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EHS Lab Chatter

UNIVERSITY OF NEW ENGLAND
INNOVATION FOR A HEALTHIER PLANET

EHS
ENVIRONMENTAL HEALTH AND SAFETY

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Safety Spotlight

Introducing: Lindsay Forrette, Teaching Lab Coordinator and Chemical Hygiene Officer for Marine Sciences

Interview date: March 5, 2020

Interviewed by: Jessica Tyre

Location on campus: MSC teaching labs 117 and 118

Q: How long has she worked at UNE?

A: Since January 2020.

Q: What is her educational background and field of study?

A: Lindsay has a BS, Animal Behavior from University of New England and conducted research through the Marine Science program on local fish species. She also has her Master's Degree in Biology specifically studying avian ecology with an emphasis on chemical communication primarily researching the white throated sparrow at Indiana State in Terre Haute, Indiana.

Q: What does she find most interesting about her position here at UNE so far?

A: This particular position had the lab coordinator/manager title that she was seeking. The position also lets her work with undergrad students in the Intro to Marine Science courses and be an instructor. She also enjoys mentoring and managing the work study students in the Marine Science program. She looks forward to expanding her skills in the position such as being the Chemical Hygiene Officer (CHO) for Marine Science. She would like to continue learning how to manage chemicals, specimens, and safety hazards.

Q: What are some of the safety challenges she has faced so far in her new position?

A: Identifying wastes and specimens that she finds, cleaning out areas that were previously inhabited in the building and figuring out proper disposal for items, becoming familiar with the spaces, and making sure things are stored properly are all challenges she is currently facing. Course development with faculty and planning activities in a safer manner as well as lowering risk factors is definitely one of Lindsay's goals.

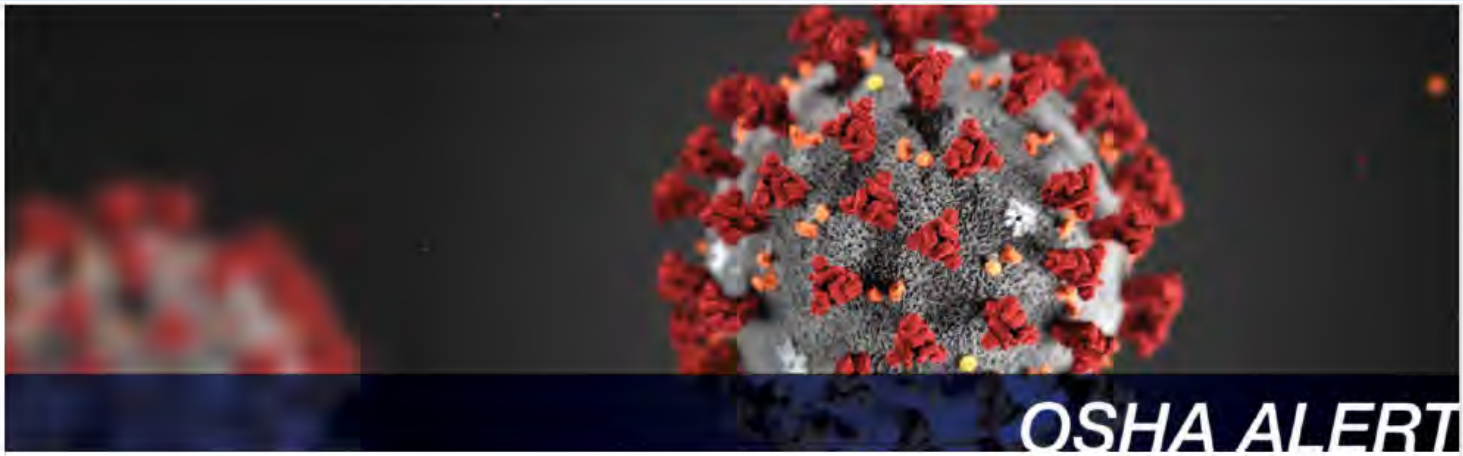
Q: What are some of her personal interests outside of work?

A: Lindsay enjoys reading novels, taking walks and hikes, being outdoors and would like to get back into cross country running at some point. She has an adorable cat named Indy that likes to snuggle!

Q: What is her favorite thing about working at UNE?

A: She enjoys the walking around the building and taking in the beautiful views that our campus has to offer. She loves seeing the ocean and the wooded areas of Maine right here at work. Lindsay also appreciates all the support from her faculty and staff in her department and is happy to be in a classroom environment for her work.

Welcome back to UNE, Lindsay. It's great to have you!



Prevent Worker Exposure to Coronavirus (COVID-19)

The novel coronavirus (officially called COVID-19) is believed to spread from person-to-person, primarily through respiratory droplets produced when an infected person coughs or sneezes. The virus is also believed to spread by people touching a surface or object and then touching one's mouth, nose, or possibly the eyes.

Employers and workers should follow these general practices to help prevent exposure to coronavirus:

- Frequently wash your hands with soap and water for at least 20 seconds.
- If soap and running water are not available, use an alcohol-based hand rub that contains at least 60% alcohol.
- Avoid touching your eyes, nose, or mouth with unwashed hands.
- Avoid close contact with people who are sick.

Employers of workers with potential occupational exposures to coronavirus should follow these practices:

- Assess the hazards to which workers may be exposed.
- Evaluate the risk of exposure.
- Select, implement, and ensure workers use controls to prevent exposure, including physical barriers to control the spread of the virus; social distancing; and appropriate personal protective equipment, hygiene, and cleaning supplies.

For the latest information on the symptoms, prevention, and treatment of coronavirus, visit the Centers for Disease Control and Prevention coronavirus webpage.

For interim guidance and other resources on protecting workers from coronavirus, visit OSHA's COVID-19 webpage.

OSHA issues alerts to draw attention to worker safety and health issues and solutions.

OSHA Occupational Safety and Health Administration • osha.gov/covid-19 • 1-800-321-OSHA (6742) • @OSHA_DOL

OSHA 3989-03 2020

GUIDE TO SAFE AND EFFECTIVE CLEANING AND DISINFECTING: Should we limit our use of disinfectants?

Contributed by Ronnie Souza

There is a growing belief on the part of the public that all germs (or "microbes") need to be killed because of infectious disease outbreaks. This belief, and limited time for routine cleaning and hand hygiene, leads to the indiscriminate use of sanitizers, disinfectants, and antimicrobial hand products that may actually pose a hazard to the public.

Disinfectants are not cleaners; they are pesticides designed to kill or inactivate microbes. Therefore, they are not products that should be used freely. Overuse of some disinfectant products can potentially create microbes that are resistant to particular disinfectants or that become "superbugs."

Bacteria, fungi, and viruses play important positive roles in human health. Microbes have both beneficial uses and negative impacts. Product manufacturers sometimes advertise the negative view of germs and potential health affects to cause public alarm and increase the desire for antimicrobial products.

Why is it necessary to clean before disinfecting?

Frequent and correct cleaning of high-risk and high-touch areas with proper equipment will remove microbes. Microfiber cloths and mops are recommended for removal of up to 99% of microbes. Steam cleaning machines and spray-and-vac machines are also recommended to remove microbes and their spores.

When is disinfection necessary?

Situations that require disinfection include accidents involving vomit, feces, body fluids, or blood; some bathroom surfaces; and for specific legally required activities in food preparation areas and in childcare settings. Disinfectants are not recommended for daily use other than on high-risk surfaces and where required by regulation. All dirt, debris, and other organic matter should be removed from a surface so that the disinfectant can come into contact with and destroy the microbes. Soil renders disinfectants less effective because it can hide the microbes, absorb the disinfectant ingredients, and change the chemical nature of the disinfectant. The surface will remain disinfected only until the next person or microbe touches that surface.

Can you clean and disinfect at the same time?

Although cleaners do not disinfect, and disinfectants do not clean, there are products that are designed and registered by the EPA to clean and disinfect. They contain both a disinfectant and a detergent cleaning agent. All heavily soiled surfaces need to be cleaned first using a separate cleaning agent.

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cleaning continued...

Health Issues Related to Misuse or Overuse of Disinfectants

- Disinfectants have been linked to acute and chronic health issues.
- Ingredients such as acids, ammonia, bleach, and disinfectants are asthma irritants.
- Emerging science links certain disinfectants to reproductive issues.

Environmental Issues Related to Disinfectants

- Residues of disinfectants washed down the drain may be triggering the growth of disinfectant-resistant microbes.
- Resistant bacteria created in wastewater treatment sludge can result in antibiotic-resistant diseases.

High-risk Areas

- Locations where there is a higher risk for blood-borne incidents, skin contact (MRSA risk), or contact with feces and body fluids.

High-touch Areas

- Surfaces touched frequently and by a variety of hands over the course of the day. High-touch areas include door handles, faucet handles, handrails, shared desks, push bars, drinking fountains, and so forth. Areas touched by only one person, such as a personal computer keyboard, do not pose the same risk.

TURI
TOXICS USE REDUCTION INSTITUTE
UMASS LOWELL

Source:

https://www.turi.org/Our_Work/Cleaning_Laboratory/Resources_and_Information/Disinfection/Guide_to_Safe_and_Effective_Cleaning_and_Disinfecting

Capturing waste anesthetic gasses with activated charcoal

By Peter Nagle

A common hazard to lab personnel in the animal surgery rooms is the inhalation of anesthesia. To eliminate this hazard, our surgery suites use activated charcoal to capture the gas and prevent the release of an anesthetic into the ambient air during the surgery process. Below is a brief description of what activated charcoal is and how it works.

What is activated charcoal?

Activated charcoal is created by burning carbon-rich materials such as wood, coconut shells or coal at high temperatures to create a charcoal powder. The charcoal powder is then typically charred with some additional material, such as chloride salts, to help create the porous structure which gives it the high surface area. It is this property, the high surface area, that makes it useful in capturing isoflurane or other halogenated anesthetic gasses during surgery procedures. Keep in mind that activated charcoal does not remove oxygen, carbon dioxide, or nitrous oxide.

How do activated charcoal canisters work?

The canisters use a passive system to capture the anesthetic and prevent it from being released into the ambient air. This passive method relies on the flow from an anesthesia machine (oxygen mixed with the anesthetic, usually isoflurane) and the anesthetized animal's exhalation to push the anesthetic into the charcoal canister. The gas then adheres itself to the activated charcoal by a process called adsorption (adhesion of molecules or atoms from a gas to a surface). Adsorption differs from absorption in that adsorption is a surface phenomenon, while absorption involves the whole volume of the material.

When should a canister be replaced?

Prior to first use, the canister must be weighed on a gram scale and the initial weight recorded on the canister. The canister must then be weighed after each surgical procedure and replaced after the manufacturer’s specified weight limit is reached. For the majority of canisters, that weight is 50 grams more than the initial weight.

Why is it important to keep the openings of the canister unblocked?

The excess gases like oxygen need a way to escape into the environment. If these openings are blocked, then a build-up of pressure may occur in the breathing system.

Does moisture affect the activated charcoal's ability to adsorb the anesthetic agent?

Yes, moisture will affect the canister’s ability to perform properly and can cause erratic weight readings such as weight gain (moisture) or loss (drying out) without using the canister. For this reason it is important that the canisters are stored in a cool, dry location.

Can a canister be used after moisture has built up in it?

Yes, if moisture builds up in the canister, it is recommended that pure oxygen be run through it for approximately 5 minutes at 2 LPM (Liters per Minute). This process should dry the canister out and make it ready for use once again.

How do I dispose of the activated charcoal canisters?

As long as the canister was not used to adsorb a substance regulated as hazardous waste (Isoflurane is not regulated), it is not required to be managed as hazardous waste. EHS will, however, collect the canister and dispose of it through our hazardous waste vendor as non-regulated waste.

OSHA® FactSheet

Laboratory Safety Ergonomics for the Prevention of Musculoskeletal Disorders

This guidance is advisory in nature and informational in content. It is not a standard or a regulation, and it neither creates new legal obligations nor alters existing obligations created by OSHA standards or the Occupational Safety and Health Act. In preparing this guidance, OSHA reviewed existing practices and programs as well as available scientific information on ergonomics in laboratories, and reflects comments received from selected representatives of professional associations and laboratories.

Employers should recognize that laboratory workers are at risk for repetitive motion injuries during routine laboratory procedures such as pipetting, working at microscopes, operating microtomes, using cell counters and keyboarding at computer workstations. Repetitive motion injuries develop over time and occur when muscles and joints are stressed, tendons are inflamed, and nerves are pinched and blood flow is restricted. Working in awkward positions in laboratory hoods/biosafety cabinets can also present ergonomic problems. Employers can minimize occupational injuries and simultaneously improve worker comfort, productivity, and job satisfaction by becoming familiar with ways to control laboratory ergonomics-related risk factors. In addition to general ergonomic guidance, this fact sheet reminds employers to make laboratory workers aware of simple adjustments that can be made at the workplace.

Employers Should Train Workers to Be Aware of Their Posture

A worker's back is composed of three natural curves that form an S-shape. When the three natural curves are properly aligned, ears, shoulders and hips are in the same plane. Poor posture may lead to pain and serious injury. To avoid ergonomic-related risk factors, workers should be encouraged to:

- Use a chair that provides good back support and sit against the back of the chair.
- Lower the chair or adjust the foot ring or get a footrest, if their feet dangle.
- Tilt the seat forward or use a seat wedge when working in a forward posture; do not jut their chin forward when working. Adjust the position of their work, the work surface, or the chair so that they sit in an upright, supported position.
- Always try to work at a bench cut out; cut outs can help workers get close to their work while sitting against the back of their chair.
- Use supportive shoes and cushioned mats if required to stand for long periods.
- Keep frequently used trays and supplies within close reach.

Employers Should Train Workers to Keep Arms and Hands Relaxed

Employers should ensure that workers are aware of tensions that may occur as they perform different tasks. To avoid ergonomic-related risk factors, workers should be encouraged to:

- Keep their shoulders relaxed and their elbows close to their sides when working. Avoid reaching to use instruments and work materials.
- Maintain neutral wrist and arm postures when working; work with their wrists in a neutral or straight position as if they were shaking hands with someone.
- Sit close to their work area, keep objects close and adjust their chair to match the height of the bench.
- Avoid repetitive or forceful twisting and turning motions (e.g., opening valves or adjusting microscopes).
- Select equipment and tools that are the right size for their hands.
- Use padding and tubing to reduce pressure and force when working. For example, use rubber tubing or forceps to increase diameter and reduce pinch force. Soften sharp edges on work surfaces with padding.
- Use thin, flexible gloves that fit properly. Ill-fitting and poorly designed gloves increase pinch and grip forces when working.

Employers Should Train Workers to Avoid Static Positions

Workers should be encouraged to vary activities, change their position, and take short breaks every 20 minutes to rest muscles and increase blood circulation. To avoid ergonomic-related risk factors, workers should also be encouraged to:

- Shift their weight often when standing to work. Use a stool or shelf to prop up a foot to relieve pressure on their back.
- Alternate how they hold objects like forceps. To vary the task, workers can alternate holding with the thumb and index finger, and with the index and middle fingers.

Employers Should Train Workers to Avoid Ergonomic-Related Risk Factors When Pipetting

Workers should be encouraged to do the following when pipetting:

- Elevate chair rather than reaching up to pipette.
- Do not twist or rotate their wrist while pipetting.
- Alternate hands or use both hands to pipette.
- Hold the pipetter with a relaxed grip.
- Use electronic pipettes or light touch models whenever possible.
- Use minimal pressure while pipetting.
- Use a light amount of force or two hands to change tips.
- Use low profile tubes, solution containers and waste receptacles.
- Select a lightweight pipetter, properly sized for their hand.
- Use pipetters with finger aspirators and thumb dispensers to reduce thumb strain.
- Use latch-mode or electronic pipetters for repetitive pipetting.
- Take a 1-2 minute break after every 20 minutes of pipetting.

Employers Should Train Workers to Avoid Ergonomic-Related Risk Factors When Using a Microscope

Workers should be encouraged to do the following when using a microscope:

- Sit close to the work surface.
- Avoid leaning on hard edges.
- Pad forearms and edges.
- Keep elbows close to their sides.
- Adjust chair, workbench, or microscope as needed to maintain an upright head position.
- Elevate, tilt or move the microscope close to the edge of the counter to avoid bending their neck.
- Use adjustable eyepieces or mount your microscope on a 30° angle stand for easier viewing.
- Keep scopes repaired and clean.
- Spread microscope work throughout the day and share it with several people, if possible.
- Take short breaks. Every 15 minutes, close the eyes or focus on something in the distance. Every 30-60 minutes, get up to stretch and move.

Employers Should Train Workers to Avoid Ergonomic-Related Risk Factors When Using Hoods and Biosafety Cabinets

Workers should be encouraged to do the following when using hoods and biosafety cabinets:

- Remove unnecessary supplies from the work area.
- Perform all work 6 inches inside the hood.
- Position work supplies in their order of use, with those most frequently used near the front of the hood, but not closer than 6 inches from the face of the hood.
- Place equipment on approved elevated turntables for easy retrieval.
- Use diffused lighting to limit glare.
- Take short breaks to stretch muscles and relieve forearm and wrist pressure.
- Adjust chair/stool to a height that allows the shoulders to relax.

Employers Should Train Workers to Avoid Ergonomic-Related Risk Factors When Using Computers

Workers should be encouraged to do the following when using computers in the lab:

- Use adjustable keyboard platforms under lab benches that accommodate use of the mouse beside the keyboard.
- Where possible, position computer workstations in corners or other areas away from doors, entrances and passageways.
- Place monitor so their viewing distance is between 18 and 30 inches.
- Place monitor so the top of the screen is approximately at eye level. This allows the eyes to gravitate naturally toward the center of the screen.
- Use a document holder placed adjacent to and in the same plane as the computer screen.
- Use footrests, where possible, in order to allow them to change leg positions throughout the day.
- Use an appropriate keyboard, mouse or other input devices if they have existing musculoskeletal problems.
- Take mini-breaks of 3 to 5 minutes for every 20-30 minutes of keyboarding or mouse work. These breaks can be spent doing mild hand exercises or stretches.
- Not to switch from computer keyboarding to pipetting activities (or vice versa) without an adequate break (at least 15 minutes) to allow the hands to recover.

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; the teletypewriter (TTY) number is (877) 889-5627.

For assistance, contact us. We can help. It's confidential.

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Seven Tips to Keep Your Equipment Running Smoothly:

By following these simple tips, you can ensure your lab and equipment will run more efficiently

November 12, 2019-By Matt Mincer via Lab Manager Magazine

Lab managers have a lot on their plates, from managing staff, to workflows, to purchasing and maintaining equipment. One thing that puts a wrinkle in any lab manager's day is malfunctioning machines. A broken instrument can hold up processing samples, increase the time it takes to get results, idle workers, and create a lot of friction "from above."

This article is focused on seven key tips to help you keep your equipment running well and is written from my perspective working with hundreds of great labs and lab managers over the last 25 years.

1. Read the operator's manual. Do what's recommended

Getting people to read the operator's manual is a challenge. Frankly, many lab techs don't read them—ever. But it's worth your time to read the manuals. Most operator's manuals are not very technical. They are geared towards the end user, so don't be intimidated. Also, the trouble-shooting section of each manual is invaluable. You can often use it to help identify simple problems you can likely fix yourself.

If you can't find a particular operator's manual, you may have luck locating it online with a simple Google search. If not, contact the machine's manufacturer or see if the service company that maintains your equipment can get you one. If you don't have one already, I highly recommend starting a library of operator's manuals on all the equipment in your lab(s).

2. Get factory training

Depending on the size of your lab and number of people working for you, consider having one or more staff members get factory training at the time you purchase a piece of equipment. This gives them and your lab the tools you'll need to properly operate the unit, perform basic troubleshooting, and have an overall comfort with the instrument. For older units, it might be worthwhile to pay for an operation training class.

3. Conduct daily (or at least weekly) maintenance

"If it looks good, it works good." Keeping a machine clean will help keep it operating smoothly. Create and adhere to daily, weekly, and monthly schedules for routine cleaning and maintenance. As an added bonus, doing this will help you to become "one with the machine." You'll start noticing small changes that could indicate a problem, such as fluid in the bottle being lower than the previous week.

Part of a good maintenance routine should include spending a few minutes at the end of each day cleaning up broken glass, spilled reagents, etc. Doing this will help keep messes from migrating into other areas they don't belong and possibly negatively impacting other machines. Good maintenance should also include keeping a logbook for each unit in the lab. Note everything possible that happens with the unit, including: temperatures, fluid changes, waste dumps, and errors. Your logbook will help the manufacturer or service personnel accurately troubleshoot when you have an issue. You can never have too much information, especially when you have multiple people using your instruments.

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4. Trust, but verify

Sales reps are very nice people, but often they are not technical reps. When in doubt, call the manufacturer with your technical questions. All OEMs have at least one technical specialist (if not a team) to help customers. If your issue involves service, call your service tech—they have been trained to know your instrument(s) inside and out.

5. Look for warning signs, and don't procrastinate

Prevent something major from happening by addressing it early. It doesn't mean you have to panic, but be mindful. Sometimes issues show themselves with subtle (but very helpful) clues, early on. As I said in the daily maintenance section above, become one with your machine. If something looks a little "off," don't ignore it. Explore and address it early on. Look at your manual. Or call your service tech to get insights and help asap. It may be something that only takes five minutes to fix. And addressing it right away might save you five days of down time later. Your service tech could also offer phone support that quickly resolves the issue without an onsite visit.

Again, this is where an equipment log comes in very handy. Something as simple as lights flickering in the lab can cause issues with extremely sensitive electronics. A few drops of fluid could be an indication that an O-ring seal is going bad. Be mindful of slight changes.

6. Have preventive maintenance done annually

Not only is your equipment something you depend on every day, but it's expensive. The best way to extend its life is to do a thorough inspection and cleaning every year. Replace any parts that need it. You'll stay on top of issues and avoid costly downtime by doing this.

7. Build a well-stocked toolbox

Say you start your shift to find a machine is not working properly. You call the OEM or your service tech for help. They assure you, the machine just needs an easy fix. They say, "All you need to do is get a 4-mm Allen key and a #1 Phillips head screwdriver, do a couple of things we'll guide you through, and we'll have you up and running in no time." You see where this is going...If you don't have a good set of tools, you may be in for some totally unnecessary downtime—whether it be hours or an entire day until your tech can arrive onsite.

Put together an organized box of basic hand tools and know how to use them. Remember, you often get what you pay for, and that's especially true with tools. Quality tools will last a long time, if used properly. Be sure to invest. A few hundred bucks should more than cover it.

"What tools do I need?" you ask. Here's my recommended list:

- Slotted and Phillips head screwdrivers of different sizes
- Set of Allen wrenches, both metric and American standard
- Needle-nose and standard pliers
- Forceps
- Toothbrush
- Oil or grease / Super Lube (be sure it's the correct kind for a given machine)
- Duct tape

By following these tips, you can ensure your lab and equipment will run more efficiently. You'll also have less down time, avoid a lot of frustration, and save money.

Source:

https://www.labmanager.com/business-management/seven-tips-to-keep-your-equipment-running-smoothly-513

DON'T FORGET!!

Annual Blackboard Employee Training is coming soon!

Human Resources will send out an announcement once training modules have been posted on Blackboard and they must be completed by the deadline given.

THANK YOU!!

UNE Chemical Sharing Program

The UNE Chemical Sharing Program is a great way to reduce hazardous waste, reduces costs for your department, and have a positive environmental impact on campus. If you have any commonly used lab chemicals or lab equipment 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.

Available now:

No items currently available.