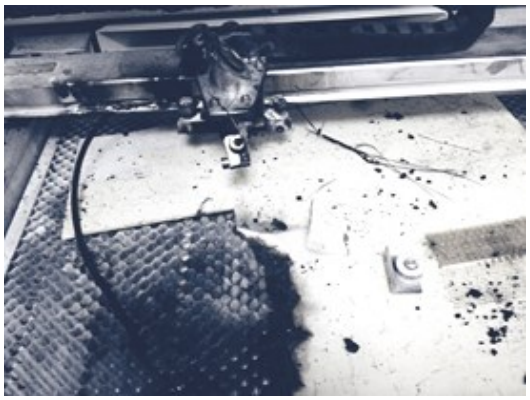
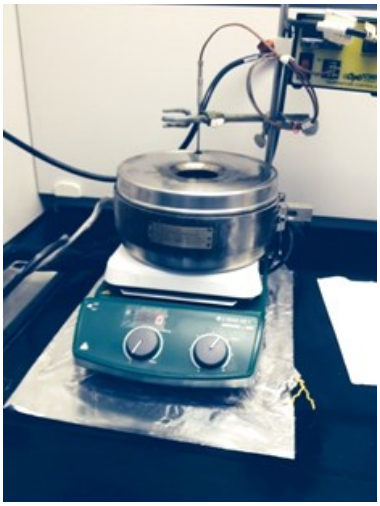
Report Fires Regardless of Size



A couple of recent fire incidents in UD research labs were typical of other past occurrences, in that the researchers were able to suppress the fires with a nearby fire extinguisher. While the prompt action by the lab staff was key to safely controlling and extinguishing these fires, these incidents had the potential to become much more serious.

EHS Fire Protection wants to remind everyone to notify UD Police of any fire incidents in the lab as soon as possible; ideally one person should contact the UDPD while another is attempting to extinguish the fire, if it can be done safely. The time lost by emergency responders due to delayed reporting can lead to an escalated fire event with disastrous results. During the most recent incidents, the fire was contained in the immediate area but not reported until days afterward. The delay in reporting fire incidents hinder investigations to determine the root causes and may reduce safety in the lab as there may be unseen damage to fume hoods or other equipment and there may not be an operable fire extinguisher for the lab. The primary goal of any fire incident investigation is to determine the cause of a fire with the goal to find solutions to prevent similar incidents; the goal of the investigation is not to cast blame on individuals involved.



The need for prompt reporting of fires isn't limited to just campus laboratories; all buildings are vulnerable. If a fire occurs, please call UD Police, alert fellow occupants, and use a fire extinguisher if you're properly trained and the fire isn't too large. Even if the fire is extinguished, you still need to contact the UD Police. Don't assume all is well once the fire is out as an underlying condition may resurface with more serious results.

EHS Fire Safety staff will be emphasizing the need to report all fires during fire safety/fire extinguisher training sessions with the various lab research and undergraduate groups in the months ahead. Please understand the importance and need to report all fires promptly, and initiate alarms and evacuate as needed.

Some Easy Ways Around Your Home To Help Protect The Environment:

- Prevent pollution in the stormwater runoff; use natural pesticides and herbicides on your lawn, but only if your lawn needs it- fertilizer running off our lawns during rainstorms introduces nutrients into our waterways causing harmful algal blooms which in turn can cause fish kills.
- A dripping faucet can waste 20 gallons of water a day. A leaking toilet can use 90,000 gallons of water in a month. Get out the wrench and change the washers on your sinks and showers.
- Pick up pet waste in the yard and dispose in the trash to prevent bacteria from reaching our streams during rainstorms.

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UMN Lab Explosion Lesson (continued from page 1…)

Investigators think that the explosion was caused from hydrazoic acid produced as an unrecognized product of the modified process.

The investigation also noted another root cause of the incident was insufficient recognition of the reaction's hazards. As the protocol was modified, the researchers didn't appear to understand how changes might affect the risk of the synthesis. Although literature protocols included warnings about hazards, they were not explicit enough. The investigators also felt the lab group became complacent after performing the reaction several times without incident.

The injured student noted that "I think that the biggest lesson that I have taken away from the experience is that though a synthetic procedure is well-documented in the literature, the inherent safety concerns may not be. A corollary of this is that researchers need to be sure that they are properly heeding the warnings that they do have, and properly recognizing the risk of everything that could go wrong in a particular synthesis, even if those risks seem unlikely."

UMN lab groups are now required to use "safe operation cards" on lab hoods to communicate who is running a reaction, what it is, and its hazards. Safe operation cards are similar to a program used by Dow Chemical to promote lab safety.

As a result of this incident the investigators have recommendations for the chemistry community at large:
1. Update risk assessment procedures to identify factors affecting the probability and severity of an energetic event occurring and to consider the capabilities of available safety controls.
2. Researchers should not assume journals include complete risk control information.
3. Encourage researchers to perform complete risk assessments on all potentially hazardous experiments.
4. Develop additional tools and training to help researchers assess the severity of consequences, probability of occurrence and capacity of controls.

Adapted from "More details on the University of Minnesota explosion and response" by Jyllian Kemsley in the July 30, 2014 edition of Chemical & Engineering News

Some Easy Ways Around Your Home To Help Protect The Environment (continued from page 3…)

- Use locally appropriate plants in your garden that are hardy and don't need a lot of water. Water your lawn and garden during the coolest part of the day or at night to minimize evaporation. Use rain barrels to collect rain water to water your lawn and garden.
- Plant a tree. Trees slow down stormwater run-off, clean the air, and shade your house to reduce cooling bills. Make sure trash cannot blow or fall out of trash containers so it does not become litter and wash down storm drains.
- When you wash your car, park it over grass to keep soapy water from flowing down driveways, into streets, and down storm drains. The soil in your yard will trap and filter the soap, and the soap won't harm your grass.

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A Dozen Tips to Allergy Proof Your House

Fifty million Americans (1 in 5) suffer from allergies. Here are 12 proactive environmental control measures for your home that may help relieve the suffering of allergy sufferers in your life:

1. Floors: Replace carpeting with wood, tile or linoleum particularly in bedrooms. Choose low pile carpeting or use washable area rugs. Keep grout between tiles to a minimum. Floors should be wet mopped regularly to keep the home as dust free as possible.
2. HEPA Vacuum: These vacuums with high efficiency filters are designed to capture small particles, dust mites and other allergens. Regularly vacuum curtains, upholstery, and carpeting including closets and under beds. Avoid venetian blinds and long curtains. Avoid broom sweeping; vacuum or wet wipe dust from hard surfaces.
3. Pets: Cats produce more dander than dogs; brush pet's coat outdoors. Bathe pets once a week; keep pets out of your bedroom. Keep pets off of furniture.
4. Plants: Limit the number of indoor plants. Keep outdoor plants trimmed and away from windows and HVAC in takes. Choose allergy-friendly plant varieties for inside your home and outdoors.
5. Bedrooms: Dust mites are microscopic bugs that can live by the millions in your bedding. They eat dead skin and produce allergic symptoms based on the waste they produce. Wash bedding at least once per week in hot water (>130°F) to kill dust mites. Cover mattress, box springs and pillows with dust-proof covers. Avoid feather pillows; Dacron pillows are preferred to foam rubber pillows.
6. Bathrooms: Use exhaust fans to control moisture. Soap scum/grout is a food source for mold. Remove carpet and wallpaper. Don't let damp linens sit in the hamper.
7. HVAC: Use filters that are MERV6 or better and replace them regularly. Vacuum dust on return grill surfaces.
8. Temperature/Relative Humidity: Set air conditioner to re-circulate to keep humidity below 50%. Use dehumidifiers in damp areas such as basements. Humidifiers can be a breeding ground for mold unless cleaned at least 1-2 times per week.
9. Children: Wash stuffed animals in hot water or put in plastic bag in freezer for 24 hours to kill dust mites.
10. Furniture: Avoid upholstered furniture (wood, metal, leather or plastic furniture is preferred).
11. Seasonal/Outdoors: Check daily pollen and mold counts and limit time/exercise outdoors accordingly. Keep doors/windows closed when cutting grass, landscaping, and during/after rain storms and damp conditions at night and early morning (high mold times).
12. Smoking: Do not smoke in your house.