











## Environmental Health &amp; Safety

# SafetyMatters

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## Surveys with a Purpose by Maytal Rand

EH&S will begin its next round of annual laboratory safety surveys this Fall. The objective of these surveys is to assist the Columbia University research community in creating an environment of safety and hazard awareness through a collaborative approach to identifying existing safety and compliance issues along with proactive planning to mitigate potential future concerns. Fall 2012 laboratory surveys will focus primarily on:

1. Training: lab personnel must have current safety training (i.e., Lab Safety, Hazardous Waste, Bloodborne Pathogens, Radiation Safety, etc.) as indicated by each laboratory's specific needs
2. Emergency Equipment: eyewash is checked at least weekly, spill kits stocked and accessible
3. Engineering Controls: fume hood and biosafety cabinet are certified and used properly
4. Personal Protective Equipment (PPE): appropriate PPE is available and worn by all laboratory personnel, in addition to appropriate lab attire:
  - ◆ Lab coats
  - ◆ Gloves
  - ◆ Safety glasses
  - ◆ Dosimeter Badge
  - ◆ Closed toe shoes
  - ◆ Long pants
5. Chemical Handling and Storage:
  - ◆ Compressed Gas Cylinders: properly stored and restrained (leak sensor present, if needed)
  - ◆ Chemicals: properly labeled with no abbreviations or chemical formulae
6. General Housekeeping: entrances, exits, aisles, safety equipment, and sprinkler heads free of obstructions

Subsequent to each survey, EH&S will issue a written report to the laboratory. EH&S will schedule time to discuss the findings and corrective actions from each laboratory's individual survey at a post-survey meeting. This will be a training opportunity and the meeting time will afford the laboratory an opportunity to receive essential and laboratory-specific feedback from the survey and provide direct access to an EH&S Research Safety Specialist to discuss any research safety issue. As an added benefit, EH&S will provide credit for completing the University-required Laboratory Safety/Chemical Hygiene/Hazardous Waste Management training for all laboratory personnel in attendance at the post-survey meeting. In addition to customized training specifically suited to the laboratory's needs, this arrangement offers the advantage of collectively saving the laboratory hours of time away from the bench.

Should you have any questions about the upcoming safety survey, please contact a Research Safety Specialist to help you in your preparation: <http://www.ehs.columbia.edu/LabAssignment.html>.



## Have Two Ways Out by Harry J. Oster

If you discovered a fire, how much time do you think you would have to get to safety? It may be shorter than you think. That's why the EH&S Fire Safety program has teamed up with the National Fire Protection Association (NFPA) during this year's Fire Prevention Week, October 7-13, 2012, to urge everyone to "Have Two Ways Out!" This year's theme focuses on the importance of fire escape planning and practice.

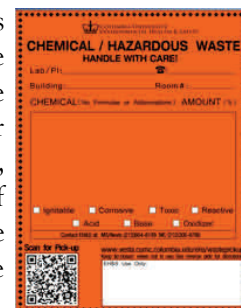
A fire is unpredictable and moves faster than most people realize. What if your first escape route is blocked by smoke or flames? Having a tried and true escape plan, with two ways out, is essential to ensuring your safety should a fire occur. EH&S Fire Safety recommends the following tips for planning your escape:

- ◆ PLAN: Pull together everyone, walk through your work area, and look at all possible ways out
  - ◆ KNOW: The location and letter designation of all stairways from the corridor
  - ◆ ENSURE: All aisles inside your office or laboratory are maintained clear at all times - 36" minimum continuous width! Corridors must also be maintained at 44" minimum width, so avoid corridor storage of laboratory materials.
  - ◆ ESTABLISH: A pre-determined meeting place on a lower floor in the building as well as outside the building in order to perform a visual person count
  - ◆ LISTEN: If the fire alarm sounds, listen for instructions and prepare to evacuate
  - ◆ CALL: Public Safety with details of the emergency (building, floor, room) at CUMC: 212-305-7979 or Morningside: 212-854-5555. Add these contacts in your mobile phone as a favorite
  - ◆ CLOSE: The door, unlocked if possible, behind you as you leave. This helps to contain and limit the spread of smoke and/or flame
- OUT MEANS OUT: Once you're outside, stay outside! Under no circumstances should you re-enter the room or building until Public Safety informs you that it's safe to do so



## Redesigned Hazardous Waste Label by Roman Tarasyuk

Columbia University has a new standardized hazardous waste label to be used at all campuses of the University. Along with the new design, this label is formatted for compliance with all regulatory requirements. The hazardous waste generator (laboratory personnel) creating a hazardous waste container must affix the University hazardous waste label on the container as soon as any waste is added. All entries must be written legibly, abbreviations or short hand should not be used, and percentages of contents must equal 100% for mixtures. Please submit a chemical waste pickup request online to obtain more labels or containers, or to arrange pickup service at <http://vesta.cumc.columbia.edu/ehs/wastepickup/>



**OCTOBER IS  
FIRE PREVENTION  
MONTH,  
REMEMBER TO CHANGE  
THE BATTERIES IN  
YOUR SMOKE DETECTOR  
WHEN YOU CHANGE  
YOUR CLOCK WITH  
DAYLIGHT SAVING TIME.  
PLEASE REVIEW YOUR  
FIRE SAFETY PLANS AT  
HOME AS WELL AS AT  
WORK.  
FOR MORE FIRE SAFETY  
INFORMATION VISIT  
THE FOLLOWING  
FDNY WEBSITE:  
[HTTP://  
WWW.NYC.GOV/HTML/  
FDNY/HTML/SAFETY/  
FIRE\\_SAFETY\\_DOWNLOA  
DS.SHTML](http://www.nyc.gov/html/fdny/html/safety/fire_safety_downloads.shtml)**

For Lab Fire Safety  
Prevention tips,  
check out:  
FDN(wh)Y Me @  
[http://  
www.ehs.columbia.edu  
/FDNYMe.html](http://www.ehs.columbia.edu/FDNYMe.html)

[On-line  
Chemical Waste  
Pick-up  
Request](#)  
Form.

## Personal Protective Equipment ...What You Need To Know

by Tasha Hightower

Columbia University will soon be releasing an updated Personal Protective Equipment (PPE) Policy, which will become effective immediately. The Policy outlines the University's approach to the selection, use and maintenance of PPE, as well as laboratory-appropriate work attire, in research spaces where hazardous substances are present. The Policy is accompanied by a PPE Hazard Assessment Tool, designed to assist laboratories in making proper PPE selections.

[EH&S's Personal Protective Equipment webpage](#) provides access to the Policy, PPE Hazard Assessment Tool, as well as other important PPE information.

Helping to create a safe work environment is EH&S's primary goal and we are here to assist each laboratory in meeting that goal. EH&S [Research Safety Specialists](#) are available for consultation on specific issues, such as choosing the most appropriate chemical-resistant glove, and other more general laboratory safety concerns. Please do not hesitate to contact us with any questions.

## Radioactive Material Contamination by Marlyn Duarte

Contamination is defined as radioactivity in any location where it is unwanted or unexpected. It can be caused by mishandling of materials containing radionuclides and/or improper use of personal protective equipment (PPE). Since radioactivity cannot be detected by the five senses, accidental spillage of even microliter quantities can result in deposition on bench surfaces, equipment, floors, clothing or exposed skin. If proper precautions are not taken, contamination can spread beyond the immediate work area.

Early detection is the single most effective way to prevent the spread of contamination. Therefore, it is important to survey your work area before, during and after working with radioactivity. New York City Health Department regulations require all laboratories to conduct and document a radiation survey at least once a month. These surveys are designed to detect fixed and removable contamination and areas with excessive radiation levels. Both types of surveys achieve the same goal - maintain radiation doses as low as reasonably achievable (ALARA) by early detection and removal of excessive levels of radioactivity. Doing so helps to reduce or eliminate unnecessary radiation exposure.

Proper selection and use of PPE is also important in preventing contamination of clothing and skin. Lab coats, gloves, closed-toe shoes and eye protection are required when working with radioactivity. Proper disposal of gloves that may be contaminated with RAM prevents the spread of contamination to equipment and tools in the laboratory such as refrigerators, doors and sinks.

EH&S's Radiation Safety Program works closely with the laboratories to ensure the proper handling and disposal of RAM. Routine audits are performed and if contamination is found, guidelines are offered for decontamination procedures. To read more about RAM usage please visit: <http://www.ehs.columbia.edu/RadiationResearchWorkingWithRAM.html>

### REMINDER:

**FALL IS THE  
TIME TO GET  
YOUR  
SEASONAL  
INFLUENZA  
VACCINE.**

**KNOCK OUT  
THE  
FLU BEFORE IT  
KNOCKS OUT  
YOU!**

**NO EATING  
DRINKING OR  
APPLYING  
COSMETICS  
WHEN  
WORKING IN  
THE  
LABORATORY**

EH&S  
Website:  
[http://www.  
ehs.columbia.edu](http://www.ehs.columbia.edu)

## Chemical Hygiene Plan Redux by Muhammad Akram

The University's Laboratory Chemical Hygiene Plan (CHP) is undergoing a major revision. The CHP, which is a requirement set forth by the [OSHA Laboratory Standard 29 CFR Part 1910.1450](#), delineates the responsibilities for chemical management in the laboratory and provides essential information for operating a chemical laboratory safely. The CHP also provides a framework for individual laboratories to develop a laboratory-specific plan. The CHP addresses materials, activities and equipment present in research laboratories that can adversely affect the health and safety of workers, and covers employees on all University campuses engaged in the laboratory use of hazardous chemicals. The goals of the CHP include:

- i. Minimizing risk of chemical exposure;
- ii. Minimizing risk of work-related injury and illness from hazardous chemical exposure;
- iii. Minimizing risk to the environment;
- iv. Compliance with applicable regulations and standards;
- v. Achievement of these goals with a minimum burden on research activities.

All laboratory workers, including the Principal Investigator, the Laboratory Safety Manager, Post-Doctoral Fellows, students, technicians and others who work in a laboratory, must be familiar with the CHP. EH&S provides familiarization information during required training sessions, offered monthly and available via RASCAL, as well as during post-survey laboratory meetings (see: Survey with a Purpose article in this edition of *SafetyMatters*). To facilitate the transition to an online system and minimize the effort required from each laboratory in updating its specific plan, EH&S is creating an online, laboratory-specific CHP portal for each laboratory. Since EH&S currently maintains some of the information required by the laboratory-specific CHP, that information will be pre-populated into each laboratory's plan, avoiding duplication.

The Principal Investigator has ultimate responsibility for compliance with the requirements of the Chemical Hygiene Plan by:

- ◆ Developing, updating and submitting the Individual Laboratory Chemical Hygiene Plan specific for their laboratory.
- ◆ Ensuring laboratory personnel are familiar with the Chemical Hygiene Plan and its location.
- ◆ Ensuring laboratory personnel attend Laboratory Safety & Chemical Hygiene Training.
- ◆ Ensuring a Certificate of Fitness (COF) holder is on the floor at all times when personnel are working in the laboratory.

Should there be any questions about the Chemical Hygiene Plan or if assistance is needed in completing your laboratory's plan, please contact a Research Safety Specialist: <http://www.ehs.columbia.edu/LabAssignment.html>. Keep any eye out for the re-launch of the CHP this fall.

## EH&S New Employees

EH&S is pleased to welcome Jeffrey Leavey as Radiation Safety Officer for Research Programs and Yuseph Sleem as an Industrial Hygienist, both starting in September.

Please see the detail information on our website "<http://www.ehs.columbia.edu/WhatsNew.html>".

## Six Months to Some, Plus a Half Dozen More to Others

by Greg Kwolek & Harry Oster

For many years, Columbia University has managed peroxide-forming chemicals in accordance with New York City Fire Department (FDNY) requirements. A recent revision to FDNY's requirements, creating alignment with a National Fire Protection Association (NFPA) consensus standard, brings a change in FDNY's enforcement strategy and, consequently, impacts all laboratories operating in New York City. Effective immediately, all peroxide-forming chemicals must be dated at the time of opening for disposal within 6 months of the opening date. On or before the 6 month date, a request for disposal can be sent to EH&S @ <http://vesta.cumc.columbia.edu/ehs/wastepickup/>.

Historically, the FDNY rule required containers to be dated at the time of opening for disposal within 12 months. FDNY has been increasing its enforcement of the rule change for disposal after 6 month of opening, but is also allowing peroxide-forming chemicals to be tested within 6 months of the documented opening date. Laboratory personnel may test the chemical for the presence of peroxides and if deemed safe for continued use, with the test date documented on the container, the rule allows the laboratory 6 additional months of use (i.e., 12 months in total from initial opening) before disposal is absolutely required. Several commercially available test methods, including commonly used semi-quantitative test strips, are available from laboratory suppliers and testing procedures should be followed carefully when making an assessment as to whether a chemical is suitable for continued use. Laboratories must keep a record of and document their testing procedures.

FDNY rules, in fact, regulate all time-sensitive chemicals. EH&S is developing guidance for research laboratories to use in making assessments of common time-sensitive chemicals. Until guidance is released, please follow manufacturer's recommendations for storage (including temperature), handling and shelf-life.

Further information, and a list of common time-sensitive chemicals, can be viewed on the EH&S [website](#). Contact an EH&S [Research Safety Specialist](#) as soon as possible if you suspect a time-sensitive chemical has exceeded the prescribed storage/use limits or is otherwise unsafe for use. Again, if a container is expired and/or no longer safe to use, EH&S must be contacted to arrange safe disposal (<http://vesta.cumc.columbia.edu/ehs/wastepickup/>).

## Vacating a Laboratory Efficiently and Effectively by Marlyn Duarte

Vacating a laboratory due to relocation or renovation requires a significant amount of planning and coordination. The amount of work and time involved in the vacating process may be stressful for the laboratory staff. EH&S will work closely with the laboratory's designee(s), as well as Facilities Management & Space Planning, to help prepare for the safe and efficient turnover of the space and make the process simpler and faster.

The "[Procedures for Vacating a Laboratory](#)" instructions provide important reminders that guide the laboratory through the safety-related aspects of the process. These items include proper disposal/decontamination of radioactive material (RAM), proper disposition of controlled substances, and appropriate disposal of chemicals and regulated medical waste and sharps. Following the laboratory's completion of the vacating procedures, EH&S will issue "Clearance" to your department and/or Facilities Management to proceed with the next steps in the vacating process. Please contact a Research Safety Specialist to help you in your preparation: <http://www.ehs.columbia.edu/LabAssignment.html>.

## The Case for Personnel Radiation Monitoring by Dae In Kim

New York City Department of Health and Mental hygiene (NYCDOHMH) radiation control regulations require that personnel monitoring be performed if a worker is "likely to receive, in 1 year...doses in excess of 10 percent of the applicable limits." In addition to NYCDOHMH regulations, the International Commission on Radiological Protection introduced the ALARA principle which dictates that measures should be taken by institutions to reduce radiation exposure of all personnel to levels As Low As Reasonably Achievable (ALARA). Monitoring with dosimeters is a crucial component of meeting the NYC regulations and ALARA principle.

Using dosimeters properly, it is possible to accurately monitor worker exposure and develop and maintain safe work practices. EH&S issues approximately 40,000 dosimeters annually to assess workplace exposure to radiation. Two types of dosimeters are typically issued: whole body dosimeters evaluate dose to the trunk of the body and ring dosimeters estimate dose to the extremities. Fetal badges may also be assigned to declared pregnant workers who are concerned about fetal exposure to workplace radiation. Dosimetry reports are produced either monthly or quarterly, depending on the selected dosimeter and individuals showing exposures at a level that warrants an investigation or any overexposure will be notified immediately by the Radiation Safety Officer (RSO).

It is also important for you to follow up your personal dose report. If you notice a sudden increase in your radiation dose, such as a change from 5 mrem to 50 mrem for a given quarter, or if you have any question or concern about your dosimetry records, please contact the RSO at 212-305-0303 (CUMC) or 212-854-6749 (Morningside).

## Kicking the Habit at CUMC by Yvonne Wojcicki

As the enjoyable outdoor weather continues into late summer and early fall, it is important to remind the entire Columbia University Medical Center (CUMC) community that the campus wide smoke free policy remains in effect during and after work hours - and applies to everyone (faculty, staff, students and visitors). Everyone's cooperation to promote a smoke free campus, inside and out, is needed. Launched in August 2009, the CUMC smoke-free policy prohibits smoking on all CUMC property, both indoors and outdoors. This program was developed in collaboration with New York Presbyterian Hospital to ensure a clean, safe, healthy and productive environment at CUMC, and to fully comply with New York State and City codes and regulations.

Please read more about CUMC smoking-related research studies and statistics @ <http://www.cumc.columbia.edu/smokeFree/policy.html>. If you are interested in quitting, smoking cessation information can be found @ <http://www.nyc.gov/html/doh/html/smoke/smoke2-cess.shtml> and via the New York Smokers' Quit Line at 1-866 NY QUIT (1-866-697-8487).



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Do you have a suggestion for a future *SafetyMatters* article? Do you have a comment on something you just read? Please share it with us at [newsfeedback@columbia.edu](mailto:newsfeedback@columbia.edu)