ERM QUARTERLY

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PREPARING LABORATORIES FOR THE WINTER BREAK

Many laboratories will be shutting down temporarily as community members take well-deserved time off during the winter break. EHS provides guidance and assistance to ensure that CMU laboratories and equipment remain secure and safe during planned campus closures/ breaks. Please review the following before you leave to help prevent incidents from occurring while community members are away:

Planning

Prior to planned campus closures and breaks, Principal Investigator's (PIs) and/or their designees should perform a thorough walkthrough of their space(s) and review the following:

- **Critical equipment and materials**
  1. **High-value equipment** and loss prevention strategies to protect from cold temperatures, pipes bursting, flooding, and/or loss of power.
  2. **Research materials** (chemical, biological, or radioactive) that could be damaged by temperatures, pipes bursting, flooding, and/or loss of power.
- **Standard Operating Procedures (SOPs)** for shutting down critical equipment or processes, including temperature, pressure, or air sensitivity. Consider posting decals or signs on identified critical equipment with specific and visible instructions. Finally, consider identifying/specifying individuals who will be able to respond in the event of an emergency.

Shut-Down Considerations for Unoccupied Labs

Shut-down considerations for unoccupied labs should include proper equipment deactivation, energy conservation measures, and security protocols to ensure the safety of sensitive materials and maintain the integrity of the laboratory environment.

- Ensure that all experiments that need monitoring, are temperature or humidity-sensitive, or could be affected by loss of electricity, water or other services have been properly stopped and shut down. For any processes that **MUST** continue while you are away, please email EHS or call 412-268-8182.
- Perform a walkthrough of your lab space(s) to ensure that all containers, including hazardous waste, are tightly closed and sealed. Check the materials in your storage cabinets as well.
- Turn off and unplug all non-essential electrical devices, particularly heat-generating equipment such as hot plates, stir plates and ovens.
- Pull down fume hood sashes to about an inch from the bottom. This will help save energy and also retain hazardous material fumes should a bottle or container break within the hood.
- Close all windows to keep the cold air out and prevent the pipes from freezing.
  1. Consider covering high-value equipment that may be vulnerable to pipe leaks/bursts.
  2. Elevate equipment, supplies, electrical wires and chemicals off the floor to protect against flooding from broken pipes.
  3. Back up all data and turn off computers. Store lab notebooks and computers in areas where they will not be impacted by possible broken water pipes. Elevate or remove laptop computers and

other small electronic devices.

Research and Materials Protection
Each laboratory should develop a plan to protect laboratory equipment, materials, and research from loss and to prevent hazardous conditions from developing during the winter break.

- Ensure that water-reactive chemicals are in sealed containers and stored in areas unlikely to become wet.
- Ensure that air-reactive chemicals are properly stored.
- Ensure that all gas and vacuum valves are closed.
- Ensure that all water is turned off, such as circulating water baths and water aspirators.
- Ensure that all gas tanks are secured. Close tanks and, if possible, remove regulators and place protective caps on tanks. **NOTE:** Leave inert gases flowing if they are being used to blanket reactive chemicals.
- Secure all non-infectious material and toxins in appropriate storage units marked with a biohazard sticker. Disinfect all potentially contaminated surfaces and properly dispose of all biohazardous waste.
- Review storage of biological materials and other perishable items. Place valuable items in storage units that have backup systems or store items in duplicate locations. Review safety and other issues using alternate cooling methods (e.g., liquid nitrogen, dry ice, etc.).
- Turn off biological safety cabinets and UV lights.
- Ensure that critical freezers are plugged into emergency back-up outlets, if available. Consider an alternate plan if not available.
- Ensure that all refrigerator, freezer and incubator doors are tightly closed.
- Close all doors, including cabinets, storage areas, and offices. Lock all exterior lab doors.

Please refer to the Laboratory Planned Closure Checklist if you have any questions or need any clarification on how to prepare your lab for the winter break.

Thank you in advance for your efforts to fully prepare for the upcoming winter break and taking the necessary steps to ensure the health and safety of all laboratory personnel and the entire community. ◆

NOVEMBER ACTIVE THREAT EXERCISE

On Monday, November 20th, Enterprise Risk Management (ERM), in collaboration with University Police, conducted the first of a two-phased active threat exercise. This first phase was focused on a police response to an active threat on campus.

University Police ran through multiple scenarios to practice their tactics and procedures at an off-campus location. Members of the University's Emergency Preparedness and Response Team (EPRT) were in attendance to observe and gain insight into how these situations develop and review their assignments and procedures to assist during an active threat on campus. The EPRT is comprised of key individuals from several divisions, departments and colleges. They come together to act as an information hub through the Emergency Operations Center (EOC) and provide guidance on decision making to University Leadership.

The second phase of the exercise, scheduled for January 2024, will dive deeper into the roles and responsibilities of individuals on the EPRT, while also addressing the response after an active threat has been mitigated. ◆

Members of the University's Emergency Preparedness and Response Team (EPRT) taking part in the Active Threat exercise


Chuck Carney from University Communications and Marketing and Jennifer Bett from Enterprise Risk Management monitoring the events of the Active Threat Exercise from inside the Mobile Command Unit

ELECTRONIC WASTE RECYCLING EVENT

In support of CMU's Sustainability Initiative, Environmental Health and Safety (EHS) sponsored an electronics recycling event the week of Monday, November 13th through Saturday, November 18th. EHS coordinated with various departments through the Green Practices Committee to host collection bins. Community members brought items to the collection bins or scheduled a vehicle drop off at the Roberts Hall Loading dock.

Under the "Covered Device Recycling Act", the Commonwealth of Pennsylvania Department of Environmental Protection requires the proper disposal of computers and all computer peripherals. These devices are comprised of toxic materials and heavy metals which can leach into the soilcontaminating the air and waterways. Proper disposal and recycling can save natural resources, conserve energy and reduce pollution. To meet this end, EHS manages the CMU Electronic Waste Program to ensure the proper disposal of covered devices.

During the week-long event, there were 11 collection bins placed throughout campus and a vehicle drop-off site at the Roberts Hall Loading Dock. The event was extremely successful in collecting **7200 pounds** of electronics from the campus community. Electronic items collected included:

- Computer Monitors
- TV, tube televisions up to 26"
- Laptops
- Printers
- Home Phones & Cell Phones
- Mice & Keyboards
- Servers, Routers & Modems

The top contributing departments included Material Science and Engineering, Civil and Environmental Engineering, and Computing Services. All electronics were disassembled and managed through CMU's electronic waste management third party service provider.

As a reminder, all university owned electronic assets should be managed through the CMU Electronic Waste Program in accordance with CMU's sustainability and green practices. Please contact EHS with questions via safety@andrew.cmu.edu. ◆

Electronic Waste Collection Bin inside Cyert Hall


Electronic Waste Collection Bins at the Roberts Hall loading Dock

NEAR MISS REPORTING

Environmental Health and Safety (EHS) continues to foster a culture of safety through the implementation of a new online Near Miss Reporting form. This reporting process allows university community members to report potential hazards, close calls and near misses through an accessible and efficient online platform.

Improved Response Times:
The Near Miss Reporting Form streamlines the reporting process, allowing EHS to receive real-time notifications of near miss incidents. This enables prompt response, ensuring that potential hazards are mitigated swiftly, reducing the likelihood of future incidents and injuries.

Data-Driven Decision Making:
The form generates valuable data that EHS can analyze to identify root causes, patterns, and trends. By understanding the types of near miss incidents that occur on campus, EHS can assist departments in making data-driven decisions to address specific safety concerns, leading to safety improvements.
The implementation of an online Near Miss Reporting form demonstrates an improvement in campus safety. By encouraging open communication, EHS along with community members, can create a safer environment for everyone. ◆

HYDROFLUORIC ACID SAFETY

Earlier this semester, a laboratory staff member etching glass with 16% buffered Hydrofluoric acid (HF) in a fume hood splashed a small droplet of the acid onto their eyelid. They felt the droplet and immediately started rinsing their eyelid with water, careful not to get contaminated water into their eye. After a few minutes, they retrieved calcium gluconate gel from their HF first aid kit and began applying it on their eyelid. After notifying EHS and University Police, they were provided with emergency response instructions and referred to a healthcare professional for evaluation. Thankfully, they were cleared by healthcare professionals and did not experience any adverse effects.

Hydrofluoric acid (HF) has several chemical, physical and toxicological properties, which make it especially hazardous to handle. Hydrofluoric acid is an extremely corrosive acid used for many purposes including mineral digestion, surface cleaning, etching, and biological staining. Both Anhydrous Hydrofluoric acid and aqueous solutions are clear, colorless and highly corrosive liquids. HF's unique properties, including systemic toxicity, make it significantly more hazardous than many other acids. All forms, including the solution or the vapor can cause severe burns to tissue and cause serious systemic effects.

HF is a health hazard that can readily absorb through the skin, destroying and decalcifying soft tissue and bone. Concentrations above 50% will burn immediately. One of HF's insidious properties is that concentrations lower than 20% may not produce immediate pain or burning. It is this delayed awareness of exposure that poses the most serious risk of HF. HF exposure to the eyes may result in blindness or permanent eye damage. Inhalation of HF vapor can seriously damage the lungs and may cause fatal pulmonary edema (lungs flooding with fluid). Chronic (long term exposure) of low concentrations to HF may cause fluorosis; a syndrome characterized by weight loss, bone embrittlement, anemia, and general ill health.

If you work with HF, it is important that you do the following:

- Be aware of its properties and dangers
- Receive EHS safety training. The training covers safe handling procedures, safety precautions and the specifics of the HF Program
- Ensure all engineering controls are in place and properly operating
- Wear personal protective equipment – lab coat, splash goggles/face shields and Stanzoil Neoprene/ Nitrile gloves
- Never work alone; a trained user must be present
- Never work with Hydrofluoric Acid before 8:00 a.m., after 5:00 p.m., or on weekends
- Inspect your Spill/Exposure Kit prior to working with the material
- Know the location of your eyewash and safety shower and make sure they are inspected and not obstructed
- Follow the EHS Hydrofluoric Acid Spill and Splash Guidelines and Procedures, available in your HF First-aid Kit

Email EHS or call (412) 268-8182 to report the accident/incident involving HF, for any HF spill cleanup, or if you have any question or require more information regarding HF spill and exposure response. ◆

SAFE TRAVELS

Since Spring of 2022, International SOS (ISOS) is available to all members of the CMU community traveling internationally on university business at no cost.

ISOS is the world's leading medical and travel security services company that provides 24/7 access to doctors, security experts and assistance coordinators. Examples of services include, but are not limited to, health, security, or travel advice and consultations, confidential emotional support, emergency evacuation and repatriation, referral of local providers for services such as ground transportation, medical facilities, vetted accommodations and emergency assistance.

When you book your travel through Collegiate Travel Planners (CTP) , the university's preferred travel service provider, you are automatically registered with ISOS. If there is an emergency situation or disruption at or near your destination during your travels, ISOS will send notifications to keep you informed, but may also reach out to you via text or email to see if you need assistance.

Enterprise Risk Management's (ERM) Travel Risk Management Program provides a wealth of resources including other ways to register your travel with ISOS, access to the ISOS portal and links to other university travel resources. ERM also provides training and guidance regarding travel safety including situational awareness, insurance coverages, and rental vehicle considerations. Contact ERM at Risk-Ops@andrew.cmu.edu for more information.

Download the ISOS App Today

Even if you are not traveling internationally, the International SOS Assistance App is a critical tool in your safety toolkit, no matter where you are. A 24-hour companion for travel, the App provides access to vital information on your current location or travel destination, including country guides and information about ongoing and developing medical and security situations.

Available from the Apple or Google Play stores now. ◆

ENSURING A SAFE HOLIDAY SEASON: ESSENTIAL TIPS FOR STUDENTS

The holiday season brings joy and festivity, but it's crucial to prioritize safety during this time. As campuses quiet down and students prepare to spend time away, adopting a proactive approach to personal safety and the security of belongings becomes paramount. Here are some essential tips to ensure a safe and enjoyable holiday season on college campuses.

Secure Your Residence:
Before leaving for the holidays, double-check that your dorm or apartment windows and doors are securely closed and locked.

Safeguard Valuables:
Take important belongings, such as laptops, tablets, and other valuable items, home with you if possible. If you must leave them behind, consider using a secure locker provided by the university. Register any expensive items with University Police to aid in recovery in case of theft.

Travel in Groups:
If you're heading off-campus for holiday events or travel, make a habit of traveling in groups, especially during the evening. Utilize well-lit pathways and familiar routes, and always let someone know your plans and expected return time.

Be Mindful of Personal Information:
During the holiday season, there may be an increase in social events and gatherings. Be cautious about sharing personal information, especially on social media. Avoid advertising your travel plans, and be selective about what you post online to protect your privacy.

Responsible Celebrations:
If you choose to celebrate the holidays with friends or attend parties, do so responsibly. Know your limits when it comes to alcohol consumption, never leave drinks unattended, and always have a plan for a safe ride home. Encourage others to do the same and intervene if you see someone in need of assistance.

Emergency Preparedness:
Familiarize yourself with emergency procedures and the location of emergency exits in your residence hall or apartment. Keep important contacts, such as campus security and local emergency services, saved in your phone. Consider downloading RAVE Guardian, which can provide real-time information and alerts.

Stay Informed:
Before leaving for the holidays, stay informed about any campus-specific safety advisories or updates. Check your university email and official social media channels for important announcements or changes in campus security measures.

By taking a proactive approach to safety and security, you can enjoy a worry-free holiday season. Whether on or off-campus, implementing these tips ensures a safe and memorable break, allowing you to return in the New Year with peace of mind and a refreshed focus. ◆

'TIS THE SEASON FOR SAFETY: HOLIDAY FIRE PREVENTION TIPS

As the holiday season approaches, the festive atmosphere on our campuses comes alive with decorations, gatherings and the warmth of celebration. However, amidst the joy, it's crucial to prioritize fire safety to ensure a happy and hazard-free holiday. Here are essential tips to keep our campus community safe from the risk of fires during this festive timemedical facilities, vetted accommodations and emergency assistance.

Mindful Decorations:
Decking the halls with festive decorations is a cherished tradition, but it's important to do so safely. Opt for flame-resistant or flame-retardant decorations and keep them away from heat sources such as space heaters.

Holiday Trees:
If you are planning to have a decorative tree in your office space or building, remember that live winter greens and trees are prohibited inside any housing building or dorm room. In academic or administrative buildings, the use of a live tree is subject to the approval of EHS. Please contact EHS for approval.

Cooking Safety:
Holiday gatherings often involve cooking and baking. If you're preparing a festive feast, never leave cooking unattended, and use a timer to remind you when dishes are ready. Keep flammable items, such as kitchen towels and oven mitts, away from the stove, and have a fire extinguisher within easy reach.

Electrical Safety:
With the array of holiday lights and electronic decorations, it's crucial to practice electrical safety. Avoid overloading outlets, use power strips with built-in surge protectors, and inspect lights and cords for any damage before use. Unplug decorations before leaving your room or office to reduce the risk of electrical fires.

Space Heater Caution:
As temperatures drop, space heaters become a common sight. If you use a space heater, keep it at least three feet away from flammable materials such as curtains, bedding and furniture. Turn it off when leaving the room or office, and never leave it unattended.

By following these fire safety tips, we all can enjoy a festive and worry-free holiday, ensuring that the season is marked by joy and not by preventable fire hazards. Stay safe, stay festive and have a happy holiday! ◆

ERM COMMUNITY ENGAGEMENT EVENT

On Tuesday, October 31, ERM set up a table outside of the CUC to engage with the CMU community. More than 100 community members stopped by the table to engage with ERM team members and were provided with an overview of ERM's services, information about RAVE Guardian, which gained 61 new subscribers, and the EHS Instagram page, which gained 55 new followers. In addition, table visitors were offered muffins, doughnuts, hot apple cider and branded items like magnets and hand sanitizer.

ERM is here to support the entire community to ensure a safe and successful CMU experience. If you have any questions about the services offered, please contact EHS, and look out for similar ways to engage with ERM in the coming months. ◆

Rebecca Cicco and Andrew Lawson engaging with students during the event

Eric Wharton instructing a student on fire extinguisher use during the event

WHAT SAFETY MEANS TO ME

Creating a Culture of Safety

Matthew Moneck, Executive Director, ECE Nanofabrication Facility

Matthew Monek, Executive Director, ECE Nanofabrication Facility, understands the importance of safety. When recently asked why safety is so important, he provided the following answer:

"My career as an experimental researcher has spanned more than 25 years, and throughout that time, safety has been paramount. For me, safety is a culture. Safety practices should not simply be "something we have to do," as many people view them. Safety should be a culture we live by and impress upon others. It should not be viewed as a hindrance to our work, but rather a way to facilitate our mission and further our research goals.

During my career as a student and staff, I have worked in numerous labs with hazards ranging from chemicals and compressed gases to lasers, electrical, mechanical, thermal, and more. Having been exposed to such a variety of hazards, I have also had the unfortunate experience of witnessing numerous accidents firsthand or seeing the aftermath of serious accidents. Many of those accidents were the result of taking shortcuts in the interest of "saving time," with the end result often being time and/or work lost. In most of those cases, the accidents and the resulting loss of time or work could have either been prevented or the impact lessened through simple preparedness and awareness, where preparedness includes both risk analysis and procedural planning. In many cases, this simply comes down to performing a mental check to determine what hazards exist, how you plan to execute the tasks at hand, what might go wrong, and what you would do should something go wrong. Always go into a hazardous situation with a plan!

We apply and teach these principles in the Bertucci Nanotechnology Lab, where we have more than 150 researchers and staff per year from a diverse set of engineering and science disciplines working in an environment containing a variety of hazards. Our goal is to create an inclusive environment where everyone feels comfortable and safe when conducting their research despite those hazards. We accomplish this by promoting safety culture as a community. It is engrained in all aspects of our work and training. Our highly qualified staff interact with members of the community on a regular basis to ensure we are meeting their needs and to address concerns, especially those which may be safety related. We also encourage members of the community not to make assumptions, but to ask questions regularly and to look out for one another. In many cases, members of our community even act as safety buddies to ensure a safe working environment. It truly is a cultural effort.

Whether you work in a small group or a large, shared research facility, I encourage everyone to make safety a part of your culture and share that culture with others. One of the dangers we face in life, and especially in research, is the fact that we do not know what we do not know. Therefore, it is important to ask questions and interact with others in the community. Much of what I have learned, both in research and safety is a result of such interactions, and at the end of the day, we can all find ways to operate safely and be productive at the same time." ◆

FOLLOW EHS ON INSTAGRAM

Follow us as we share activities and inspiring stories and highlight the dedicated individuals who work tirelessly to ensure your safety. We will also share important updates on safety protocols, emergency preparedness and helpful resources for personal safety. Together, let's create a safe and thriving campus community. Join us on Instagram and be a part of the conversation. ◆

ERM WOULD LIKE TO HEAR FROM YOU!

We encourage all members of the Carnegie Mellon University community to submit safety improvement ideas that enhance personal safety on campus or the safety of the greater community. Your participation will help raise safety awareness! Please submit your safety concerns and ideas to safety@andrew.cmu.edu.

If you have any suggestions for our next newsletter, please submit your ideas to Mary Sickles at msickles@andrew.cmu.edu. ◆

SEE SOMETHING? SAY SOMETHING!

If you see something suspicious, help ensure the safety and well-being of the CMU community by calling the CMU Police Department at 412-268-2323 or CMU's Ethics Hotline at 877-700-7050. ◆

CMU SAFE
See Something. Say Something.