

# The Safety Net

Eastern Virginia Medical School's Environmental Health and Safety Newsletter  
[https://myportal.evms.edu/research/safety/environmental\\_health\\_and\\_safety](https://myportal.evms.edu/research/safety/environmental_health_and_safety)

Summer 2019  
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**Special Interest  
Articles:**

- Stormwater Facts
- Ladder Safety
- Safer Sharps
- Pharma Disposal Info

**Individual  
Highlights:**

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## September is Campus Fire Safety Month

The Center for Campus Fire Safety and the National Fire Protection Association have designated September as **Campus Fire Safety Month**. September is the month to raise awareness about the dangers of fires on college campuses and student housing. In 2011-2015, U.S. fire departments responded to an estimated annual average 4,100 structure fires in campus buildings and housing. There have been 92 fatal fires documented since January 2000 on college campuses and housing resulting in 132 fatalities and \$14 million in direct property damage. Of these fires:

- Most fires started in the kitchen or cooking area
- 87% involved cooking equipment
- Structure fires in off-campus housing were more common during the hours between 5 p.m. and 9 p.m. and on weekends

To help reduce risk, the following tips are recommended:

- Cook in designated areas only and **never leave cooking equipment unattended**
- Test smoke alarms monthly, **do not remove or disable smoke alarms**
- Keep combustibles away from heat sources and do not overload electrical outlets
- **Do not use extension cords** as permanent wiring
- Do not place anything in front or near exits.
- Learn the buildings evacuation plan and practice drills

Practice these fire safety tips at all times, not just in September. They could save your life or those you work and live with. Remember that fire can occur very quickly, so the best course of action is prevention.

**CAMPUS FIRE SAFETY**

**Be a safe cook.**  
Cook only where it is allowed.  
Keep an eye on what is cooking in the microwave or on the stove.

U.S. Fire Administration | FEMA | Fire is Everyone's Fight

## 2019 Virginia Sales Tax Holiday

Legislation in the 2015 General Assembly combined Virginia's three sales tax holidays into one three-day holiday beginning on the first Friday in August at 12:01am and ending that Sunday at 11:59pm. This year, that weekend is **August 2-4, 2019**. During the sales tax holiday period consumers can purchase qualifying school supplies, clothing, footwear, hurricane and emergency preparedness items, and EnergyStar™ and WaterSense™ products without paying sales tax. Note that these prices refer to the item's maximum price, not the total purchase price.

### *School Supplies, Clothing and Footwear:*

- School Supplies: \$20 or less per item
- Clothing and footwear: \$100 or less per item

### *Hurricane and Emergency Preparedness items:*

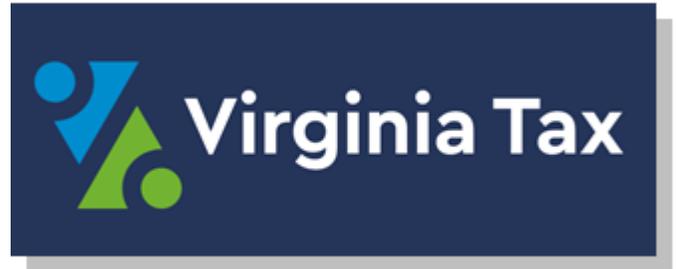
- Portable generators: \$1,000 or less per item
- Gas powered chainsaws: \$350 or less per item
- Chainsaw accessories: \$60 or less per item
- Other specified hurricane preparedness items with a sales price of \$60 or less per item

### *EnergyStar or WaterSense items:*

Qualifying items carrying either the EnergyStar™ or WaterSense™ label with a sales price of \$2,500 or less, purchased for noncommercial home or personal use.

- Qualifying Energy Star™ items include dishwashers, clothes washers, air conditioners, ceiling fans, light bulbs, dehumidifiers, and refrigerators
- Qualifying WaterSense™ items include bathroom sink faucets, faucet accessories such as aerators and shower heads, toilets, urinals, and landscape irrigation controllers

For more information: <https://www.tax.virginia.gov/virginia-sales-tax-holiday>



## Fit Test Fee Changes

EH&S is not funded for the supplies or other costs associated with performing this service, thus cost-recovery is necessary. Beginning **July 01, 2019**, the respirator fit testing cost will be increased to **\$8.00** per person. This reflects the rising costs of materials, supplies and equipment maintenance that are used for this service.

Be aware, EH&S will charge departments for “no show” appointments and “turn away” tests. OSHA requires men to be clean shaven in order to wear a respirator and all to be medically cleared before being fit tested. Therefore, students and employees will be turned away when arriving for their fit test appointment if (1) they arrive with facial hair and/or (2) if their prerequisites are not complete. Fit test prerequisites are the Respiratory Protection training course, located on the EVMS Blackboard site, **and** the Medical Questionnaire completed and cleared by Occupational Health.

We encourage you to plan for this increase in the upcoming budget cycle. If you have any questions about the EVMS Respiratory Protection Program, please contact Kristi Olivar at 446-7928.

## Ladder Safety

Ladders are tools used for a variety of tasks at home, commercially or in the basic work environment. Ladders can be used by people of all ages and have safety rules associated with them.

Inspect all ladders before use to make sure they are in good working condition. Any rickety ladder, or ones with loose or missing parts should be replaced. Ladders should never be used in high winds or storms. If you are feeling dizzy, prone to losing your balance or you are tired, stay off the ladder. When using a ladder, always wear slip-resistant shoes.

Remember to select the right size ladder for the job. The Duty Rating of a ladder is the maximum safe load capacity of the ladder. The ladder you choose must have a Duty Rating greater than the weight of the climber, tools, supplies and other objects placed upon the ladder. When selecting a ladder you must also make sure the ladder is the right height for the job. The climber must be able to reach their destination without stepping on the top step or rung of the ladder.

Always set up ladders on firm level ground, and never have more than one climber on the ladder at a time unless the ladder is specifically designed for more than one person. Never lean or overreach while working on a ladder. Your belt buckle should remain between the ladder side rails. When climbing always keep three points of contact with the ladder. Face the ladder during ascent and descent and while working and have two feet and one hand or one foot and two hands in contact with the ladder at all times. This will minimize the chances of slipping and falling from the ladder.



## SAFE STEPLADDER USE

- 

Follow manufacturer instructions and ladder labels
- 

Face the ladder while climbing up or down
- 

Keep slippery materials away from ladders
- 

Use a barricade to keep traffic away
- 

Only put ladders on a stable, level surface
- 

Maintain 3 points of contact (two hands and a foot, or two feet and a hand)
- 

Check for, and avoid, overhead power lines

**OSHA.GOV**

# Stormwater Facts!

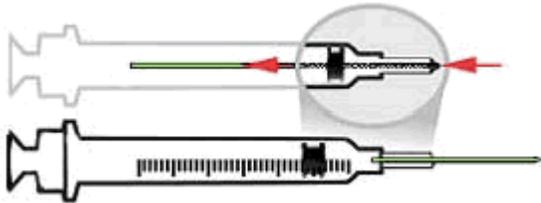
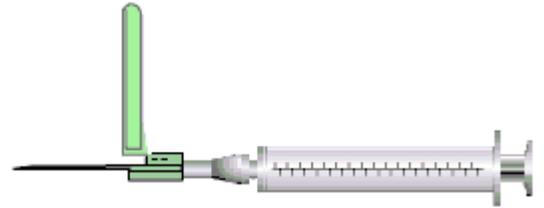
As tropical storms move into the region this season, it is important to remember the environmental and public health concerns associated with stormwater runoff and consider your role as a steward of your community. Stormwater runoff is generated by rain and snowmelt events that flow over land and impervious surfaces. As runoff travels, it collects chemical pollutants, sediments, metals, and additional pathogens before it deposits into bodies of water or storm drains that empty into bodies of water. Stormwater runoff does not make it to a wastewater treatment plant. For this reason, runoff has been linked to exacerbations of harmful algal blooms, drinking water disease outbreaks, streambank erosion, and impaired, destroyed and contaminated aquatic life. It is to our economic, health, and aesthetic advantage as individuals and a community to consider our impact on stormwater runoff. The table below provides examples of where pollutants in runoff come from, what their impacts are on the environment and our health, and what you can do to prevent or minimize the pollutants in runoff. The table is not an exhaustive list and was adapted from EPA Victoria and U.S. EPA sources.

| Stormwater Runoff: Pollutants, The Effects, and Remediation |  |   |   |  |
|---|--|---|---|--|
| Pollutant   | Source   | Environmental Effect  | Public Health Effect  | Remediation  |
| Heavy Metals  | <ul style="list-style-type: none"> <li>- Batteries</li> <li>- Transportation</li> <li>- Mining</li> <li>- Spills</li> </ul>  | <ul style="list-style-type: none"> <li>- Can impair and contaminate aquatic life by poisoning or disrupting their life process – includes bioaccumulation in shellfish</li> <li>- Persist in the environment a long time</li> </ul>   | <ul style="list-style-type: none"> <li>- If drinking water compromised, may cause adverse health effects</li> <li>- Contaminated shellfish and other food products may lead to adverse health effects like kidney failure, neurotoxic effects, gastrointestinal issues, etc.</li> </ul> | <ul style="list-style-type: none"> <li>- Store batteries in contained, protected areas</li> <li>- Properly dispose of batteries</li> </ul>   |
| Nutrients and Toxic Organics                                | <ul style="list-style-type: none"> <li>- Animal feces</li> <li>- Transportation</li> <li>- Fertilizers</li> <li>- Pesticides</li> <li>- Herbicides</li> </ul>  | <ul style="list-style-type: none"> <li>- Increases nutrients (such as phosphorous and nitrogen) in water leading to excessive growth of aquatic weeds and algae</li> <li>- May lead to fluctuations in dissolved oxygen levels- drop in oxygen levels kills aquatic life and may leave unpleasant odors</li> </ul>                              | <ul style="list-style-type: none"> <li>- Can release bacteria and viruses</li> <li>May cause hepatitis and gastroenteritis</li> <li>- If drinking water compromised, may compromise nervous, endocrine, and immune system of vulnerable populations</li> </ul>                          | <ul style="list-style-type: none"> <li>- Pick up after your pets: unwrapped waste should be buried (&gt;5”) or placed in toilet or wrapped waste goes in trash</li> <li>- Have vehicle inspected regularly</li> <li>- Properly dispose of oil or engine fluids and pick up spills with sand</li> <li>- Only fertilize when necessary and do not use products containing phosphorus</li> <li>- Use natural methods for plant care: traps, beneficial insects, etc.</li> </ul> |
| Sediments and Gross Pollutants                              | <ul style="list-style-type: none"> <li>- Transportation (car washing, wear/tear, etc.)</li> <li>- Construction Sites</li> <li>- Land Erosion</li> <li>- Waste Collection Systems</li> <li>- Lawn Clippings</li> <li>- Spills/ Accidents</li> </ul> | <ul style="list-style-type: none"> <li>- Reduces light availability in water, which may lead to 1) decrease in food supply for aquatic life, 2) inhibit natural bacteria die-off, and 3) encourage the enhancement of nitrogen/phosphorous in runoff</li> <li>- Choking hazard for aquatic life</li> <li>- Aesthetically displeasing</li> </ul> | <ul style="list-style-type: none"> <li>- May decrease the availability and nutrient value of aquatic food</li> <li>- If drinking water is compromised, may reduce effectiveness of chlorine</li> </ul>  | <ul style="list-style-type: none"> <li>- Never dump anything down a storm drain</li> <li>- Wash vehicles on the lawn</li> <li>- Sweep instead of washing sediment off of driveway, lawn, or commercial areas</li> <li>- Maintain buffer strips next to waterways</li> <li>- Properly dispose of waste and lawn clippings</li> <li>- Properly clean up spills and accidents</li> </ul>  |

## Safer Sharps: Devices and Practices

Safer Sharp Devices are something that every person employed at EVMS should be acquainted with. This is especially important if you are a clinical employee, research staff member, or medical student. One should not only understand how to select, use, and properly dispose of a stocked sharp but also grasp the significance of the OSHA standard that pertains to such tools.

The history of Safer Sharps devices begins in 1991 when the Occupational Safety and Health Administration (OSHA) published the *Occupational Exposure to Bloodborne Pathogen* standard. *29 CFR Part 1910.1030* set forth the first safety principles to eliminate or minimize occupational exposures to bloodborne pathogens. The goal was to require employers to use a combination of engineering and work practice controls, personal protective clothing and equipment, training, medical surveillance, Hep B vaccinations, signs and labels, and other such provisions to greatly reduce the health risks associated with sharps contaminated with bloodborne pathogens. After nearly 600,000 percutaneous injuries caused from contaminated sharps were reported in the healthcare industry, Congress decided to sign the *Needlestick Safety and Prevention Act* in 2000. It directed OSHA to revise the Bloodborne Pathogen Standard in greater detail.



Since that time, two main key categories of the devices have been founded. The first provides immediate protection by engineering the safety feature into the device itself and the second provides engineered protection throughout disposal. Engineered Safety Devices that are used keep worker's hands from having to move in front of the sharp. Such as sliding shields for recapping needles, syringes that

automatically retract after use, shielded or retracting catheters, and intravenous medication (IV) delivery systems that use a catheter port with a needle housed in a protective covering. Rigid sharps disposal containers have been engineered to protect workers during after use. These come in a wide variety of sizes, shapes, and options for fixation and portability and should be selected based on the need in a given area. Location is key to the success of this intervention.

Even though the *Occupational Exposure to Bloodborne Pathogen* Standard along with the additional revision of the *Needlestick Safety and Prevention Act* are very detailed and strict, injuries from sharps still occur. The Center for Disease Control (CDC) admits that not all sharps injuries can be averted with the proper use of a Safer Sharps Device, even if unnecessary needle use is eliminated. However, most sharp injuries are prevented through proper use. There is a slight significant percentage of sharp that occur every year through improper use. Reported data has shown that the lack of training on how to properly use a Safer Sharp does lead to a small but significant number of injuries. Likewise, injuries occur when safe work practices are not implemented. Disposing of sharps directly after use prevents them from ending up on table tops, in pockets, in mattresses, etc. Moreover, passing sharps between individuals or transferring them to different locations can lead to sharp collisions between employees. Therefore, to prevent as many sharps injuries as you can, be mindful that Safer Sharp Devices should be used in combination with proper training techniques and safe work practices.

Prevention starts with you!

## Prenatal Radiation Exposure

There are numerous ways pregnant women can be exposed to radiation. Diagnostic exams, occupations in research, and working in the healthcare fields may pose risks of radiation exposure. Practicing ALARA (As Low As Reasonably Achievable) techniques ensures radiation exposures are minimized, which keeps radiation exposures within regulatory limits, and reduces the potential for health effects to the fetus. However, accidental exposures above regulatory limits may cause damage to the mother and fetus.

The fetus is protected by the uterus and surrounding tissues, which explains why the fetus tends to be lower than the mother when exposed to radiation. The human embryo and fetus are sensitive to ionizing radiation at doses greater than 0.1 gray. Depending on the stage of fetal development, the health consequences of exposure at

doses greater than 0.5 gray can be severe, even if the dose is too low to cause an immediate effect to the mother. The United States Nuclear Regulatory Commission created the Dose Equivalent to an Embryo/Fetus regulation, to ensure the dose equivalent to the embryo or fetus does not exceed 0.5 rem. The health consequences can include growth restriction, malformations, impaired brain function, and cancer.

If you plan on becoming pregnant or are pregnant and want EH&S to track your occupational radiation exposure, please go to the EH&S MyPortal website and download the “Instructions Concerning Prenatal Radiation Exposure” and the “Declaration of Pregnancy” forms. Please contact EH&S for questions or concerns.

| Battery Recycling for 2019 |              |              |              |
|----------------------------|--------------|--------------|--------------|
| Type                       | Month        |              | Total        |
|                            | April        | June         |              |
| Alkaline                   | 167.4        | 56.2         | 223.6        |
| Heavy Duty/Non-            | 20.4         | 4.8          | 25.2         |
| Lead Acid                  | 343.8        | 211          | 554.8        |
| Li-Ion                     | 13.8         | 2            | 15.8         |
| Ni-Cd                      | 11.6         | 5.4          | 17           |
| Ni-MH                      | 2.4          | 0.5          | 2.9          |
| <b>Total:</b>              | <b>559.4</b> | <b>279.9</b> | <b>839.3</b> |

## Pharma Disposal Procedures

Environmental Health & Safety (EH&S) can help you dispose of your expired, unused and unwanted pharmaceuticals. To dispose of uncontrolled drugs or pharmaceuticals, contact EH&S at 446-5798 or [EHS@evms.edu](mailto:EHS@evms.edu) and arrange for your drugs to be picked up. After being collected, EH&S will place them in a waste pharmaceutical bin which will be transported by a licensed hazardous waste vendor to an off-site location to be incinerated.

If your drugs or pharmaceuticals being offered for disposal are controlled substances, contact Aaron Decker, Chemical & Environmental Safety Officer, at 446-5146 or [deckerac@evms.edu](mailto:deckerac@evms.edu). He will make arrangements with EVMS Police and Public Safety to have a police officer witness the destruction of the controlled substances (i.e. – pouring the drugs into a container of flammable hazardous waste that will be transported by a licensed hazardous waste vendor for off-site incineration). A DEA Form - 41 is required to be filled out and signed by two witnesses for the final disposition of the controlled substances, and it must be kept on file for two years. If you should have any questions please contact EH&S at ext. 5798 or [EHS@evms.edu](mailto:EHS@evms.edu).



## Ask the S.O.B.

**Q:** Dear S.O.B.,

I need to send tissue samples to a collaborator in another state. When the Shipping Company's driver came to pick up the samples, he said the box wasn't labeled correctly and he couldn't accept the package. How am I supposed to know what goes on the box??

- Signed & Sealed

**A:** Dear Signed,

The [U.S. Department of Transportation](#) (DOT) requires anyone who is involved in domestically shipping hazardous materials (chemical, biological, or radioactive) to complete shipping training, otherwise known as 49 CFR training. If the shipment requires international air transportation, the shipper must complete training that complies with the [International Air Transport Association's](#) (IATA) Dangerous Goods Regulations as well.

For biological material shippers, EH&S offers training that complies with both U.S. DOT and IATA regulations. This training is available on the BioRAFT platform.

If you have questions or need assistance with the process, please contact EH&S at x5798 or [ehs@evms.edu](mailto:ehs@evms.edu).



Safety Office Boy to the rescue!

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## Notes from the Office

### ***EH&S Training Courses***

| Course   | Date/Time                                | Location  |
|--|--|---|
| <b>Chemical Hygiene Plan</b>   | July 18, 2019<br>9:30 AM - 12:30 PM      | Lewis Hall 2162   |
|  | August 9, 2019<br>1:30 - 4:30 PM         | Andrews Hall 155  |
|  | September 19, 2019<br>9:30 AM - 12:30 PM | Lewis Hall 2162   |
| <b>Radiation Safety in the Laboratory</b>  | Contact EH&S                             |   |
| <b>Biosafety in the Laboratory<br/>Biological Materials Shipping<br/>Autoclave Safety Training<br/>OHSP Training</b> | Available on BioRAFT                     | <a href="https://evms.bioraft.com/">https://evms.bioraft.com/</a>     |
| <b>HAZCOM<br/>Bloodborne Pathogens<br/>Biological Safety in the<br/>Clinical Laboratory</b>                          | Available on Blackboard                  | <a href="http://evms.blackboard.com/">http://evms.blackboard.com/</a> |

### ***Morgue List***

Looking for a chemical? Check out our [Morgue List](#)! Items on the list are offered and free to all research labs. Phone, come by, or look on the EH&S [Chemical Safety](#) web page to see what chemicals we have available!

# RADIATION EMERGENCIES AND PREGNANCY

After a radiation emergency, pregnant women should follow instructions from emergency officials and seek medical attention as soon as emergency officials say it is safe to do so.



Prenatal radiation exposure occurs when a pregnant woman's abdomen is exposed to radiation.

For most radiation exposures, the radiation dose to the fetus is lower than the dose to the woman. A pregnant woman's abdomen partially protects the fetus from radiation sources that are outside her body.

If a pregnant woman swallows or breathes in radioactive materials, these may be absorbed into her bloodstream. From the woman's blood, radioactive materials may pass through the umbilical cord to the fetus or concentrate in areas of the mother's body near the womb and expose the fetus to radiation.

Health effects to the fetus from radiation exposure can be severe, even at radiation doses too low to make the mother sick. These health effects can include miscarriage, stunted growth, deformities, abnormal brain function, and cancer.

A fetus is most sensitive to radiation between weeks 2 and 18 of pregnancy. A fetus will become less sensitive to radiation during later stages of pregnancy.

In the rare event of a radiation emergency, radiation experts can answer questions from pregnant women and their healthcare providers about radiation exposure and pregnancy.



U.S. Department of  
Health and Human Services  
Centers for Disease  
Control and Prevention

<http://emergency.cdc.gov/radiation>