



# SAFETY MATTERS

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## Safety in the CU Conservation Library

### Did you know that there is a laboratory in the library?

By Gabriella Cardoso, Safety Advisor II

Columbia University has an extensive library system which houses primary source materials that cover more than 4,000 years of human ideas, thoughts, and works in over 450 languages. These materials range from artworks to medical manuscripts. The team tasked with upkeep of this media is the Columbia University Libraries Preservation Division. To maintain these materials in optimal condition, the Preservation Division has a Conservation Laboratory led by Alexis Hagadorn, Head of Conservation. Over the years, Columbia University Environmental Health & Safety (EH&S) has partnered with Ms. Hagadorn and her team on many different environmental, health, and safety concerns from safely handling hazardous materials to respirator fit testing to guidance on indoor climate for mold prevention. Recently, EH&S worked with the team on a particularly interesting project to assess whether heavy metals were present in a newly acquired object in the Libraries' collections.

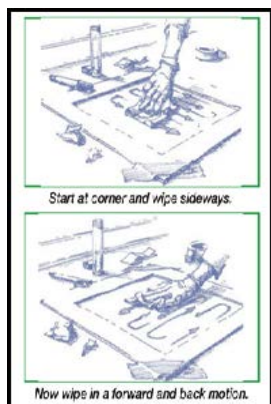


The University Archives recently acquired the chemistry set of Harmon Cozzens (1885 EM), who earned an Engineer of Mines degree in 1885 as a student of the School of Mines. At that time, the degree had a chemistry requirement that often necessitated the students to purchase or borrow several standard chemicals and tools for use in the laboratory. The chemicals and tools purchased by Cozzens were housed in a beautiful, large wooden box with three layers of removable trays.

Upon acquisition, the University Archivist, Jocelyn Wilk, immediately alerted the Conservation staff and sent the set to the lab for assessment. Several of the vials were labeled as containing heavy metals, so the Conservation staff contacted EH&S' Occupational Safety team for testing and further guidance. EH&S staff were able to test for the presence of heavy metals and other dangerous substances using wipes. The wipes were used across all of the surfaces, tools, vials, and trays within the chemistry set. Thankfully, the majority of heavy metals were not detected or were below OSHA standards. Only lead was detected in quantities that, while low, were still above acceptable levels.

In coordination with EH&S, the Conservation staff devised a protocol to clean the chemistry set using a HEPA vacuum with a fine brush attachment that is frequently used in the Conservation field. All vacuuming was completed in a fume hood to prevent any lead particles from being dislodged into the air or surrounding surfaces during cleaning. After vacuuming, all surfaces were further cleaned using a soft cloth and deionized water. Once the cleaning was complete, EH&S staff returned for a final wipe test - confirming the treatment was successful as there were no heavy metals above OSHA limits. The chemistry set still required rehousing, however, so the Conservation assistant, Natalie Naor, constructed a custom case which takes into consideration the substantial weight of the chemistry set and the fragile nature of its contents. The chemistry set is now safe for use in the reading room and classes as long as it is handled using nitrile gloves.

The above example is one of the many ways in which the Conservation Laboratory and EH&S continue to work together to maintain some of the University's most precious possessions in the best, and safest, shape, so that the knowledge contained within can continue to be safely passed on.



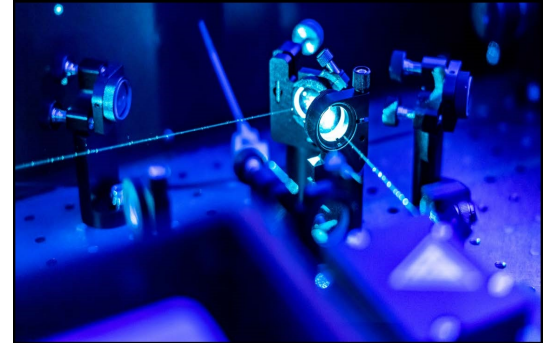
# Laser Registration Requirement

By Kostas Georgiou, Senior Manager, Clinical Radiation Safety Program/ARSO/Laser Safety Officer (LSO)

Lasers generate coherent, monochromatic, and highly directional light beams. Based on these properties, lasers can be used in a wide array of applications. At Columbia University, more than 320 Class 3b and Class 4 lasers are actively used for non-human research.

Columbia University has established a Laser Safety Program to ensure the safe use of laser systems in accordance with government regulations, applicable standards, and universal best practices. The Laser Safety Program is operated by the Environmental Health and Safety (EH&S) and is overseen by a Laser Safety Committee (LSC) and a Laser Safety Officer (LSO).

It is Columbia University policy that all Class 3b and Class 4 lasers be registered with the EH&S Laser Safety Program. It is the Principal Investigator's responsibility to submit a laser registration form to EH&S before a laser purchase. The laser registration form is a description of a laser's specifications (manufacturer, model, class, wavelength, pulsed/continuous wave, power, etc.), the location of intended use, the PI's laboratory emergency contacts along with other pertinent information. If a laser system is obtained by a method other than purchase (i.e., donation, transfer from another institution or homemade construction), the same requirement applies; a registration form must be completed and sent to the LSO for review and approval. Lasers emit non-ionizing radiation (ionizing radiation can be also emitted in some rare instances) and have a set of risks that must be addressed, by the Laser Safety program, before the initiation of research. It is vital for the Laser Safety program to know what lasers are used in the institution and their location, to supervise all laser control activities as required by the LSC.



Researchers can access the laser registration form at Columbia's EH&S website:

<https://research.columbia.edu/environmental-health-safety-ehs>

or by contacting the Laser Safety program at [lasersafety@columbia.edu](mailto:lasersafety@columbia.edu)

Lasers of lower classification than Class 3B and laser systems manufactured with embedded Class 3b or Class 4 lasers, are exempt from the registration requirement. These lasers, at normal operating conditions, do not pose any hazard to the laser users.

If your lab works with Class 3B or Class 4 lasers, consider the following:

1. Have the lasers been registered with EH&S?
2. Has a laser safety program representative visited the lab for a laser safety audit?

If the answer to either of these questions is negative, please contact the EH&S Laser Safety program at [lasersafety@columbia.edu](mailto:lasersafety@columbia.edu).

**It is Columbia University policy that all Class 3b and Class 4 lasers be registered with the EH&S Laser Safety program.**

## We're All in this Together!

CU EH&S has extended CSHEMA's 2023 Laboratory Safety Awareness Week into a full month of raising safety awareness! Please see our Laboratory Safety Awareness flyers on our [Safety Culture](#) page. Feel free to print out and post in your laboratory spaces. Topics: PPE and General Attire, Lab Housekeeping, Lab Safety Equipment, Hazard Identification & Risk Assessment, and Accountability.

EH&S also has an infographic flyer available for you to post in your laboratory spaces. This flyer is being distributed during Lab Safety Surveys. You may also request a copy by contacting EH&S.



## EH&S Q&A Sessions

EH&S now offers optional open forum question and answer sessions to supplement the online training programs.

Attendees will be entered into a raffle for a lunch voucher to the Faculty Club, Faculty House, or LDEO Cafe!!

Contact [safetytraining@columbia.edu](mailto:safetytraining@columbia.edu) for more details.

## Kindness Campaign

As part of the EH&S Kindness Campaign and Wellness Initiative, staff spent an hour meditating on February 8, 2023. The guided session was led by Vera Ruangtragool ([veraru@gmail.com](mailto:veraru@gmail.com)).



## Coming Soon!

PI-specific training module!

Tailored content, important safety culture info and less training burden!

Launch ETA Spring 2023

# Missing the Point

By Cody Cameron, BioSafety Officer II

Engineered sharps injury protection is designed to make needles or “sharps” safer immediately after their use. Safety-engineered sharps are defined by the U.S. Occupational Safety and Health Administration (OSHA) as needleless devices or needles with innate safety features or mechanisms built into their design. Despite the engineering controls built into the device, these features do fail, occasionally even resulting in injury. When an engineered sharp fails there is a high probability that the device itself has an inherent manufacturer defect. While the first inclination may be to dispose of the defective product, it should be retained instead. In the event of an engineered sharp’s failure, the device should be retrieved and returned for quality assurance testing by the manufacturer. After safely retaining the sharp in a puncture proof container, a report must be filed to the Food and Drug Administration (FDA) through the [MedWatch Program](#) describing the make and model of the device along with the batch/lot number and manufacturer. Additionally, the FDA will encourage the end user to contact the manufacturer to test the defective product. This is a crucial step as the defective product may represent a larger design flaw within the batch it originated from. The manufacturer will accept the defective product and perform a series of tests on the device and other models from the same batch. Without the defective product, the manufacturer will not be able to determine the cause of the malfunction. Often, the manufacturer will send prepaid packaging directly to the individual to cover the costs of shipping. Moreover, they may also reimburse the end user for the defective product purchased. Reporting the defective engineered sharp to the FDA will help other individuals who have purchased product from the same batch/lot as they may experience the same factory defect. So, while it is tempting to merely dispose of the defective device, this action will prevent any investigation or potential action from the manufacturer, should they need to recall any defective batches of product. As a reminder, the defective device should not be manipulated with bare hands and should be immediately enclosed in a rigid or puncture proof container.



Despite their internal engineering controls, all sharps must still be treated with caution to prevent potential needlesticks. Should you ever encounter an engineered sharp failure, EH&S’s Biosafety Office [biosafety@columbia.edu](mailto:biosafety@columbia.edu) can be contacted for consultation.

## EVPR Handbook Updates

By SafetyMatters Staff

New versions of the Sponsored Projects, Clinical Research, Animal Research, Research Environmental Health and Safety and Research Radiation Safety Handbooks published by the Office of the Executive Vice President for Research (EVPR) are now available! Beginning this year, the Handbooks have been moved to [LabArchives](#), a cloud-based electronic research data platform that allows enhanced search capabilities. More information is available on [Columbia’s Electronic Research Notebook](#) website.

The Research Environmental Health and Safety Handbook covers the multiple EH&S programs, including Laboratory Safety, Biological Safety, Fire Safety, Laser Safety, Occupational Health and Safety and Controlled Substances. The Research Radiation Safety Handbook is for faculty and staff who conduct research involving radioactive materials or radiation producing equipment.

## Meet the EH&S Staff



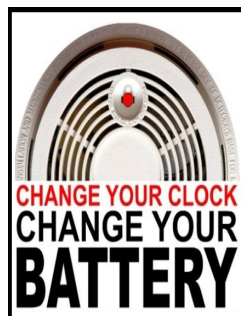
### Yvette Acevedo

#### Senior Coordinator for Radiation

Yvette Acevedo grew up in the Inwood neighborhood of Northern Manhattan, famously now the home of Lin-Manuel Miranda. She lived two blocks from Fort Tryon Park where she has fond memories of spending her summer days

enjoying the sprinkler and playground. At a young age, Yvette learned a love of sports and became a huge fan of the New York Yankees and the New York Knicks. Yvette's family sees her as having the traits of a bear, outgoing, confident, alert and protective of those she loves. She enjoys great conversation and learning new things from others. Her motivation is her family and being giving to others. Yvette first started at the University as an Executive Secretary coordinating two Radiation Safety Committees as well as the University's Radiation Dosimetry Program. Thirty-three years later, her position has evolved into Senior Coordinator for Radiation Safety Committees coordinating eight Radiation Safety Committees! Her first job as a teenager and after college was in retail at B. Atzman and Company at Fifth Avenue and 34th Street. She attributes her experience of working in retail as a foundation that taught her the importance of providing guidance and best practice.

When she is not working, Yvette enjoys cooking, watching movies and TV shows, and spending quality family time with her husband, children and grandchildren. One of her favorite shows is "Emily in Paris". The show has inspired Yvette to brush up on her French, which she studied for four years in high school. It has also inspired her to someday visit France to learn more about their food, traditions, fashion and art. She enjoys traveling which is why she has a bucket list of other places she plans to visit. Yvette enjoys listening to inspirational speakers. Her professional and personal advice is to not let fear dictate the outcome of your journey "Sometimes the one thing you need for growth is the one thing you are afraid to do" by Shannon L. Alder.



### Brian Kim

#### Health Physicist

Brian Kim grew up in Portland, Oregon and joined Columbia University EH&S in 2021 as an Associate Health Physicist. Prior to coming to New York, he interned at Framatome in Richland, Washington. He enjoyed the internship, as it provided valuable experience, however, the social life was slim. So slim that Brian would find himself going to bed at 8:30 pm, earlier than most 21-year-olds! It was at this time he realized the importance of maintaining work-life balance and began looking to move to a city that offers something to do at any time. In pursuit of excitement, Brian moved to New York, the "City That Never Sleeps". While he acknowledges that this was a big move to make, he also believes strongly in the advice to keep challenging yourself with new things. Since he has moved to NYC, he has increased his palette of hobbies, skills, and passions. Brian loves film photography and has started a new hobby of building a camera from individual pieces.



Brian also lives to thrift-shop and is a big fan of L-Train shops throughout NYC. He enjoys digging through racks and finding a great buy. Although thrift shop bargain hunting is more effort, he explains it can be cheaper and more sustainable than buying new. Being a very active person, you might see him riding his skateboard, heading to the gym, or playing basketball. Growing up in Portland, Brian is a die-hard Trailblazer fan. Damian Lillard is his favorite player, though he admits he once accidentally high-fived him when Damian was trying to give him a fist bump. When he needs some down time, he plays Rocket League (a car soccer game) with his friends or hangs out with his cat Momo. He loves penguins but sees himself identifying more with a cat as he likes to sleep 16 hours a day and look out windows. Brian listens to Steve Lacy quite a bit, as he relates to his lyrics, and they share the exact same birth date.

As a happy person, he strives to make others and himself happy. Brian would love to see the world more open-minded. He believes if we listened to each other and consider new viewpoints and cultures, the world would be a happier and better place. As Bong Joon-ho (director of Parasite) stated, "Once you overcome the one-inch-tall barrier of subtitles, you will be introduced to so many more amazing films." Brian believes this quote encapsulates the issue of closed mindedness.



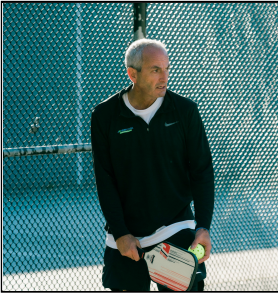


Photo by Lizzie Creason Photography,  
lizziecreason.com

**Beyond EH&S** is a new feature welcoming guest authors from the Columbia community and beyond. These authors will share their expertise on safety and safety related matters.

## Get Back Into the Game

By William N. Levine, MD  
Frank E. Stinchfield Professor and Chair  
Department of Orthopedic Surgery  
NYP/Columbia University Irving Medical Center



Photo by Lizzie Creason  
Photography

We were fortunate to not have a lot of snow this winter (or any, for that matter!) but many people become more dormant during those cold winter months and do not exercise as much as they may like. Couple that with increased food intake around the holidays and we may have a few extra pounds to address as well. So, of course the natural tendency as the temperature rises and you're feeling a bit stir crazy is to get right back to your previous level of fitness and intensity. Please take a moment to read this article to AVOID injury and having to see a physician – consider this your preemptive strike against injury!

- Identify your goals and create an easy-to-follow stepwise plan.
- Do not “start where you left off”. If you were running 8 miles per week, start slowly and build up by about 10-15% per week to avoid potential injury.
- Stretching – tremendous benefits of stretching include:
  - Improve your performance in physical activities.
  - Decrease risk of injuries.
  - Helps your joints move through a full range of motion (prevents stiffness).
  - Increase muscle blood flow (less likely to pull or strain).
  - Enable muscles to work most effectively.
  - Improve your ability to perform daily activities.
- Strengthening
  - Do NOT overdo weight training.
  - Focus on tone rather than bulk.
  - Must have full range of motion of the joint you're working on before you address strengthening.
- Diversify
  - Do NOT focus on the same thing 7 days per week. You risk injury by doing so. Alternate the work out regimen (upper extremity and neck and then lower extremity and lower back, for example). Also, I recommend including stretching in every work out regimen prior to more intensive exercises.
- Preventative Measures
  - If you have had a recent injury, please consult with a health care professional prior to resuming your fitness program. Make sure that your injury has healed properly and you are not at great risk for immediate recurrent injury. Important to realize that even professional athletes struggle with recurrent soft tissue muscle strains like hamstring and calf injuries – must treat these types of injuries conservatively to allow healing.
  - Braces, straps and sleeves
    - Neoprene sleeves can provide some support, warmth, and psychological support and are relatively low-cost.
    - Tennis elbow straps are likewise relatively low-cost and if you have a history of elbow tendinitis can be very helpful.
    - Formal braces can be a challenge – they are often misaligned by the patient and can be cumbersome for you to wear. Please consult with your doctor if you believe you need a brace.
- Have fun!
  - Remember, that fitness programs should ultimately be fun for you – the more fun you can make them, the more likely you are to be compliant.
- Hopefully these tips will help you all transition from your couch potato winter to a active, healthy, and successful spring and summer!

# 99.2%

College of Dental Medicine  
2022 Student Safety  
Training Compliance

## EH&S Fun Fact

Approximately 145,000 pounds (or the equivalent of 23 elephants) of chemical hazardous waste is generated across Columbia University campuses!

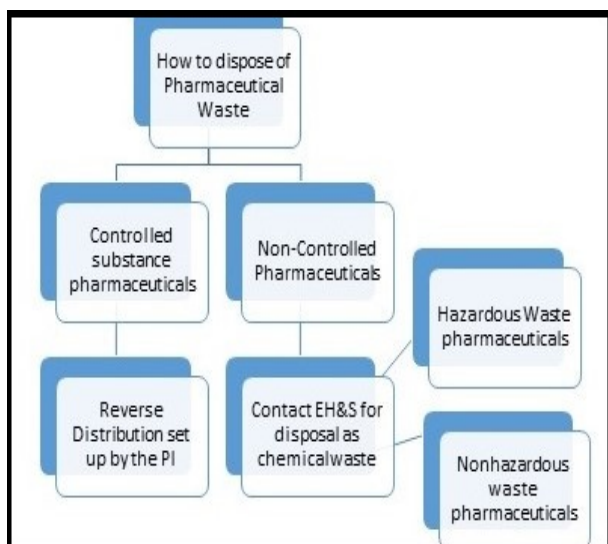
## EH&S Milestone Anniversaries

Cody Cameron, Dr. Peter Caracappa, and Sebastian Flynn-Roach have been with Columbia University for five years.

# Pharmaceutical Waste: When Research Generates Unused or Expired Medications

By Kathy Somers, Associate Director of Research Safety Programs

At Columbia University, research takes place in over 200 centers and institutes, seventeen schools and four affiliate schools. A significant portion of this research is medical, biochemical, clinical or behavioral, and involves the use of pharmaceuticals to advance the understanding of physiology and pathology. Pharmaceuticals, otherwise known as medicines or drugs, are manufactured substances with application in the diagnosis, treatment or prevention of disease. These substances, when expired or left in excess following research or clinical use, must be disposed of in accordance with hazardous waste regulations under the Resource Conservation and Recovery Act (RCRA) and other applicable standards. The Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation (NYS DEC) are the authorities that enforce compliance with RCRA and form the basis for Columbia's Chemical Waste Management Program.



Pharmaceuticals that have a high potential for being abused or causing addiction are additionally regulated by the United States Drug Enforcement Agency (DEA) and are called "controlled substances". In order to purchase and use controlled substances, the individual research principal investigator (PI) must obtain a license from New York State and register with the federal DEA. Throughout the research, use-logs and inventories are required to track each milliliter and microgram of material. Purchases of any pharmaceutical should be limited to the minimum quantity needed for the research, however, if there is excess or expired controlled substance material, the leftover drug must be reverse distributed by the PI to a qualified company, where it can be disposed in accordance with RCRA regulations. Controlled substances cannot be disposed or removed in any other way. Columbia University Environmental Health & Safety (EH&S) maintains a policy and guide for PIs which contain the requirements for research with controlled substances: <https://research.columbia.edu/use-and-management-controlled-substances>.

Other pharmaceuticals, such as over the counter medications and prescriptions which are not controlled, are easier to obtain and use in research; however, proper disposal is just as important for compliance with RCRA. Disposal of these pharmaceuticals should be arranged through EH&S in the same way as other chemical waste. Laboratory personnel should use the EH&S chemical waste request form; upon receipt, the items will be picked up within one week for disposal: <https://research.columbia.edu/chemical-waste-pick-up-request>. EH&S has set up dedicated collection containers in spaces where pharmaceutical waste is more predictably generated, such as in Institute of Comparative Medicine (ICM) and the Columbia Center for Translational Immunology (CCTI). Both hazardous and non-hazardous pharmaceuticals are collected in separate bins; EH&S reviews the formularies from these groups on an annual basis to confirm and/or update the short list of medications that fall into a RCRA hazardous waste classification. On the container label is a QR code of the chemical pick-up form.

For more information about the management and disposal of expired or partially used non-controlled pharmaceuticals, please review EH&S's [Pharmaceutical Waste Policy](#). Questions regarding pharmaceutical waste management should be directed to EH&S at [hazmat@columbia.edu](mailto:hazmat@columbia.edu) or 212-305-6780.



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Please share questions or comments with us at [newsfeedback@columbia.edu](mailto:newsfeedback@columbia.edu)