



SAFETY MATTERS

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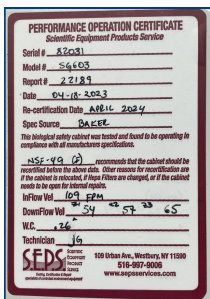
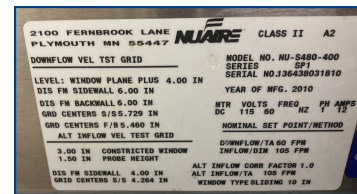
Get to Know Your Biosafety Cabinet

By Cody Cameron, Biosafety Officer II

A well-maintained, operated and certified biosafety cabinet, or “BSC”, can be a trusty ally in protecting laboratory researchers from exposure to aerosolized infectious material, as well as providing an aseptic environment to perform tissue culture. Persistent neglect of the required maintenance and proper operation of a BSC can lead to contamination or compromise the end user’s overall health following acute or persistent exposure to biological materials handled within the cabinet.

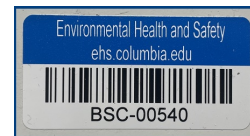
BSC are typically adorned with several stickers or plates that reveal much about their mode of operation and certification status. Have you ever wondered what information each of these conveys? Read on.....

As a standard manufacturing practice, each individual BSC is affixed with an engraved or printed plate typically denoting the manufacturer, the type (for example Class II A2), the model, and the serial number, which is unique to each BSC. This information often proves valuable in identifying older models that may be out of production, making it difficult for vendors to repair or maintain. Newer models often have labels on the face of the grilles indicating the supply, exhaust filter dimensions, along with the average down flow and intake velocity for the model. Manufacturers typically make operation manuals available for each model on their website.



The certification label indicates the date an National Sanitation Foundation accredited technician certified and validated the BSC’s overall performance and protection offered by the laminar flow and HEPA filtration. As part of the annual re-certification the various air flow assessments calculate the inflow velocity and average supply velocity, and also measure, at rest, unidirectional airflow and dynamic unidirectional airflow using visualization tests. The technician also assesses the supply pressure differentials and duct pressure and conducts several HEPA exhaust and supply leak tests, as well as electrical safety checks. To ensure consistent protection, University policy dictates that BSC must be recertified annually, even if not used to handle infectious material.

The blue metallic bar code is an asset sticker from EH&S that is linked to internal records that track the location, owner and certification status of each BSC on campus. There are over 500 BSC in EH&S’ database!



Training and experience is required to work effectively inside a BSC. While many practices and procedures are outlined in the CDC’s [BMBL](#) as well as the NSF/ANSI 49, and OSHA bloodborne pathogen standards, EH&S has consolidated best practices and vendor resources online, which will be available by scanning a physical QR code label on all BSCs and to discuss with users their scope of work with biological materials. The QR code embeds a link to [Columbia University’s Biosafety Cabinet Resources webpage](#). The QR code on the face of any BSC will be an invaluable resource to reference.

The Ripple Effect: Unraveling the Environmental and Public Health Implications of Inadequate Waste Management

By Holland Howard, Safety Advisor

When working with hazardous materials and considering safety, the focus can often be on immediate threats such as identifying hazards, implementing engineering and administrative controls, and employing PPE to safeguard against direct exposure. However, the secondary consequences of improper waste management are often not considered. The waste produced during laboratory research and related activities, if mishandled, can propagate environmental pollution. As a result, a chain reaction of repercussions that indirectly impact communities through various avenues of exposure can occur.

Hazardous waste, as defined by the Environmental Protection Agency (EPA), encompasses materials exhibiting intrinsic chemical and physical traits that pose potential harm to human health or the environment. These traits, such as toxicity, ignitability, reactivity, and corrosivity, represent the significant risks associated with improper waste handling and disposal. Consequently, stringent federal regulations and proper management practices have been enacted to mitigate adverse impacts on ecosystems and public health (EPA, 2016).

When waste streams are contaminated with hazardous materials, they can be released into the environment. This will first harm ecosystems and subsequently cause negative repercussions on human health.



Human exposure to chemicals may occur through direct use in the workplace or household, residing in a pollution-affected area, and consuming contaminants via ingestion (Naidu et al., 2021). A chemical exposure can induce both acute and chronic toxicity in humans (Naidu et al., 2021). Moreover, environmental pollutants have been correlated with adverse health effects on respiratory, reproductive, neural, cardiovascular systems, and cancer development (Shetty et al., 2023). Improper waste management can lead to exposure through each of these routes.

The mitigation of pollution and safeguarding of the environment primarily relies on science-driven policies and regulations implemented at state and federal levels. Understanding these policies and their significance is vital for pollution prevention.

Columbia University's policies for proper management and disposal of chemical waste were developed to uphold state and federal regulations and protect the environment. For example, the no drain disposal policy is part of part this commitment to protecting human health and the environment. Limited non-hazardous substances are permitted for drain disposal, and more information can be found on the Environmental Health and Safety website. All other laboratory waste should be collected in accordance with the [Fundament-1s of Hazardous Waste Management](#). Properly labeling waste containers with the full chemical name and identifying a hazard characteristic ensures regulatory compliance and allows the University's certified vendor to appropriately dispose of waste.

Given the widespread use of chemicals across industrial, household, laboratory, and other sectors, it is imperative that users comprehend and address exposure risks, prioritizing public health and environmental preservation. While laboratory waste management may not single-handedly alleviate all pollution, it represents a critical step in contributing positively to mitigation.

EH&S Moves to Geffen Building



Environmental Health and Safety has moved to a new office in the Geffen Building consolidating the Morningside Campus and the Jerome L. Greene Science Center offices. The new space is located at 625 West 130th Street, Suite SC3-065. Please note, visitors must present a valid Columbia ID to enter the building. EH&S' phone number, (212) 854-8749, and website www.ehs.columbia.edu, will remain active and unchanged.

The team will have a daily presence at Morningside in close proximity to the campus' laboratory science buildings. Routine EH&S services will continue uninterrupted, however FDNY C-14 cards will be distributed to recipients upon delivery to EH&S and will no longer be available for pickup at the office.



Lab Safety Champions



Congratulations to **Kevin Bath** and his staff for being named a 2023 Lab Safety Champion!

Lab Safety Honorable Mention



Congratulations to **Steven Rayport** and **Mark Underwood** and their staff for receiving Honorable Mention recognition!

How to become a Lab Safety Champion

Data Integrity Starts with You

By David Skorodinsky, Systems Analyst II

Data continues to play a crucial role in allowing EH&S to best serve the research community. Thanks to the Laboratory Information Online Network (LION) database system, EH&S can collect and utilize valuable data on a laboratory's location, personnel, and space usage. This data is then used by EH&S to provide timely service and targeted communication. However, for the data to be properly applied, it must be maintained by both EH&S staff as well as Principal Investigators and lab members. This is why it is important for labs to routinely update their LION records including personnel rosters, laboratory rooms, emergency contacts, and LATCH assessments.

The Principal Investigator of a lab will, by default, be the only one with the required permissions to make these updates. However, the PI can extend the permissions to a member of their lab by simply assigning the "Lab Safety Manager" role in LION. This not only allows for a lab member to update the LION information but also gives them access to submit the annually required LATCH assessment! Once the correct permissions are assigned, then an individual can update and submit the laboratory's personnel, permissions, and emergency contact information all through the LATCH's Personnel tab in LION as shown below.

Name	Email	Allowed	Role
Test Inspection (PI)	culabsafety@gmail.com	<input type="checkbox"/>	Principal Investigator
David Skorodinsky	ds4030@columbia.edu	<input type="checkbox"/>	Lab Safety Manager <input checked="" type="checkbox"/>

24-Hour Emergency Contact Numbers
 (212) 305-0303 - Inspection, Test - [Room Assignment: (Test Room)] (Feb 22, 2023)

Similarly, in order to update a lab's room information and LATCH assessment in LION, the individual will need to navigate to the LATCH's Assessment tab and click the "New Assessment" button. From there, selecting the "Change Rooms" button will allow the user to search through over 1,900 rooms to select which space(s) to add to their laboratory profile. Once the rooms are updated, the individual can press the blue "START" button to begin the LATCH assessment.

BUILDING	ROOM	<input checked="" type="checkbox"/> SELECT ALL
Test Building	Test Room	<input checked="" type="checkbox"/>
Test Building	Test Room 2	<input checked="" type="checkbox"/>

BACK CANCEL ASSESSMENT START

In any scenario where a user cannot find a lab member or room in LION, they can always reach out to labsafety@columbia.edu and/or speak with a member of the EH&S data team for assistance. Any general questions about LION can also be sent to labsafety@columbia.edu and will be forwarded to the most appropriate team member.

Children and Minors in University Laboratories

- No one under the age of 14 is allowed into a Columbia University Laboratory at any time, unless present on an organized tour or field trip for strictly observational purposes. (Even if a child is under the supervision of a parent or guardian, their presence is strictly prohibited.)
- In addition, no one under the age of 18 is allowed to handle human blood, human cell lines or "other potentially infectious materials," research animals, or be left unattended in a lab.
- Children (under 14) are also prohibited from offices that are located within a laboratory.
- For more information, please refer to page five of the [Guidelines for Short-term Visitors in Research-related and Clinical Activities](#).

Meet the EH&S Staff



Mercedes Courter
Health and Safety Specialist II

Mercedes Courter hails from the Windy City, Chicago, Illinois, home to the Museum of Science and Industry, one of the largest science museums in the world. She was lucky to take many field trips there and her senior prom was held in the Museum (the only remaining structure of the 1893 World's Fair).

Her first day on the job with Columbia University Environmental Health and Safety was on October 24, 2022. Mercedes hit the ground running and has never stopped. Always willing to jump in and help the rest of the team, she has made herself an asset to EH&S!

Her first job was at a bowling alley in Chicago when she was 16 years old. Her engaging personality enabled her to be a party host, customer service representative, and a game room attendant. She began bowling at five and has her own bowling ball. Mercedes and her husband Chris are both excellent bowlers. Not one to brag about her skills, she will not tell us her average, but let's just say it is double or triple what most others in the Department bowl!

She is an incredibly positive and energetic person, believing life takes us down many paths and offers different opportunities to shape every individual. Being optimistic, she sees each day as an opportunity to be kind and have a positive impact on the world. Mercedes loves being outdoors, often taking walks during lunch at a park or in the neighborhood. She is an avid gardener and horticulturalist, often bringing her produce in to share with the team. When Mercedes needs to wind down, she spends time with her husband playing video games, crocheting, or reading a book. Never one to stop learning, she is currently crocheting a variety of projects with complex patterns and taking coursework in industrial hygiene to broaden her professional resume.

Offira Gabbay

Senior Project Manager, Safety and Strategic Programs

Offira Gabbay joined Columbia University EH&S on October 31, 2022, and is currently a Sr. Project Manager of Safety and Strategic Programs. She has come a long way from her first job at Gloria Jeans Coffee Shop, and she still excels at making holiday gift baskets!



Offira is very conscientious, thoughtful, and humble, both at work and at home. As a caring, sensitive, perceptive, observant, but also cautious person, she is most like a deer in the animal kingdom. Perhaps this is why she enjoys hiking and running. She loves sunny weather and the first bursts of life in the spring. She enjoys gardening and watching the fruits of her labor bloom and grow.

Her favorite times are spent with her family, often on hikes in the great outdoors. Although she treasures spending time with her family, she likes to relax on the couch once the kids are down for the night! She would enjoy living in Denver with easy access to the outdoors, mountains, and low humidity but still close to city life and tasty food.

Offira would like to see the world put the brakes on climate change. She is learning more about sustainability and is interested in the idea of a circular economy where materials never become waste. That said, as a member of the Hazmat Team, which assists laboratories in removing hazardous waste, she hopes she isn't putting herself out of work! Offira believes you should venture outside of your comfort zone to learn new skills. She also believes that as a professional, you should be a lifelong learner as there is always room for growth. Her favorite quote, "Life is what happens to us while we are making plans" reminds her that you can't always prepare for everything and sometimes you need to roll with the punches!

Stay Safe with Proper PPE!

YES

- Eye Protection
- Long Pants
- Gloves
- Buttoned Lab Coat
- Closed Shoes



NO

- Shorts
- Sandals
- No Eye Protection
- No Gloves
- Open Shoes

What is Safety Culture to You?

Safety culture means that all members of the lab, no matter experience level, feel comfortable reaching out for support and help when they need it. By encouraging a warm, welcoming environment, in which asking questions is seen as crucial for learning, we are able to prevent mistakes and accidents as our members will feel comfortable asking for help.

-Unknown Columbia University Researcher

Navigating Finance: Insights from EH&S Finance Fest Training

By Jillian D. Sacheli, Business and IT Manager

“Finance Fest,” an hour-long session to provide new EH&S staff with an overview of Columbia University finance processes as well as internal finance processes and policies, was presented to EH&S staff in mid-March. The program also served as a refresher training to veteran staff members to reacquaint them with those processes.

One topic covered was the monthly process of safety supply ordering for the many programs within EH&S: Biosafety, Hazardous Waste, Lab Safety, Occupational Safety and Radiation Safety. As a team of ~40 people providing safety services to all of Columbia’s campuses, staff work together to place supply orders that ensure the department remains prepared for all safety circumstances that may arise. Each team has an assigned coordinator who works with their Program to compile a monthly list of needed items based on inventory review. The coordinator reviews product requests and delivery locations then requests approval from the Program lead. In turn, EH&S’ Business and IT Manager, Jillian Sacheli, processes the finalized request lists. Finally, order deliveries are confirmed by staff as products are received at various locations.

Columbia’s online expense submission platform, [Concur](#), was also reviewed with staff who submit expenses for business purchases or travel incurred during conferences or other trips. A review of the required receipts, approvals and general EH&S expectations was provided, as well as a question-and-answer segment for any specific circumstance a team member wanted guidance about. The session also covered reimbursement policies for continuing education, personal cell phone plans and other internal business expenses.

Finally, the Columbia Purchasing and Accounts Payable processes for the many purchases EH&S makes annually that require staff input and authorization were reviewed. Staff are asked to review all invoices received for accuracy prior to processing to ensure all products and services purchased were received. The Business and IT Manager works with staff to obtain the needed documentation prior to submitting requisitions in the [Accounting and Reporting at Columbia \(ARC\)](#) finance system.

As a large department serving many locations, EH&S’ finance processes are complex and well established to promote best practices, provide prompt payments, and avoid any service interruptions. The goal of Finance Fest was to be transparent with staff regarding these processes and expectations. The training was well received, helpful to staff members and will be offered as an annual internal EH&S intro/refresher ensuring compliance and efficient spending management.

Laboratory Safety Training Gets a New Look!

Environmental Health and Safety’s (EH&S) online Laboratory Safety Training course transitioned to a new format on May 29, 2024, for both the initial and the refresher training. The initial training will now be dispensed in three modules, each about 30 minutes long, including an embedded test. The first module covers Hazard Identification and Control Methods ([TC7200](#)). The next module discusses Hazardous Materials and proper disposal of these materials ([TC7201](#)). The final module details Fire Safety and Emergency Response Training ([TC5451](#)). All three modules must be completed prior to a researcher using a laboratory at Columbia University. Once all three modules have been completed, users will be credited with [TC4951: Initial Laboratory Safety](#) for a two-year period. After two years, researchers will then be reminded to complete the Refresher module. The combination of these modules will allow an individual, who qualifies by FDNY regulations, to apply for a C-14 permit.

The new refresher module, [TC0950: Laboratory Safety Refresher Training](#), is now a 30-minute course with the test incorporated in the training. The new refresher is a condensed version of the three initial modules; if a researcher requires more information regarding a topic, they have the option of reviewing the specific module ([TC7200](#), [TC7201](#), [TC5451](#)). Also, those researchers who took [TC4951](#) or [TC0950](#) in the former format can still obtain a C-14 permit by completing [TC5451](#) and being current in Laboratory Safety Training (either Initial or Refresher). EH&S recommends all researchers who are eligible, obtain a C-14 permit. More information on the C-14 application process may be found on the [EH&S website](#).

The new courses utilize both voiceover, closed captioning, along with documents and links in the Resources tab. These resources are on each slide and can be accessed at any time during the training. After completing the training, all Resources are accessible from the introduction slide.

EH&S continually strives to meet the needs of researchers at Columbia University. New courses are being designed for the safety of everyone in the laboratory. Town Hall sessions and social media are other venues EH&S is utilizing for outreach and feedback. Working together we can all help keep laboratories at Columbia safe.

Reflecting on the Chernobyl Disaster to Improve Our Own Practices

By Dwayne Bryant, Health Physicist

Each year, April 26th marks International Chernobyl Disaster Remembrance Day. It is important to reflect on the events of that tragic day in 1986 and consider the implications for radiation safety, particularly in clinical settings. The Chernobyl disaster serves as a strong reminder of the importance of prioritizing radiation safety measures in all aspects of healthcare, highlighting the critical role of Environmental Health and Safety (EH&S) departments in safeguarding both patients and healthcare workers.



The Chernobyl disaster was one of the most catastrophic nuclear accidents in history, resulting in significant loss of life, widespread environmental contamination, and long-term health effects for millions of people. While the circumstances surrounding the Chernobyl incident were unique to a nuclear power plant, the fundamental principles of radiation safety apply universally, including in clinical settings where radiation is used for diagnostic and therapeutic purposes.

In healthcare facilities, radiation is commonly used in various medical procedures, such as X-rays, computed tomography (CT) scans, and radiation therapy for cancer treatment. While these technologies have revolutionized medical diagnosis and treatment, they also pose potential risks if not managed properly. Exposure to ionizing radiation can cause adverse health effects, including tissue damage, increased risk of cancer, and genetic mutations. Therefore, ensuring the safety of patients, healthcare workers, and the environment is paramount.

EH&S departments play a crucial role in establishing and enforcing radiation safety protocols within clinical and research settings. These departments are responsible for developing comprehensive radiation safety programs, conducting risk assessments, and implementing measures to minimize radiation exposure. This includes ensuring that radiation-emitting equipment is properly maintained and calibrated, that staff members receive adequate training in radiation safety procedures, and that appropriate shielding and protective measures are in place.

Moreover, EH&S departments are instrumental in monitoring radiation levels in healthcare facilities and conducting regular inspections to ensure compliance with safety regulations and guidelines. By maintaining records and conducting thorough audits, EH&S professionals can identify potential hazards and implement corrective actions to mitigate risks.

The lessons learned from the Chernobyl disaster emphasize the need for vigilance and continuous improvement in radiation safety practices. While the risks associated with medical radiation are generally lower than those in nuclear power plants, the potential consequences of inadequate safety measures can still be significant. Therefore, organizations must remain vigilant and proactive in their approach to radiation safety, continuously updating their procedures in line with evolving standards and best practices.

In addition to protecting patients and healthcare workers, effective radiation safety measures also contribute to the overall well-being of the community and the environment. By minimizing radiation exposure and preventing accidents or incidents, EH&S departments play a vital role in promoting public health and safety.

As we commemorate International Chernobyl Disaster Remembrance Day, let us not only remember the lives lost and the lessons learned from this tragedy but also reaffirm our commitment to radiation safety in all aspects of healthcare. By prioritizing safety, investing in training and resources, and promoting a culture of accountability, we can ensure that the legacy of Chernobyl serves as a catalyst for improvement and innovation in radiation safety practices within clinical settings and beyond.

EH&S New Team Member

Marianne McCartney -
Research Safety Program
Coordinator

EH&S Fun Facts

Where where EH&S staff born?
26% abroad, 29% in United States
outside of New York, 45% in state of
New York

EH&S Work Anniversaries

Christopher Pitoscia - 20 years
Samuel Dindayal - 10 years

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Please share questions or comments with us at newsfeedback@columbia.edu