

SAFETYMATTERS

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🖆 COLUMBIA UNIVERSITY EH&S

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EXAMPLE EMERGENCY

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ENVIRONMENTAL Health & Safety

Main Website http://ehs.columbia.edu

Irving Medical Center Phone: (212) 305-6780 ehs-safety@columbia.edu

Morningside & Manhattanville Phone: (212) 854-8749 <u>ehrs@columbia.edu</u>

> Radiation Safety Phone: (212) 305-0303 rso-chrs@columbia.edu



DON'T FORGET TO CHANGE YOUR CLOCKS AND SMOKE ALARM BATTERIES Daylight Saving Time Ends Sunday November 6th, 2022

LABORATORY EMERGENCY CONTACTS HOUSTON, WE HAVE A SOLUTION!

By: Christopher Pettinato, MPH, CSP (Assistant Vice President)

When an emergency occurs at Columbia University – specifically, at the CUIMC, Morningside, and Manhattanville campuses – <u>Public Safety</u> is the first point of contact. This includes any laboratory emergency such as an alarm activation, explosion, fire, hazardous materials spill, injury, leak, or another event. Public Safety maintains a round-the-clock presence on campus and will coordinate with all appropriate responders, such as EH&S, Facilities, FDNY, and Emergency Services.

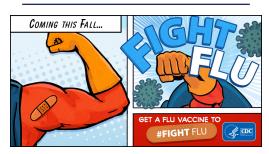
When a campus emergency occurs outside of regular business hours (e.g., evenings and weekends), Public Safety can contact EH&S personnel, who are on call 24/7 for hazardous materials incident response. When an after-hours emergency occurs in a laboratory, Public Safety's next call after reaching EH&S is to the individual(s) responsible for the affected laboratory (typically the Principal Investigator and/or Laboratory Manager). The purpose of this call is to make the PI aware of the incident and to obtain critical information about ongoing operations in the laboratory and any special concerns to aid emergency responders in their efforts. How does Public Safety contact a laboratory's Emergency Contact person(s) after hours to accomplish this?

Historically, Public Safety, EH&S, and the safety offices at Lamont and Nevis have relied on the "24-Hour Laboratory Emergency Contact" information posted on each laboratory door sign/placard or within safety data sheet binders. A major advantage of this format is that Public Safety and other emergency responders have direct access to a phone number for knowledgeable laboratory personnel. However, this advantage is too often compromised by the information being out-of-date and reflecting phone numbers for personnel no longer affiliated with the laboratory.

Additionally, to maintain the privacy of individuals whose phone numbers are displayed on the door sign, many laboratories choose to list only the phone number(s) without the individuals' names. In these cases, since the name is not displayed with the phone number, it is not as easy for laboratory personnel to discern whether the Emergency Contact phone number is current. Therefore,

CONTACT DOOR SIGNAGE Laboratory emergencies can happen any time of the day or night, any day of the week, and whether or not the laboratory is occupied. If a laboratory is affected, Public Safety needs to be able to reach the laboratory's designated 24-Hour Emergency Contact. Please check your laboratory's campus specific signage to ensure its accuracy today!				
MORNINGS	IDE CAMPUS			
NO SMOKING, EATING, OR DRINKING LABORATORY POTENTIALLY HAZARDOUS SUBSTANCES AUTHORIZED PERSONNEL ONLY				
FOR ANY EMERGENCY CALL PUBLIC SAFETY (212) 854 – 5555 OF CAMPUS PHONE – DIAL 99 Public Safety – Please consult 24 Hour Laboratory Emergency Contact Binder for which laboratory personnel to contact in an emergency.	BUILDING: ROOM: PRINCIPALINVESTIGATOR (Name and UNI): LABORATORY SUPERVISOR (Name and UNI):			
IRVING MEDICAL CENTER				
Principal Investigator(s) (Name & UNI): Laboratory Supervisor(s) (Name & UNI):				
In case of Emergency in this laboratory, please call Columbia University Public Safety at <u>212 - 305 - 7979</u> Public Safety – Please consult 24 Hour Laboratory Emergency Contact Binder for which laboratory personnel to contact in an emergency.				

researchers are encouraged to check their readiness to receive an after-hours emergency call; step outside the laboratory and call the current "24-Hour Laboratory Emergency Contact" listed and listen for who answers. Note that the "24-Hour Laboratory Emergency Contact" may be different from the name and phone number listed on an "Unattended Laboratory Operation" sign used to notify the campus community of ongoing unattended research operations. (Continued on Page 2)



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(Continued from Page 1) Out-of-date Emergency Contact information on laboratory door signs is a common challenge for EH&S, Facilities Fire Safety, and Public Safety. To overcome the limitation of the static "24-Hour Laboratory Emergency Contact" sign, EH&S, in partnership with Public Safety, will harness the power of the data contained in the Columbia University <u>Laboratory</u> <u>Information Online Network (LION)</u> software. LION houses a significant amount of data, including emergency contact information <u>Laboratory</u> <u>Assessment Tool and Chemical Hygiene Plan (LATCH)</u>.

In Fall 2022, EH&S will begin preparing a "24-Hour Laboratory Contact" binder drawn from this LION data for Public Safety to maintain at the respective campus' Operations Desk. In conjunction, EH&S will begin replacing current door signs with updated laboratory door signs (see page 1) to instruct the campus community to call Public Safety and to direct them to refer to the new binder for appropriate phone numbers in the event of a laboratory emergency.

Please note that current processes will remain in place at Lamont and Nevis. To ensure the information in LION is current, Principal Investigators and Laboratory Managers should verify their personnel's names and phone numbers when they complete the annual update of their LATCH. Additionally, EH&S will send reminders to Principal Investigators and Laboratory Managers to log in to LION and verify the current information during specific times each year, followed by revised binders being issued to Public Safety.

Regularly updating this information in LION during the lab's annual LATCH update, as personnel change in the laboratory, or if requested, helps Public Safety quickly reach the laboratory's designated 24-Hour Emergency Contact. Please assist Public Safety, Facilities, and EH&S keep the campus safe by ensuring your laboratory's 24 Hour Laboratory Contact information is up to date!

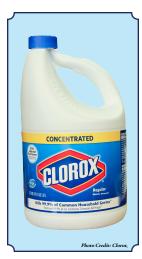
BEST PRACTICES FOR HANDLING BLEACH IN THE LABORATORY

By: Sarah Aloe (Safety Advisor)

Bleach is a commonly used disinfectant at home and in the laboratory, where it is used for surface cleaning and decontaminating potentially infectious liquid-regulated medical waste (RMW). In fact, adding 10% bleach to a final volume of liquid RMW waste, such as aspirated media, is the <u>University's protocol</u> for decontaminating the waste to render it safe for drain disposal.

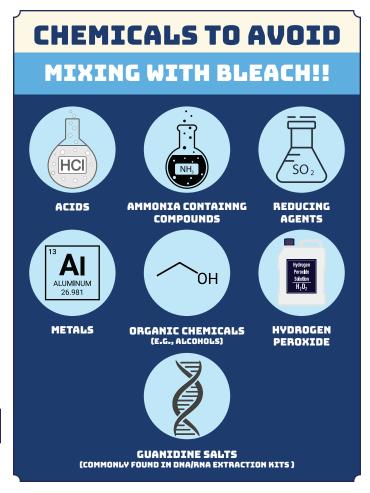
While bleach's main application in laboratories is for decontaminating biohazardous materials, there have been instances of inadvertently mixing bleach with other chemicals. Bleach is incompatible with many other substances, and reactions with bleach can create dangerous situations. A common household warning instructs users to avoid mixing bleach with ammonia or ammoniacontaining products. There are many other incompatible chemicals in the laboratory to avoid mixing with bleach.

What is it about bleach that makes it <u>react with other chemicals</u>? CloroxTM, the most commonly used brand of bleach, contains 5-10% sodium hypochlorite. It is a corrosive, alkaline compound and an oxidizing agent, two properties that result in reactivity with many groups of chemicals. Mixing bleach with incompatible materials can release harmful substances, including chlorine gas and chloroform gas.



BELOW ARE SOME CRITICAL TIPS FOR SAFELY HANDLING BLEACH FOR USE IN THE LABORATORY:

- Use caution and always wear proper laboratory attire and PPE. Pay attention to possible chemical reactions and use bleach carefully.
- Remember the incompatibilities above, and remember that bleach should only be used in the laboratory as a cleaner and disinfectant for biological hazards.
- 3. Always label any flasks or containers in the laboratory with their contents.



- 4. Additionally, labeling flasks as "biological waste only" can be a best practice to avoid accidental mixing of biological and chemical waste.
- 5. Finally, do not mix bleach with any unknown mixtures, even if they are believed to contain biological hazards.

Following these practices will ensure that bleach does not mix with any potentially incompatible materials, keeping everyone in the laboratory safe. Please feel free to contact EH&S for assistance with unknown mixtures!

LION TIPS AND TRICKS FOR RADIOACTIVE MATERIAL (RAM) LABORATORIES

By: Brian Kim (Health Physicist)

Columbia researchers working in a laboratory that uses radioactive materials are most likely familiar with the Laboratory Information Online Network (LION). The LION system comes equipped with many useful resources that can assist in keeping a laboratory organized, such as the Laboratory Assessment Tool and Chemical Hygiene Plan (LATCH). Read on for a review of LION's various tools to virtually manage RAM use.

LOGGING RADIOACTIVE MATERIAL USAGE/WASTE DISPOSAL IN LATCH					
STATUS ↓	CODE ↓	ISOTOPE ↓	CURRENT ACTIVITY	PHYSICAL FORM	
Stock	1234567	H-3	0.33270 uCi	Liquid	Surveys Dispose Sub-Vial

Once you have logged into the LION System, navigate to the LATCH Tab, and Select "Inventory" to view the laboratories Radioactive Material Inventory. From this page, users can conveniently log any usage and generated waste for individual stock vials.

LION can conveniently be used to manage the laboratory's use of RAM. In the following example, the lab recently completed a RAM experiment in which 200 micro-curies (uCi) of P32 were used. After cleaning up, it is estimated that **150 uCi** went to the **Dry Waste** container and the remaining **50 uCi** went to the **Aqueous Waste** container.

To track this in LION, after navigating to the Inventory on LATCH, locate the stock vial of P32 which was used and select **Dispose**. Once the **Inventory Disposal Form** has loaded, enter **200 uCi** into the **Activity Used** box.

The final step of this process is distributing the activities into the two waste containers used.

INVENTORY USE DETAILS				
CONTAINER	PERCENTAGE ACTIVITY			
MC001234 [Dry Waste] 5 Gallon Pail Physicians & Surgeons: 1-234	75 150.00000 uCi			
MC001235 [Liquid Waste] 1 Gallon Container Physicians & Surgeons: 1-234	25 50.00000 uCi			
O Add Container				
	xed to report the amount of activity placed into a given waste container.			

MC001234 is the Dry Waste Container, and MC001235 is the Aqueous Waste Container. From there, input 75% to MC001234 and 25% to MC001235 as seen above. Click submit, and the radioactive waste has successfully been disposed of *virtually!*

VIEWING LABORATORY PERSONNEL TRAINING WITHIN THE LATCH

ials - TC3350	~
Add Training to All Lab Personnel	
	Add Selected Trainin
Last Completed	Status
Jun 25, 2021 🖋	Current
Jun 28, 2021 🖋	Current
Jun 27, 2022 🖋	Current
Jun 29, 2021 🖋	Current
Jun 28, 2021 🖋	Current
	Last Completed Jun 25, 2021 & Jun 28, 2021 & Jun 27, 2022 & Jun 29, 2021 &

Keeping track of training can be tricky. LION simplifies this process by displaying all training records in a user-friendly format. **Training records** will either show as **Current** or **Expired**, indicating whether action needs to be taken.

If any training courses are not listed, scroll to the top of the page, and find the **Select Training** function. Using the drop-down menu, find the training and click on it. Lastly, add the training by selecting the **Add Selected Training** as seen pictured above.

WHO CAN I CONTACT WITH ANY QUESTIONS?

Radiation Safety program staff are available to assist with any radiation safety concerns or issues. Please contact them by email at <u>rso-chrs@columbia.edu</u> or by calling (212) 305-0303.

Managing Radioactive Material Waste Containers in LATCH



Laboratory Safety Managers for RAM labs should be familiar with the **Waste Section** of LATCH. The waste module allows users to request new supplies, view contents, and request pick-up for RAM waste containers. Note that there is also an "Add" function which should not be used. The previously mentioned "Dispose" function in the inventory module should be used instead of the "Add" function.

Perhaps the most significant function of the waste module is the **Pick-Up** feature. Routinely submitting pick-up requests as an active RAM lab helps maintain a clean and organized RAM waste area.

The previous example with containers MC001234 and MC001235 will be used to demonstrate the use of the waste module. After logging the P32 waste, these containers are now ready for pick-up. Navigate to the Waste module of LATCH and select Pick-Up for MC001234. The pick-up function will prompt the user with a pop-up menu that first asks for details regarding the pick-up. Use this area to provide any instruction in the Comments section to help locate the waste. By default, MC001234 will be selected; however, more containers can be added where it says Select Containers Ready for Pickup. Use the drop-down menu to find MC001235 and select the "Add +" button. At this point, MC001234 and MC001235 should be listed.

The bottom half of the form allows users to request any new materials that may be needed in place of those that are being picked up. As seen below, anything from 30-gallon containers to hazardous waste labels are available on the house! Once all sections of the forms are filled out, click **Submit Request**. Within no time at all, the specified RAM waste containers will have disappeared like magic!

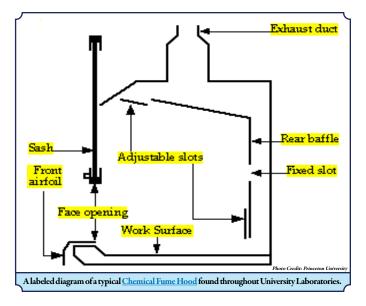
Container: 14 gal (53 L) fiber for beta plates/96-well plates	Qty 1		
Container: 1 gal (4L)	Qty 1		
Container: 1 gal (4L) solid	Qty 1		
Container: 2.5 gal (10 L) - liquid waste only	Qty 1		
EH&S provides to researchers a wide range of RAM waste			

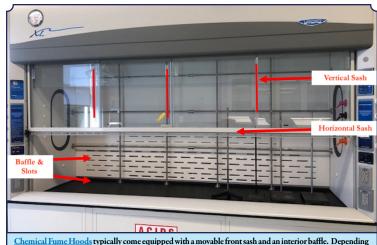
HOW DOES A CHEMICAL FUME HOOD WORK?

A FUNCTION OVERVIEW ON BEST PRACTICES FOR SAFE USE

By: An Nguyen, MS, CSP (Health & Safety Specialist II)

Anyone conducting laboratory research at Columbia University is very likely to have seen and used a <u>Chemical Fume Hood</u>. A chemical fume hood is an invaluable laboratory engineering control and, in many cases, the first line of defense against exposure to hazardous chemicals. They are designed to minimize and/or eliminate exposure to hazardous or odorous chemicals by directing gases and vapors away from the breathing zone and creating a physical barrier between researchers and their experiments. Chemical fume hoods are only as effective as the people using them. Knowing the basics of chemical fume hood function and following safe work practices are essential to minimizing and eliminating exposure to hazardous materials.





<u>Chemical Fume Hoods</u> typically come equipped with a movable front sash and an interior baffle. Depending on its design, the sash may move vertically, horizontally or a combination of the two.

HOW DOES A CHEMICAL FUME HOOD WORK?

A chemical fume hood is a ventilated enclosure in which gases, vapors, and fumes are captured and removed from the work area. The chemical fume hood is connected to a building exhaust fan, which pulls air and airborne contaminants through connected ductwork and exhausts them to the outside atmosphere.

A <u>typical chemical fume hood</u> comes with a movable front sash and an interior baffle. The sash may move vertically, horizontally, or a combination of the two. The sash acts as a barrier between the users and their experiments, protecting them from splashes and unwanted physical contact with the chemicals inside the chemical fume hood. The sash needs to be kept at a certain height to keep the airflow functioning properly and to protect users' faces and upper bodies.

The interior baffles and slots manage and direct the airflow through the hood. In many chemical fume hoods, they can be adjusted to capture lighter or heavier vapors better. It is important to prevent the baffles from being blocked.

SAFE WORK PRACTICES

As noted, the sash acts as a shield to protect users from splashes and minor explosions inside the chemical fume hood. Therefore, users should avoid placing their upper body or leaning inside the chemical fume hood, except during the initial setup of equipment and before placing any hazardous materials inside. When working, users should only put their hands and forearms inside. Personal protective equipment (PPE), including eye protection, gloves, and laboratory coats, should always be worn while working in a hood. Chemical fume hoods are by no means a replacement for <u>PPE</u> and <u>good laboratory practices</u>.

The sash should be kept below eye level, with an opening no higher than 18 inches to protect users in the event that hazardous materials escape the chemical fume hood. A wide-open sash lowers the face velocity in some hoods and, therefore, the capture effectiveness of the chemical fume hood. A yellow tag issued by EH&S indicates the height of the sash opening, at which a face velocity of 80 to 120 feet per minute is achieved. EH&S also checks fume hoods' face velocity annually to ensure they function correctly.

Another way to keep chemical fume hoods working properly is to keep them uncluttered. The more cluttered a chemical fume hood, the more airflow disturbances may interfere with the operation of the chemical fume hood. Baffles and air slots should not be blocked since this significantly affects the fume hood's exhaust path and decreases its capture efficiency. If an open flame is used, it is important to ensure that no flammable liquid is also inside the chemical fume hood. If you have any questions about chemical fume hoods, please contact OccuSafety@columbia.edu.



EH&S Annual Fume Hood Certification Tag, with an arrow indicating optimal sash height.

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MEET THE ENVIRONMENTAL **HEALTH & SAFETY OFFICE**

Samuel Dindayal, BS, ARRT (N)(CT), NMTCB

Health Physicist

Cam Dindayal is a Health Physicist Jin the Research Radiation Program and has been a member of the EH&S team for eight years. Sam is a native of and grew up in the City of Pearls, Hyderabad, India, home of the famous Kohinoor diamond, as well as being a world-famous for Biryani (rice and meat pilaf). Growing up, his parents motivated him by how they lived their lives.

A true New Yorker, Sam is a big Yankees fan. Even so, however, his favorite sports figure is Michael Jordan. Sam found MJ inspirational for his competitive personality, qualities of grace, and staying calm under pressure. Sam's positive attitude and optimism are what he likes about himself, which are also traits that make Sam a great colleague! Because he is a loyal friend, he identifies with the most loyal friend of all, a dog.

In his downtime, Sam enjoys the occasional carpentry project, cooking, and gardening around the house. In the future, Sam would like to learn more about carpentry as he recently enjoyed watching his contractor renovate a bathroom in his home. Although the pandemic disrupted his routine, Sam is now back at the gym, working out, biking and hiking. Additionally, he enjoys listening to music and reading when not physically active.

If Sam could live anywhere in the world, he would choose San Diego for the weather, beaches, and fishing. He hopes to see the world reduce food waste as so many people worldwide go hungry. His compassionate and mindful worldview matches his favorite piece of professional advice, which was given to him by a radiologist who mentored him in Upstate NY, "Be goaloriented and treat people as you would like to be treated."

The Environmental Health & Safety JULY Q&A LUNCH VOUCHER WINNER



Congratulations Nikki Pradhan! **Research Assistant:**

Department of Medicine (Rheumatology)

Each month EH&S offers Q&A Sessions with the Research Safety and Biosafety Teams to provide an open forum for lab personnel to supplement regular **RASCAL** Safety Trainings and ask any follow-up questions. All participants are entered into a drawing for a lunch voucher at the fabulous CUIMC Faculty Club. Don't miss out. Join the next session! See Below for More Details on Upcoming Zoom Sessions: **RESEARCH SAFETY BIOSAFETY**

Jillian D. Sacheli

Business and IT Manager

Tillian Sacheli is celebrating 15 years at Columbia University in 2022 and is currently the Business and IT Manager for EH&S. She is probably the most creative member of the EH&S team, as exemplified by her typically strong showing in the Department's annual pumpkin decorating contest!



Prior to arriving at Columbia, her first job was at the American Thoracic Society in NYC as the Peer Review Supervisor of the American Journal of Respiratory Cell and Molecular Biology.

Jillian grew up in the Bronx, close to the zoo. She has a general aversion to seals due to childhood zoo visits where her grandmother made the kids sit by the seals all day instead of seeing interesting animals like her favorite: frogs. Her favorite quality about herself is her sense of humor, which comes through in her description of her zoo experiences!

Jillian winds down from work chatting and enjoying iced coffee with her husband, Frank. Jillian likes to look at funny memes for stress relief as well. When not working, Frank and Jillian spend time with Jasper, their fur baby. Jasper and Frank motivate Jillian. She has a sign in her office, "I work hard so my dog can have a better life."

Her hobbies include reading and watching TV (she is a Golden Girls fan), and she enjoys mixed martial arts (MMA) on the weekends with family and friends. One talent Jillian wishes she would have pursued is in playing an instrument. Her sizable succulent plant collection demonstrates her love of plants at her home and office. Having recently purchased a new home, she now has a yard and has started her own vegetable garden.

Her favorite quote is from Randy Pausch, "Experience is what you get when you didn't get what you wanted." Jillian's best piece of professional advice she would like to share is to compete with yourself to improve instead of measuring yourself to others continually.



Additional Chances to Win a **VOUCHER TO THE FACULTY CLUB**

Look for EH&S' Digital Signs on Columbia University campuses. If you answer a question regarding the slide using the QR code... YOU could be a WINNER!



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ENVIRONMENTAL HEALTH AND SAFETY'S SUMMERFEST RETURNS IN FULL SWING FOR 2022! The Office's 17th Annual Celebration was Marked with Fun & Festivities

By: Kathleen Crowley, DrPH, MPH, PA-C (Associate Vice President)

This summer marked the 17th year Environmental Health and Safety (EH&S) gathered for Summerfest, an annual celebration of the EH&S team. For the first time in three years, Summerfest was held in-person (vs. ZOOM), and it felt great to be back again at Lamont Doherty Earth Observatory (LDEO). Special thanks are owed to the LDEO Safety Team, Howie Matza and Cathy Troutman, and to this year's EH&S organizers, Daniela D'Armetta (Manager HR), Emily Riber (Office Coordinator), Jillian Sacheli (Business and IT Manager), and Pam Shively (Training Coordinator)!

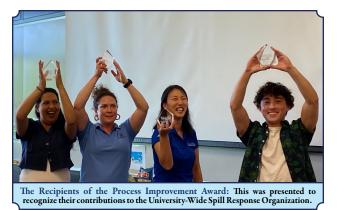


EH&S' Summerfest tradition began in 2005 when CUIMC EH&S and Morningside EH&RS first merged. The inaugural event occurred at the University's Baker Field Boathouse adjacent to Muscota Marsh. The team enjoyed sunshine, a barbecue lunch, whiffle ball, Frisbee, and dominoes, and gave collective and individual shout-outs to the then-new EH&S/EH&RS team. The purpose of Summerfest remains to celebrate the collective hard work and dedication of the team that provides expert guidance and timely service through their commitment to health and safety each day yearround.

While Summerfest has evolved over time, from Baker Field to LDEO; BBQ to food trucks, pot-lucks and back again, and Frisbee to Corn-Hole; while our numbers have grown, the sentiment continues.



The Recipients of the Process Improvement Award: This was presented to recognize their contributions to Environmental Health and Safety's Lessons Learned Program.



The Summerfest commemoration always includes fun, food, laughter, memorabilia, and a goal for each team member to feel appreciated. Acknowledgments abound, including Years of Service and birthday recognition. An annual highlight is the announcement of recent promotions, which this year included David Skorodinsky to Systems Analyst II and Dr. Chris Aston to Director and Chief Biological Safety Officer.

The following awards were also given: A STAR (Situation Task Activity Result) award recognized Cody Cameron, Biological Safety Officer II, for his leadership and work with the Controlled Substance program.

Process Improvement awards recognized two working groups: The first, Lessons Learned, included: An Nguyen (Health and Safety Specialist II), Angie Tse (Sr. Safety Advisor), Cody, Gaby Cardoso (Sr. Health and Safety Specialist), Magda Andrzejewska (Safety Advisor), Laszlo Virag (Sr. Health Physicist) and Angela Meng (Associate Director Radiation Research); the second, the Universitywide Spill Response Organization team included: Brian Kim (Health Physicist), Flavia Villegas (Research Safety Program Coordinator),

Lauren Kelly (Project Manager) and Sandra Keyser (Associate Manager, Research Safety).

Finally, a special award also recognized Pam Shively for her team-building efforts and for being the glue for many, if not all, of EH&S' team-building events!

The annual tradition of Summerfest is met with glee and serves as a finale to each academic and fiscal year and a kick-off to the new year ahead. And again, this year, the sun was shining. Thank you, Team EH&cS!!!



Daniela D'Armetta presents Pam Shively with the "Bomb", in recognition of her efforts towards organizing Team Building events.



SAFETYMATTERS EDITORIAL STAFF: Kathleen Crowley, Robert Giordano, Chris Pitoscia, Pam Shively, Sonia Torres

View Our Newsletter Online at: <u>Research.Columbia.edu/SafetyMatters-Newsletter</u> Please share questions or comments with us at <u>newsfeedback@columbia.edu</u>

