

The Safety Net

Eastern Virginia Medical School's Environmental Health and Safety Newsletter
https://myportal.evms.edu/research/safety/environmental_health_and_safety

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Special Interest Articles:

- **SteraMist is ready for use!**
- **Cold Storage Equipment PMs**
- **Reproductive Hazards at EVMS**

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Earth Day 2019 – Protect Our Species

On April 22, 1970, millions of people took to the streets to protest the negative impacts of 150 years of industrial development. Earth Day is now a global event each year, and we believe that more than 1 billion people in 192 countries now take part in what is the largest civic-focused day of action in the world. April 22nd is the day observed worldwide by numerous groups and organizations in the form of rallies, conferences, and community service events.

This year’s theme is “Protect Our Species.” The unprecedented global destruction and rapid reduction of plant and wildlife populations are directly linked to causes driven by human activity: climate change, deforestation, habitat loss, trafficking and poaching, unsustainable agriculture, pollution and pesticides to name a few. The impacts are far reaching.

A quick look at the statistics:

- The number of animals living on the land has decreased by 40% since 1970.
- Marine animal populations have also fallen by 40% overall.
- Overall, 40 percent of the world’s 11,000 bird species are in decline.
- Animal populations in freshwater ecosystems have plummeted by 75% since 1970.
- Insect populations have declined by 75% in some places of the world.
- About 25% of the world’s coral reefs have already been damaged beyond repair, and 75% of the world’s coral reefs are at risk from local and global stresses.
- It is estimated that humans have impacted 83% of Earth’s land surface, which has affected many ecosystems as well as the range in which specific species of wildlife used to exist.



Don’t forget to visit EH&S’s Earth Day booth on **Wednesday, April 17th in the Brickell Library Atrium**. We’ll be there from 10 AM – 2 PM. See you there!

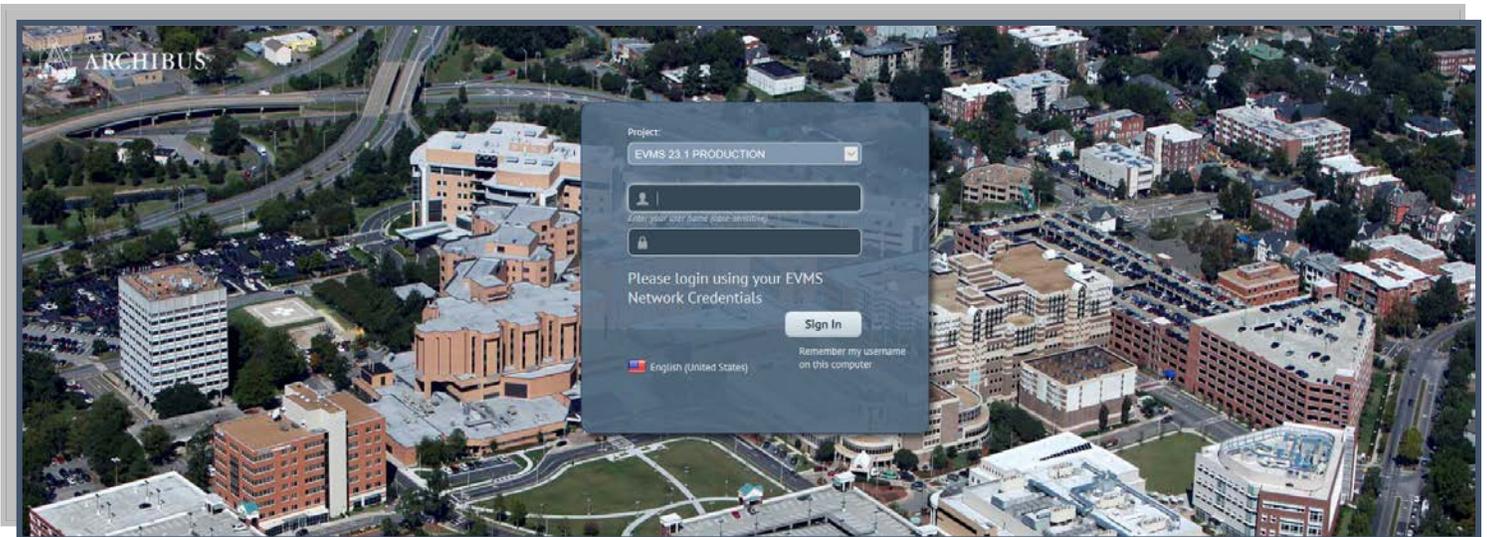
To learn more about Protecting Our Species, visit <https://www.earthday.org/campaigns/endangered-species/earthday2019/>.

EVMS Facilities ODT

In December 2017, EVMS launched a new work request system called On Demand Ticketing (ODT). ODT is a web based program that lets faculty, staff and students report a problem in any location on campus that's supported by EVMS Facilities. Because of this, Facilities can be more proactive than reactive, ensuring work requests are prioritized correctly.

The most important aspect of ODT is having the ability to track work requests in an efficient manner and giving end users immediate insight into the status of the work request. This enables Facilities to take control by reducing requests that sometimes get over looked.

You may access ODT through the “Facilities Operation” link listed under My EVMS Resources on the EVMS Portal. Instructions on how to use ODT can be found by opening the following link: [Facilities On Demand Ticketing \(ODT\) Training](#).



For maintenance **Emergencies** please call (757) 446 – 7498 instead of using ODT. Emergencies are classified as electrical fires, water leaks, power outages, temperature issues relating to HVAC, and elevator problems. Also treat as an emergency any issue that presents an immediate danger to you, other persons, or any building.

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.

TOMI SteraMist is Ready for You!

EVMS EH&S has a TOMI™ SteraMist™ system for all your surface decontamination needs! Below are details of the SteraMist system:

1. It was developed by the Defense Advanced Research Projects Agency (DARPA) after the 2001 anthrax attacks, and the technology was classified until 2009. TOMI™ SteraMist™ BIT™ (Binary Ionization Technology) works by converting hydrogen peroxide (H_2O_2) into a hydroxyl radical.
2. The BIT process takes a 7.8% H_2O_2 solution and passes it through a cold plasma arc to change the molecules into free radicals that are about 2 microns in size and get a very quick six log kill.
3. The small particle acts like a gas and penetrates cracks and crevices where sprays cannot penetrate.
4. The surface unit (hand held) is applied in 5 seconds per square foot with a 7 minute contact time. Effective whole room treatment time of just over 75 minutes (including application time, contact time, and aeration time) can be achieved using the Environment Unit.
5. The product is safe, easy to use and leaves no by product, residue or noxious fumes; and best of all it does not rust or corrode any of your equipment due to the low concentration of H_2O_2 used. No wipe, no rinse, non-corrosive and is a visible fog which disperses as a gas. Spaces are safe to enter once the hydroxyl radical is below 1 ppm.
6. The produced hydroxyl radical allows aeration time to be extremely quick. The application phase facilitates concentration of Ionized Hydrogen Peroxide (IHP) in the treatment area, and time is determined by the number of application nozzles used, enclosure materials, environmental conditions, and treatment volume/area. TOMI's products consistently provide maximum efficacy from validated cycles as measured by a 6-log reduction (99.9999%), the standard for sterilization.



To schedule the decontamination of your biosafety cabinet (BSC) or room, call (446-5798) or email EH&S. The cost for these services: a flat \$15 fee for BSCs, while the cost of non-BSC surface areas depends on the square- or cubic-footage of the space to be decontaminated.

Semiannual Radioactive Material Inventory Due!

Spring is finally here! Not only does spring bring warmer weather, longer daylight, and more sunshine—spring is the season for semiannual radioactive material inventory at EVMS. Formal letters and inventory forms will be sent to each Authorized User to be completed and returned to EH&S. The inventory form includes instructions on how to complete the form as well as EVMS's Radioactive Material Inventory policy. In addition you may use the decay spreadsheet that will be electronically sent to each Authorized User, which will help your data compilation process.

Completion of the inventory form is imperative. The inventory packets should be returned no later than **April 15th**. If you have any questions or concerns, please feel free to contact EH&S.

Cold Storage Policy Compliance

EVMS's [Cold Storage Policy](#) covers a variety of issues and requirements, including requiring Preventative Maintenance (PM) for all cold storage equipment. It is vital to perform preventative maintenance, on schedule, on cold storage equipment in order to keep malfunctions to a minimum and to extend the life of the equipment. Below is a general checklist for a Refrigeration Preventative Maintenance Schedule.

Clean the Equipment

Uncleaned spills can lead to unpleasant odors and mold growth that can jeopardize the safety of the materials. This is a **continuous** task.

Clean the Door Gasket

A good seal is important for keeping warm air outside of your freezer for both the benefit of energy efficiency and unit performance. Keep gaskets free of frost and ice by brushing frost off the gasket frequently while it is easy to remove. This should be a **monthly** activity.

Clean the Coils

Coil cleaning is critical to the efficient operation of the unit. If the coils are caked in dirt and grime, it will interfere with the transfer of heat from the system. **Each month**, inspect and clean the unit's condenser and evaporator coils. EH&S recommends vacuuming the coils at least **every 6 months**.

Change the Filter

Clogged filters make it more difficult for air flow to cool the freezer coils. To clean the filter, remove and rinse with water (choose direction carefully so lint is pushed off filter). EH&S recommends checking (and cleaning) the filter **monthly**; change the filter **annually**.

Defrost on Schedule

Follow the manufacturer's recommendations for defrosting. Defrosting the unit too often creates unnecessary work for the equipment; defrosting not often enough leads to ice buildup, which puts stress on the unit's compressor and sensors. EH&S suggests defrosting at least **annually**.

Compliance with the policy will be checked during EH&S Lab Inspections. If you would like, EH&S can help with your freezer PM. We will install a new filter for \$15, vacuum the coils for \$25, or do both for \$35. Just give us a call to schedule!

-80°C Freezer Best Management Techniques

TIPS FOR BEST SAMPLE STORAGE

Minimize ice build-up
Keep door openings to a minimum and to short lengths of time (30 seconds to one minute is normal)

Clean door gaskets
Use a cloth to wipe these at least once a month

Clean the condenser coils
Vacuum coils at least every 6 months or more often if there is dust or heavy foot traffic near the unit

Change the condenser filter
Clean the filter monthly and change it out at least annually

Utilize your freezer racks
Know where your samples are located before you retrieve them to minimize exposure to ambient temperatures

Remove frost and ice build-up
Periodically scrape the frost and ice from the inner doors, chamber and vacuum-release port

Defrost
Do this at least annually

Reproductive Health Hazards

Being aware of and reducing exposure to reproductive toxins is important for EVMS employees. OSHA defines reproductive toxins as substances that affect reproductive capabilities including severe adverse effects on sexual function and fertility in adult males and females, and adverse effects on the development of the fetus. As an EVMS employee, you may come into contact with chemical, physical, radiological or biological agents classified as reproductive hazards/toxins. These agents include mutagens (agents that cause genetic mutation) and teratogens (agents that cause an abnormality following fetal exposure during pregnancy). Examples of reproductive agents you may be exposed to are listed in the table below.

Examples of Reproductive Hazards		
Occupational Hazard	Observed Effects	EH&S Office Oversight
Ionizing Radiation (X-rays)	Infertility, miscarriage, birth defects, low birth weight, developmental disorders, childhood cancers (mutagen)	Radiation Safety [Johnny Teasley: 757-446-5147]
Antineoplastic Drugs	Fetal harm/Miscarriage (teratogen)	Chemical & Environmental Safety [Aaron Decker: 757-446-5146]
Ethylene glycol monomethyl (and ethyl) ethers	Miscarriages	
Lead	Infertility, miscarriage, low birth weight, developmental disorders	
Toluene	Miscarriage	
Human Cytomegalovirus (HCMV)	Birth defects, low birth weight, teratogen	Biological Safety [Bruce Finlay: 757-446-8465]
Zika Virus	Teratogen	



EVMS is committed to the health and safety of its employees. Always follow procedures meant to minimize your risk of exposure, including but not limited to: using fume hoods, minimizing exposure time, and using appropriate personal protective equipment. If you work with reproductive hazards and become pregnant, it is important that you inform Occupational Health and your PI/Supervisor of your pregnancy. This will allow the responsible parties to review potential hazards and make any necessary work adjustments. If you have questions or concerns about potential occupational reproductive health hazards, please contact **Environmental Health & Safety** or **Occupational Health** (Tel: 757-446-5870).

Ask the S.O.B.

Q: Dear S.O.B.,

My PI likes to wear sandals/Crocs and shorts when the weather gets warm. Is it OK for me to wear them in the lab even if I am not doing any lab work?

- *Soxen Sandels*

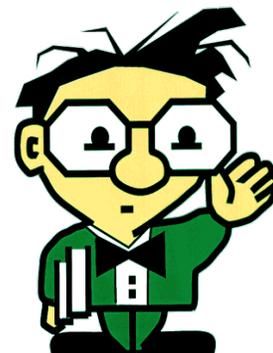
A: Dear Sox,

Short answer: no.

Longer answer: Upon arriving at the laboratory, whether you are working at the benchtop or not, proper lab attire is required. This includes pants (or long dress) covering the ankles and closed-toe shoes. In accordance with OSHA's Laboratory Standard, 29CFR1910.1450(f)(4)(i)(C), and EVMS's Chemical Hygiene Plan, Section 10.4, the following shall not be worn in the lab:

- Shorts or Short Skirts
- Sandals or other open-toed shoes
- Loose or dangling clothing or jewelry
- Unrestrained long hair

If you have questions or need assistance with the process, please contact EH&S at x5798 or ehs@evms.edu.



Safety Office Boy to the rescue!

Notes from the Office

EH&S Training Courses

Course	Date/Time	Location
Chemical Hygiene Plan	April 18, 2019 9:30 AM - 12:30 PM	Apr 18 - Lewis Hall 2162
	May 23, 2019 9:30 AM - 12:30 PM	May 23 - Andrews Hall 132
	June 6, 13, 20, and 27, 2019 9:30 AM - 12:30 PM	June (all) - Lewis Hall 2162
Radiation Safety in the Laboratory	Contact EH&S	
Biosafety in the Laboratory Biological Materials Shipping Autoclave Safety Training OHSP Training	Available on BioRAFT	https://evms.bioraft.com/
HAZCOM Bloodborne Pathogens Biological Safety in the Clinical Laboratory	Available on Blackboard	http://evms.blackboard.com/

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!