

Biosafety: A Continual Evolution

Megan Marks



The words "safe" and "safety" are ideal concepts which, while desirable, are unattainable in absolute terms. Practical planning for safety is often hampered by the fact that safety cannot be measured directly and is performed by evaluating the opposite, namely, risk. Biosafety is an exercise in recognizing what the biological risks are and then introducing procedures, practices, equipment, and facilities to control the identified risks or reduce them to acceptable levels.

Recent advances in biomedical research, such as genetic engineering, cell fusion, immobilized cells, and enzymes, drive the evolution of applied microbiology. Technology advances so rapidly that it is not possible for Environmental Health and Safety (EH&S) to anticipate each use of potentially hazardous biological systems and to monitor, appropriately, every operation that involves biological materials. It is essential for the researcher to have sufficient knowledge to identify the potential hazards associated with the work and coordinate with EH&S to institute procedures and practices necessary to conduct the activity in as safe a manner as possible.

EH&S is now providing biosafety training to any individual who plans to use biological materials at the university. Please refer to the EH&S website for training dates and times.

Workplace Violence

Jim Gindlesperger

Unfortunately, workplace violence is becoming all too common. At CMU no act of workplace violence will be ignored or tolerated. You should learn the warning signs of workplace violence, so you can protect yourself and others.

Workplace violence can come from either external or internal sources. External sources include former employees, stalkers, spouses or relatives of students or employees, or just someone who comes onto campus. Obviously, it is impossible to know every person who enters campus, making us vulnerable to this type of violence.

Often in workplace violence cases, someone who knows the perpetrator later admits having seen warning signs that violence was possible. Studies have shown that typical warning signs include:

- ✓ Making direct or indirect threats of violence to someone on the job
- ✓ Expressing irrational thoughts and behaviors
- ✓ Fascination with weapons
- ✓ A history of violence, either on or off the job
- ✓ Often disagreeable or uncooperative
- ✓ A loner with a disdain for authority
- ✓ Seeing the job as everything in life
- ✓ Blaming others for his or her problems
- ✓ A belief that the employer owes him or her something

If you see any of these warning signs in a coworker, report it immediately to your supervisor. Remember, the more specific the threat, the more credible it is and the more likely it is to become a reality. Since no one knows which threats will be acted on, always treat any threat the way you would an actual incident, and report it immediately.

Workplace violence is preventable. Watch for warning signs and report your suspicions.

Dangerous Road Conditions

Celia Rajkovich



April Showers bring May flowers but they also bring dangerous road conditions.

Hydroplaning is one of the biggest hazards on wet roads. Hydroplaning occurs when a car's tires lose contact with the pavement and the car skates across the road. Experts say that this can happen on as little as a 1/4 inch of water or when the water on the road surface is deeper than the tread on your tires. One way to check for dangerous hydroplaning conditions is to look to see if the car in front of you is leaving tire tracks on the wet pavement. If it isn't, slow down!

It is important to make sure that tires are properly inflated and have a proper amount of tread on them. Cruise control is especially dangerous to use in any slippery situation: Rain, snow or ice. Most cruise controls are designed for normal, dry conditions and the car cannot sense when the wheels are spinning uselessly. If your car begins to careen out of control the cruise control will continue to accelerate as it tries to maintain a set speed. It could easily put your car into a sideways spin and cause the vehicle to flip.

Other tips include: stay toward the middle lanes because water tends to pool in the outside lanes, increase your following distance in wet weather, keep both hands on the wheel, stay alert and look out for standing water. Avoid using your brakes; if possible, take your foot off the accelerator to slow down.

EH&S offers a safe driving course for operators of university vehicles. To sign up for one, call us at 8-8182.

To Reach Us

Telephone: 268-8182

Fax: 268-6976

Web: <http://www.cmu.edu/ehs>

Offices: 3rd floor, FMS Building

What to do with an "Empty" Container?

Jeff Harris

Before you throw away an empty chemical container, you should check to ensure these criteria are first meant:

- 1) Empty the container in an approved fashion—through using all contents or transferring the contents to another container. Do not dispose of any hazardous materials into the drain unless you are certain that this is approved for your material.
- 2) Rinse the container thoroughly to remove any traces of the chemical. Water or an appropriate solvent may be needed for this activity. Laboratory workers should consult EH&S when dealing with containers of highly hazardous materials.
- 3) Remove, deface, or black-out the original label and any labels you may have added before discarding any empty chemical container. This will ensure that anyone coming upon your container (in a dumpster, for instance) is not confused as to whether there are any traces of the chemical remaining.
- 4) Cleaned and "de-labeled" plastic and *un-broken* glass containers can go into the trash.
- 5) Recycle plastic or glass containers.
- 6) Place broken glass containers in a cardboard box, sealed with tape, labeled as "Broken Glass"...the box can then be put into the trash. This will protect CPS staff from injuries from sharp items placed into a waste can.

If you have any questions or if there are any concerns, please contact EH&S (8-8182).

Cigarette Butts Are Litter, Too



Madelyn Miller

Humphrey Bogart used to strike a dashing image as he flicked his cigarette into the street. This act of defiance gave his audience the impression that he didn't take any guff from anyone. But Humphrey was littering. I wonder who picked up all of those butts?

Here at Carnegie Mellon, our grounds people are losing the war with this insidious form of litter. Take a look around. Filters are everywhere. They don't biodegrade easily. On average it takes four years.

Smokers will make a more positive impression than Mr. Bogart did if cigarettes end up in urns rather than on the ground. Please dispose of cigarettes properly.

By the way, Mr. Bogart died of lung cancer.

Illegal Shipping

Madelyn Miller

Illegal shipping of hazardous or infectious materials can result in fines and criminal penalties

It is important to raise the awareness at our university of the ramifications of illegal shipping of hazardous materials. Shippers of specimens and samples should ask for guidance either from Mellon Stores or Environmental Health & Safety if there are questions about the proper methods for shipping. Improper shipping of hazardous materials is punishable by fines and criminal penalties. See the Associated Press news article below:

A former Texas Tech professor was sentenced Wednesday to 24 months in prison for convictions related to his handling of plague-causing bacteria.

Dr. Thomas C. Butler, whose report of 30 missing vials of the bacteria in early 2003 sparked a bioterrorism scare, will serve two one-year sentences on 47 convictions.

Butler also was fined \$15,000 and ordered to pay \$38,675 in restitution.

Butler faced up to 240 years in prison for convictions on 47 of 69 charges that stemmed from an investigation after his January 2003 report of missing plague. He also faced fines up to \$11.7 million.

Prosecutor Bob Webster said he was satisfied with the sentence.

"It was a fair sentence that sent an appropriately strong message to the scientific and academic communities," he said. "The government will do what it takes to ensure that the public is safe from the blatant disregard of laws intended to protect them from unwitting exposures to deadly agents."

A jury found Butler guilty in December of mislabeling a Federal Express package that contained plague samples he sent to Tanzania and of their unauthorized export to the African country.

New EH&S Employee

Jim Gindlesperger



A new employee has joined EH&S. Andrew Lawson, our new Biological Safety Technician, comes to us from West Virginia University. Andrew will be working out of our Mellon Institute office. Please join us in welcoming Andrew to Carnegie Mellon.

Hazardous Waste Generation

Mark Banister



For many people on campus, their thoughts on the hazardous waste that is generated by their work ends when the waste is removed by our waste contractors. It is a necessary evil, however, to consider what this activity costs the university. Since the beginning of the fiscal year, the costs of hazardous waste disposal have risen sharply (up 23%), after remaining steady for several years. The university is committed to handling and disposing of this waste properly regardless of cost, though there are a number of activities you, the generators can take to help us control this burden.

- In general, the cost of disposal of a hazardous material is three times the cost of the purchase of the product in the first place. Don't order hazardous chemicals that you don't anticipate using completely—buying in bulk only adds to the waste burden if you don't have a use for the excess chemical.
- Always label your chemical properly—the identification of unknown materials is often more costly than the disposal itself.
- Use older materials first, before they expire and must be disposed of without being used.
- Store and use hazardous materials properly so they don't spill. Spill clean-up materials are VERY expensive to dispose of.
- Store and handle fluorescent light tubes so they don't break. Disposal of the broken lamp debris is much more expensive than disposing of the intact light.
- Always order gases in returnable bottles. When gas bottles are purchased outright and must be disposed of, the cost may be as much as \$1200.

Training, April – June, 2004

Jim Gindlesperger



Call Extension 8-8182 to register for a training class, or to request that a particular class be conducted. Course descriptions can be found on the EH&S website.