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# ENVIRONMENTAL HEALTH AND SAFETY

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THE UNIVERSITY OF  
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## Have You Dodged a Bullet Recently?

Studies show that accidents are often preceded by near misses. A near miss is an event that could have resulted in an injury or illness – but did not evolve to that point. Near misses provide insight into what could happen if these events or acts recur; if we don't pay attention to these warnings and take action, someone can be hurt or facilities destroyed. With your help, we would like to utilize near miss data to encourage implementation of corrective actions **before** accidents and occupational illnesses occur.

If you experience or witness a near miss, we encourage you to report the event to EH&S. Your participation will help others avoid injuries and reduce risks to our facilities. The [near miss report form and instructions](#) are available on the EH&S web site.

*Please report all [accidents](#) and near misses.*

### More On-line Training Coming in 2012

In addition to our existing on-line training for hazardous waste generators, Katherine Shorter and Linda Sadler will soon complete work on bloodborne pathogens course that will be available in D2L.

We'll let you know as soon as enrollment is open so that you can take advantage of this convenient system for your annual training. Check out other [training options](#) through our Web site.

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### UCLA, Professor Indicted in Lab Death

Anyone who attended our lab safety seminar will likely remember hearing about Sheri Sangji, the 23 year old UCLA lab worker who died as a result of burns received in a 2008 laboratory accident. The Los Angeles District Attorney's Office filed criminal charges in December, 2011, against UCLA and Dr. Patrick Harran, the faculty member in charge of the lab where Ms. Sangji worked.

The felony charges allege failure to correct unsafe working conditions in a timely manner, failure to train employees on proper chemical safety, and failure to require the use of appropriate personal protective equipment in the laboratory. If convicted Dr. Harran could receive up to 4.5 years imprisonment, and UCLA could be fined up to \$1.5 million in addition to an earlier civil penalty of \$31,875 that was levied by Cal OSHA.

*Is everyone in your work area appropriately trained, provided with personal protective equipment, and supervised?*

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## Have You Hugged a Tree Lately?

An [EPA-funded report](#) entitled “Assessment of Ecosystem Services Provided by Urban Trees: Public Lands Within the Urban Growth Boundary of Corvallis, Oregon,” Phillips, et al, 2011, provides insight into the tremendous value of trees. By reducing stormwater runoff and air pollutants, sequestering carbon dioxide, saving energy, and improving aesthetics, trees provide us with economic, health, and emotional benefits.

*Go ahead, hug a tree and let it know how much you appreciate what it does for you.*

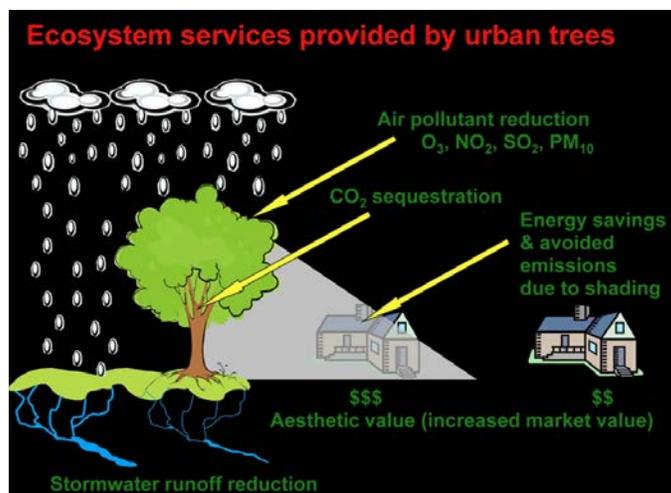


Illustration used by permission of Donald Phillips, Ph.D., U.S. EPA

## It's Enough to Make Your Head Spin

An article in the December, 2011, [Lab Manager](#) magazine calls attention to the importance of properly maintaining our centrifuges. The article reminds us to routinely inspect rotors for signs of damage or fatigue, keep rotors clean, and perform preventative maintenance (PM) as recommended by the manufacturer. Keeping a centrifuge log can be especially helpful in tracking use time, documenting cleaning, and scheduling PM.

## Waste Reduction Updates Due Soon

If your department generates hazardous waste on a regular basis, you must have a written waste reduction plan. Tennessee law requires all Large and Small Quantity Generators of hazardous waste to update their plans annually by March 1; however, updating them earlier will ensure that your hazardous waste annual report reflects the most accurate information from your waste reduction plan.

***Failure to comply with the Tennessee Hazardous Waste Reduction Act of 1990 can result in civil penalties up to \$10,000 per day of violation.***

## Scary Events at Other Institutions

### *University of Chicago*

A UC researcher was diagnosed with a skin infection caused by *Bacillus cereus*, an agent being studied in the lab – but not used by the person who was infected. According to [sciencemag.org](#) a UC spokesman speculated that some of the agent may have been spilled by another researcher, then spread to a skin wound on the infected person.

The lab was closed for decontamination after this event, and the research moved to an off-site lab. Another UC researcher died in 2009, having contracted

an attenuated form of the plague bacterium, *Yersinia pestis*, used in his lab.

### *University of Florida*

Two explosions in the same UF lab since last October resulted in serious injuries and suspension of activities in the lab. The most serious injuries were sustained by a 27 year old graduate student who received chemical burns to his face, two finger tips said to be secured only by some skin, deep cuts to a hand, and glass embedded in his chest and abdomen. The student was apparently working with chemicals that included sodium azide and an acid [scary]; the addition of water preceded the explosion.

### *University of Pittsburgh*

A 30 year old post doc at Pitt received injuries to his eyes, face, arms, and chest as a result of a lab explosion. The post doc, who was wearing safety glasses and a lab coat, was performing a dithiane hydrolysis reaction in a mixture of tetrahydrofuran, water, and 2,6-lutidine using mercury (II) perchlorate hydrate.

The explosion is thought to have occurred due to the procedure being scaled up without sufficient solvent being added, resulting in localized overheating of the perchlorate.

## Scary Events (continued from page 2)

### *University of Wisconsin - Madison*

Forty liters of the flammable solvent tetrahydrofuran (THF) was spilled in a UW-Madison biochemistry lab when a shelf collapsed as a graduate student was reaching for a bottle of THF. With the exception of a minor cut, no one was injured. [Wow, just think what could have happened if the vapors from this stuff had reached an ignition source.]

## Did You Know?

No more than 90 minutes before the beginning of an indoor campus event at which the crowd is expected to exceed 300, the administrative official, chair, or director of activity responsible for the event, or designee, is required to inspect every required exit, way of approach, and way of departure from the place of activity. If the inspection reveals that any means of egress is unsuitable for immediate use, the scheduled program is not to begin, and people are not to be admitted until necessary corrective action has been completed.

Immediately prior to the beginning of the event, the administrative official, chair or director of activity, or designee, must also orally notify all attendees concerning the location of exits to be used in case of fire or other emergencies. Read University Policy [UM1293](#) for complete requirements.

## Radioactive Marked Vials Stop Idaho Traffic

Traffic in Idaho Falls, Idaho, was detoured for a short time in September, 2011, due to the discovery of some tubes with radioactive markings. The tubes were labeled as containing Iodine-131, a gamma ray emitting radioisotope commonly used in medical facilities. Found in a gutter, the tubes were reported to have fallen from a medical waste truck. [Whoa! Let's not use that contractor.]

***Don't forget to obliterate markings from empty hazardous materials containers prior to disposal.***

## SOP It! SOP It Right Now!

Do you have written Standard Operating Procedures (SOPs) for tasks in your work area? Investigations of many serious accidents, including those at UCLA and Texas Tech, have shown that passing along



Dr. Lynn Jones and Dr. Clarisse Muenyi discuss the protocol (SOP) for a new research project.

work procedures verbally is risky business – especially when the stakes are high.

The November 28, 2011, issue of *Chemical and Engineering News* contains an interview with Texas Tech professors Dr. Louisa Hope-Weeks and Dr. Brandon Weeks. Hope-Weeks' lab was the focus of a federal investigation after an explosion injured a graduate

student's eye and severed 3 of his fingers. Hope-Weeks is quoted in the article as stating, "After the accident, what became clear ... was that oral communication ... was never enough to ensure they understood." Now, both professors ensure that students learn to prepare written protocols (SOPs) for lab procedures; they review the protocols, discuss them with the students, and then visit labs to ensure that procedures are being performed appropriately.

EH&S has a [SOP template](#) available on-line, and we will be happy to provide guidance as you prepare SOPs. So, what's StOPping you?

### Sources of Assistance

Director, EH&S .....678-4672  
Radiation Safety Officer ..... 678-4672  
Hazardous Materials Specialist .... 678-2044  
Laboratory Safety Specialist ..... 678-2740  
Fax ..... 678-4673  
Emergency (Fire, Police, Ambulance,  
after hours Chemical/Radiological) 678-4357  
EH&S Web Page ...<http://ehs.memphis.edu>

## Some Helpful Suggestions

We all have a legal obligation to provide a safe and healthful work environment. We would like to offer a few helpful suggestions and tools to help you with this obligation.

✓ **Do a risk assessment**

You can't appropriately address safety issues until you know what the risks are, so [evaluate the work area](#) and document the risks. EH&S has [tools available](#) to help with this task, and we can provide guidance in using those tools.

✓ **Provide appropriate training**

Once you know the risks and who is exposed to them, it's time to provide appropriate training. EH&S has a broad range of hazardous materials [training available](#) in several formats (e.g., in person, videos, on-line, CD-ROM); Employee Safety and Health offers training on other safety topics.

✓ **Provide Personal Protective Equipment**

After risks have been reduced through process and material changes, engineering controls, and work practices, it's time to select and issue PPE appropriate to the employee and the risks. There's a [tool](#) to help with that, too.

✓ **Do self-inspections frequently, and correct any deficiencies in a timely manner**

Doing regular self-inspections ([chem](#), [bio](#), [rad](#)) of your work area can supplement EH&S inspections and audits by helping you see and correct problems before there is an accident.

✓ **Maintain thorough documentation**

Keep copies of risk assessments, training records, exposure control plans, hazardous waste inspection logs, chemical inventories, etc., for inspection by regulatory agency personnel. Many a violation has been cited by state and federal inspectors because records were missing or incomplete.

✓ **Report accidents and near misses**

✓ **[Contact EH&S](#) if you need help**

## Meth Labs Driving Up Healthcare Costs

An Associated Press survey shows that up to one third of burn unit patients in highly active methamphetamine producing areas may have received their burns as a result of making meth. Many of those injured in meth-related explosions are uninsured, costing taxpayers an average of \$130,000 per hospital stay.



Popularity of the “shake-and-bake” method of making meth, a crude, one-container process where chemicals are mixed in containers like 2 liter drink bottles, means that this problem will likely get worse.

*Are your chemicals, biological agents, and radioisotopes securely stored to prevent theft or misuse?*

## Do You Have Comments or Suggestions?

We are always interested in your comments and suggestions. Please don't hesitate to give us feedback on any product or service offered by EH&S.

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