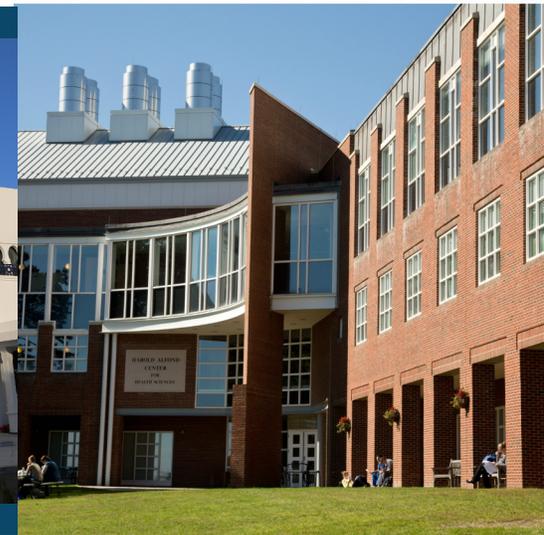
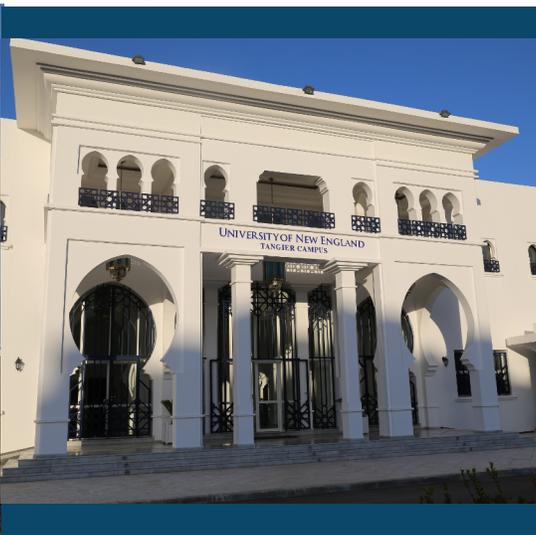
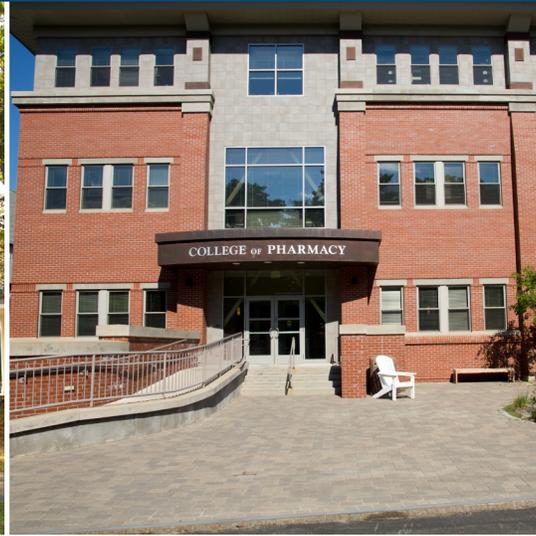


# EHS Lab Chatter



# CONTENTS

Page 1.....Contents and Contact Us

Page 2.....Safety Spotlight: Five Tips To Help Manage Stress

Page 3.....Lab Safety Rules Pictogram From Carolina

Page 4.....Waste Satellite Accumulation Areas (SAAs):  
Weekly Inspection (7-Day) Requirement Explained

Page 5.....What Is A RCRA Hazardous Waste?

Page 6.....RCRA Hazardous Waste Continued

Page 7.....RCRA Hazardous Waste Continued

Page 8.....Considerations For Shared Lab Spaces

Page 9.....Protecting Our Planet Starts With You (NOAA)

Page 10.....Reminder: Chemical Spill Kit Use

Page 11.....UNE Chemical Sharing Program: **Items available!!**

## Contact Us



**Ronnie Souza,**  
Director of EHS

UNE Extension: 2488

Cell: 207-391-3491

Email: [rsouza@une.edu](mailto:rsouza@une.edu)



**Peter Nagle,**  
EHS Specialist

UNE Extension: 2791

Cell: 207-468-1786

Email: [pnagle@une.edu](mailto:pnagle@une.edu)



**Jessica Tyre,**  
EHS Specialist

UNE Extension: 2046

Cell: 603-244-0081

Email: [jtyre@une.edu](mailto:jtyre@une.edu)

# Safety Spotlight

## Five Tips To Help Manage Stress



### From The American Psychological Association

Stress occurs when you perceive that demands placed on you — such as work, school or relationships — exceed your ability to cope. Some stress can be beneficial at times, producing a boost that provides the drive and energy to help people get through situations like exams or work deadlines. However, an extreme amount of stress can have health consequences, affecting the immune, cardiovascular and neuroendocrine and central nervous systems, and take a severe emotional toll.

Untreated chronic stress can result in serious health conditions including anxiety, insomnia, muscle pain, high blood pressure and a weakened immune system. Research shows that stress can contribute to the development of major illnesses, such as heart disease, depression and obesity.

But by finding positive, healthy ways to manage stress as it occurs, many of these negative health consequences can be reduced. Everyone is different, and so are the ways they choose to manage their stress. Some people prefer pursuing hobbies such as gardening, playing music and creating art, while others find relief in more solitary activities: meditation, yoga and walking.

Here are five healthy techniques that psychological research has shown to help reduce stress in the short- and long-term.

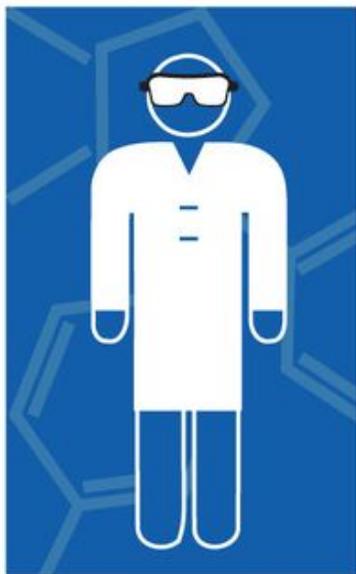
**Take a break from the stressor.** It may seem difficult to get away from a big work project, a crying baby or a growing credit card bill. But when you give yourself permission to step away from it, you let yourself have time to do something else, which can help you have a new perspective or practice techniques to feel less overwhelmed. It's important to not avoid your stress (those bills have to be paid sometime), but even just 20-minutes to take care of yourself is helpful.

**Exercise.** The research keeps growing — exercise benefits your mind just as well as your body. We keep hearing about the long-term benefits of a regular exercise routine. But even a 20-minute walk, run, swim or dance session in the midst of a stressful time can give an immediate effect that can last for several hours.

**Smile and laugh.** Our brains are interconnected with our emotions and facial expressions. When people are stressed, they often hold a lot of the stress in their face. So laughs or smiles can help relieve some of that tension and improve the situation.

**Get social support.** Call a friend, send an email. When you share your concerns or feelings with another person, it does help relieve stress. But it's important that the person whom you talk to is someone whom you trust and whom you feel can understand and validate you. If your family is a stressor, for example, it may not alleviate your stress if you share your work's woes with one of them.

**Meditate.** Meditation and mindful prayer help the mind and body to relax and focus. Mindfulness can help people see new perspectives, develop self-compassion and forgiveness. When practicing a form of mindfulness, people can release emotions that may have been causing the body physical stress. Much like exercise, research has shown that even meditating briefly can reap immediate benefits.



# Lab Safety Rules

Science labs offer great opportunities for learning, teaching, and research. They also pose hazards that require proper safety precautions.



**Stay safe when conducting your labs by following these guidelines.**



## Dress appropriately

Tie back long hair, and wear suitable gloves, goggles, and other protective equipment.

## Proper supervision

Don't perform lab experiments without instructor supervision (unless given permission to do so).



## Know location of emergency numbers & safety equipment

Know the location of safety equipment and emergency phone numbers (such as poison control) so you can access them quickly if necessary.



## No food

Don't eat or drink in the lab—and never taste chemicals.



## ID hazards

Identify hazardous materials before beginning labs.



## Be attentive

Be attentive while in the lab. Don't leave lit Bunsen burners unattended or leave an experiment in progress.

## Be careful when handling hot glassware

Turn off all heating appliances when not in use. Keep flammable objects away from your workspace.



## Keep a clean workspace

Don't obstruct work areas, floors, or exits. Keep coats, bags, and other personal items stored in designated areas away from the lab. Don't block sink drains with debris.



## Handle glassware carefully

Properly dispose of anything that breaks. Report cuts, spills, and broken glass to your instructor immediately.



## Clean up

After completing the lab, carefully clean your workspace and the equipment, and wash your hands.

Sources: Carolina Biological Supply Company, "Lab Safety Dos and Don'ts for Students." <http://www.carolina.com/teacher-resources/Interactive/lab-safety-instructions/tr11076.tr>.

**CAROLINA**  
www.carolina.com

# Waste Satellite Accumulation Areas (SAA)

## Weekly Inspection (7 day) Requirement Explained

by Peter Nagle

With the start of the new semester many of you will be re-opening your Satellite Accumulation Areas (SAAs). Since there will be a few new people managing the SAAs this semester, I'd like to do a brief review of the weekly inspection requirement.

### Requirement

SAA inspections must be done weekly. The Maine Department of Environmental Protection (DEP) interprets weekly as once every 7 days rather than a calendar week. For example, if you do an inspection on Tuesday January 15th, then the next inspection is due the following Tuesday the 22nd. If you do the inspection on Wednesday or later, then the SAA will be in violation of the weekly inspection requirement. A good practice is to do the inspection on the same day each week.

### Holidays

An upcoming holiday does not change the 7 day requirement. If a holiday falls on the day your weekly inspection is due, then additional inspections are required in order to avoid a violation. A good practice in this case would be to do an inspection just before the holiday and one right after in order to stay in compliance. The regular inspection schedule can be resumed the following week.

### Vacations & Other Planned Absences

If you are going away for more than 7 days, whether for vacation, conference, or other planned absence, then you must ensure that the inspections are still done once every 7 days. A trained individual such as lab technician, Chemical Hygiene Officer, or another qualified individual can do the inspections in your absence. All SAAs must have a secondary person that can do the inspections in case the primary inspector is out. Make sure the secondary inspector has completed the Hazardous Waste Blackboard Training module beforehand. If no one is available to do the inspections during your absence, then the SAA must be shut down and all hazardous waste containers transferred to the Main Accumulation Area (MAA) before you leave. Make sure to contact EH&S if you plan on closing the SAA. The station can be re-opened upon your return.

### Exceptions

Occasionally a sudden illness, family emergency or unexpected school closing may prevent you from meeting the 7 day requirement. If you are unable to do the inspection within 7 days, then state the reason in the remarks section of the log located either on the reverse side or on a second page. Keep in mind that only unforeseen events are valid reasons for delaying or missing the weekly inspection. In this case the inspection must be done as soon as possible by either the primary or secondary inspector.

### Responsibility

Remember, it is ultimately the responsibility of the principal investigator (PI) or lab manager to make sure the inspections are completed once every seven days. All SAAs must be located at or near the point of generation and under the control of the operator. In all cases these are locations in research or academic labs that are managed by a PI or lab manager.

# What Is A RCRA Hazardous Waste?

By Ronnie Souza

The Resource Conservation and Recovery Act (RCRA) governs the management of hazardous wastes. To be considered a hazardous waste, a material first must be classified as a solid waste (40 CFR §261.2). EPA defines solid waste as garbage, refuse, sludge, or other discarded material (including solids, semisolids, liquids, and contained gaseous materials).

If a waste is considered solid waste, it must then be determined if it is a hazardous waste (§262.11). Wastes are defined as hazardous by EPA if they exhibit one of four characteristics located in Subpart C of Part 261 (characteristic wastes) or if specifically named on one of four lists of hazardous wastes located in Subpart D of Part 261 (F, K, P, U).

## Characteristic Wastes

A waste stream is classified as a hazardous waste if it exhibits one of four characteristic described in Part 261, Subpart C: ignitability (D001), corrosivity (D002), reactivity (D003) and toxicity (D004-D043).

**Ignitability** - Ignitable wastes create fires under certain conditions, or are spontaneously combustible, or have a flash point less than 60 °C (140 °F). The characteristic of ignitability is found at 40 CFR §261.21.

**Corrosivity** - Corrosive wastes are acids or bases (i.e. pH less than or equal to 2, or greater than or equal to 12.5) that are capable of corroding metal containers, such as storage tanks, drums, and barrels. The characteristic of corrosivity is found at 40 CFR §261.22.

**Reactivity** - Reactive wastes are unstable under "normal" conditions. They can cause explosions, toxic fumes, gases, or vapors when mixed with water. The characteristic of reactivity is found at 40 CFR §261.23.

**Toxicity** - Toxic wastes are harmful or fatal when ingested or absorbed (e.g., containing mercury, lead, etc.). When toxic wastes are disposed of on land, contaminated liquid may drain (leach) from the waste and pollute ground water. Toxicity is defined through a laboratory procedure called the Toxicity Characteristic Leaching Procedure (TCLP). The toxicity characteristic is found at 40 CFR §261.24.

## Listed Wastes

Wastes are listed as hazardous because they are known to be harmful to human health and the environment when not managed properly, regardless of their concentrations. EPA has studied and listed as hazardous hundreds of specific industrial wastestreams. These wastes are described or listed on four different lists that are found in the regulations at Part 261, Subpart D. These four lists are:

**The F list** - The F list designates as hazardous particular wastes from certain common industrial or manufacturing processes. Because the processes producing these wastes can occur in different sectors of industry, the F-listed wastes are known as wastes from non-specific sources. The F list is codified in the regulations at 40 CFR §261.31.

**The K list** - The K list designates as hazardous particular wastestreams from certain specific industries. K-listed wastes are known as wastes from specific sources. The K list is found at 40 CFR §261.32.

**The P list and the U list (Discarded Commercial Chemical Products)** - These two lists are similar in that both list pure or commercial grade formulations of certain specific unused chemicals as hazardous. Both the P list and U list are codified in 40 CFR §261.33. A P or U waste code may be applicable, provided that the material is an unused commercial chemical product (CCP). A CCP is a substance that consists of the commercially pure grade of the chemical, any technical grades of the chemical, and all formulations in which the chemical is the sole active ingredient (§261.33(d)).

RCRA hazardous waste continued...

Generators (employers and employees) are responsible for characterizing their waste as hazardous and must determine whether a waste exhibits a characteristic by either testing or applying knowledge of the hazardous waste characteristic of the waste (§262.11).

In addition to federal RCRA hazardous waste identification rules we have outlined, most states are authorized to operate their own hazardous waste programs and may have more stringent rules than those of the federal hazardous waste management program. For instance, a state may impose more stringent regulations for hazardous waste identification or identify state-specific hazardous wastes.

If wastes are not listed or do not exhibit any hazardous waste characteristics, they are considered nonhazardous solid waste (as opposed to hazardous wastes). Nonhazardous solid waste disposal and recycling is regulated on a state level. Therefore, you may wish to contact UNE EHS Department for more information on solid waste management.

### **Are You Properly Managing Your RCRA Hazardous Waste?**

#### **What is a satellite accumulation area?**

A satellite accumulation area is an area at or near any point of generation where RCRA hazardous waste initially accumulates and that is under the control of the operator of the process generating the waste. A generator may accumulate up to fifty-five gallons of hazardous waste or one quart of acutely hazardous waste at a satellite accumulation area (40 CFR 262.34(c)).

Inspectors from the Maine Department of Environmental Protection perform un-announced inspections at businesses that generate hazardous waste. State inspectors observe many of the same violations of hazardous waste regulations because employees are not aware of requirements, do not understand them, and cut corners. Here are some of the most frequent hazardous waste management mistakes found by State inspectors that you don't want to make (in no particular order).

#### **1. Lack of a proper waste determination**

While this is one of the most frequently cited violations, it is also a fundamental management issue. Failure to properly identify a waste stream leads to numerous additional violations. Examples include "orphan" containers of an unknown substance, containers of products for which there is no apparent use, and contaminated wipes, rags and filters. You must have procedures for identifying all materials and conducting waste determinations before (or at the time of) waste generation.

#### **2. Conduct a SAA inspection every 7 Days**

Frequent inspections (every 7 days) will keep you apprised of any potential problems – like leaking or staining from containers, poor container condition, and improper labeling. Always initial and date the SAA inspection logbook every 7 days.

#### **3. Satellite containers of hazardous waste not properly managed**

The use of satellite containers to accumulate hazardous waste is common. However, it is a violation to store satellite containers in areas that are not "at or near" the process or under the operator's control or with an amount greater than 55 gallons (or greater than 1 quart of liquid acute hazardous waste or 1 kg (2.2 lbs) of solid acute hazardous waste.)

#### **4. Containers not marked with the words "Hazardous Waste"**

Containers accumulating hazardous waste must be marked with the words "Hazardous Waste."

### 5. Hazardous waste container contents not properly identified

Containers accumulating hazardous waste must be marked with the proper chemical name as well as the hazard associated with the waste inside, i.e. Hydrochloric Acid Corrosive, Ethanol Flammable. Abbreviated chemical names and chemical formulas are not acceptable.

### 6. Hazardous waste containers not closed

A container holding hazardous waste must always be closed, except when it is necessary to add or remove waste. It is an easy violation to commit if you are not careful. Always keep containers closed.

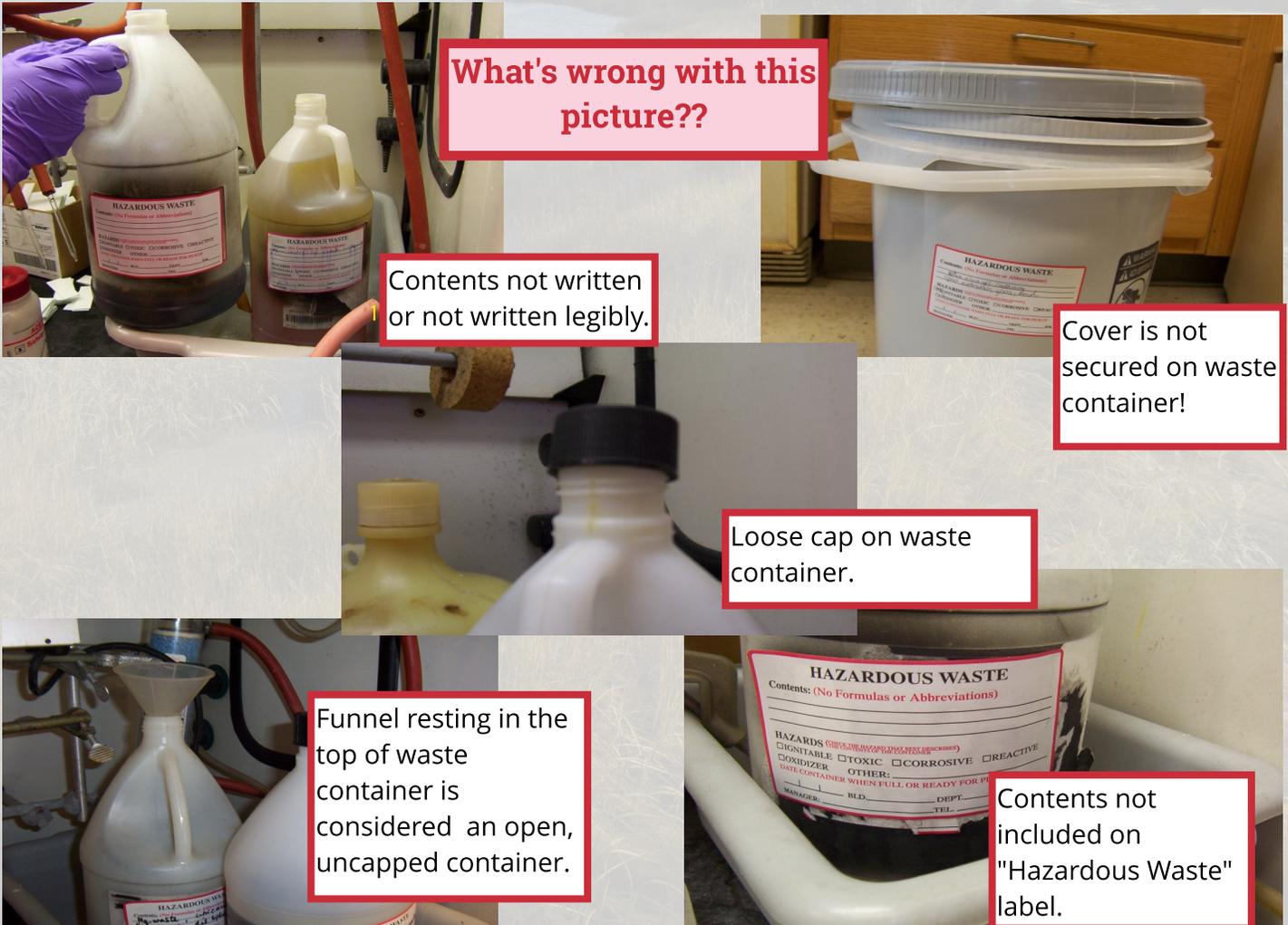
### 7. Hazardous waste containers not in good condition

Keep your containers in good condition. This is an invaluable step, as maintaining the quality of your containers is the best (and easiest) way to prevent a spill. This check-up should be done both before and after waste is added to containers, and determine whether corrosion, dents, or leaking is present. If a problem like this occurs, it is essential that the waste is moved from that container to one in good condition.

### 8. Incompatible wastes not separated

Always separate your incompatible wastes. Separating incompatible wastes with a physical barrier prevents the materials from reacting in ways that might cause them to burn, explode, produce poisonous gases, or cause other problems.

**If you are not sure if your waste is being properly managed contact the UNE Environmental Health & Safety Department at # 2488, and request assistance in managing your waste.**



# Considerations for shared lab spaces

By Jessica Tyre

There are many reasons that researchers may have to share lab spaces in their facilities such as spatial allowances, financial issues, or research being similar or even connected. Whatever the reason is for having to share lab space, it is important to be mindful about safety and security in your space and the other researcher's space. Below are a few items to take into considerations when sharing a lab space.

**1) Understand what chemicals are being used/stored nearby and what their hazards are.** Other researchers may be using chemicals that are more hazardous or contain different hazards than what you are used to working with. To get more information on what others are using for their work you should communicate openly with the other room occupants on what you are both using and storing. It is recommended that PI's have their own chemical storage areas and cabinets, but if you are sharing chemical storage areas, you must label the container with your name so it is clear who it belongs to. SDSs are also a useful tool you can provide to lab staff you are sharing a lab with so they can be more informed.

**2) Identify what biological agents are being used/stored in the lab area.** Like chemicals, different biological agents may have hazards that you are not familiar with. It is important that you understand the limitations of handling these agents and what areas of the lab you should not be accessing.

**3) Verify you have the same security protocols.** Researchers guard their work closely and need to have a restricted area for their work so that it is not contaminated. Sharing a lab means that you have to agree on security policies and procedures such as who is allowed to be in the space, hours of occupancy, what types of locks/doors are used on the space, etc.

**4) Manage hazardous waste accumulation areas carefully.** Each PI should have their own hazardous waste satellite accumulation area or SAA. The regulations state that the SAA must be "under the control of the operator". Weekly inspections should be done by designated trained employees. It is not recommended to share SAAs with other PIs.

**5) Consider lab layout depending on different spatial needs.** PIs need to work together to make sure the lab space is arranged in the most logical and efficient way for everyone's needs. During this process it is also important to make certain that all regulatory standards are still being met such as handicap access, electrical codes, fire codes, chemical storage requirements, etc.

**6) Involve others in changes/additions to the lab.** If a lab space is being shared it is important to consult all parties involved before making changes to the lab such as ordering new equipment, installing new furniture, and procuring new appliances. These changes will affect the layout of the lab and may add congestion to the space. There are also limited electrical outlets and fume hood spaces.

**7) Tag equipment out of service when it is not functioning properly.** This is very important in a shared lab. If shared equipment such as fume hoods or appliances are not working properly they should be tagged "out of service" immediately and signed appropriately. Action should be taken swiftly to repair any damaged equipment.

**8) Confer about emergency response procedures.** Occupants need to address how they will respond to emergencies such as power outages, building floods, fires, evacuations, etc. so that everyone is safe and the research is protected. There needs to be a plan in place should the need arise.

These are just a few considerations but if there is one thing that all of these items have in common it is that **communication is key**. Individuals in shared lab spaces must communicate with one another to ensure each other's success and maintain a safe working environment. Even though lab staff think of themselves as separate entities when they share a room, there must be a symbiotic relationship to make it all work successfully and productively.



# PROTECTING OUR PLANET STARTS WITH YOU



**BIKE MORE  
DRIVE LESS**



**reduce  
REUSE  
recycle**

Cut down on what you throw away. Follow the three "R's" to conserve natural resources and landfill space.

**choose sustainable**



Learn how to make smart seafood choices at [www.FishWatch.gov](http://www.FishWatch.gov).

Trees provide food and oxygen. They help save energy, clean the air, and help combat climate change.



**PLANT  
A TREE**



**EDUCATE**

When you further your own education, you can help others understand the importance and value of our natural resources.

**CONSERVE WATER**



The less water you use, the less runoff and wastewater that eventually end up in the ocean.



Buy less plastic and bring a reusable shopping bag.



**Don't send chemicals into our waterways.**

Choose nontoxic chemicals in the home and office.



**Long-lasting light bulbs - ARE A - BRIGHT IDEA**

Energy efficient light bulbs reduce greenhouse gas emissions. Also flip the light switch off when you leave the room!



[oceanservice.noaa.gov](http://oceanservice.noaa.gov)

## **REMINDER:**

**Chemical spill kits should be used for chemical spills only.**

**If you have a water spill or leak, please contact housekeeping or use paper towels. (Call Facilities as well if you have a building leak).**

**Spill supplies are costly and should only be used for their intended purpose.**



# UNE Chemical Sharing Program

The UNE Chemical 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 that you are thinking of disposing, please contact EHS so they can be listed in the next issues of EHS Lab Chatter as available for the UNE Chemical Sharing Program.

## **Equipment available:**

*The following equipment is available through the Chemistry Department:*

- over 1000, 250 mL Erlenmeyer flasks in the original packaging
- over 500 white plastic test tube racks

*The following item is available through the Biology Department:*

- 1 new, unopened bottle of Fisher Phenol Red (500 mL) expires 8/2020

To claim available items, please contact: [jtyre@une.edu](mailto:jtyre@une.edu)

To contribute a topic or article to EHS Lab Chatter,  
email: [jtyre@une.edu](mailto:jtyre@une.edu)



**\*\*All background images are taken from the UNE Digital Asset Manager files\*\***