



Lab Notes

January 2001

IUPUI ENVIRONMENTAL HEALTH AND SAFETY

Lab Safety Coordinator

Working behind the scene to help promote safety in laboratories is your Lab Safety Coordinator (LSC). Depending on the size and location of functional units, most departments have appointed a person on their staff to serve as their LSC.

What does an LSC do? In meetings held with LSCs in November, 2000, the following items were mutually agreed upon as the primary responsibilities of the position:

- C Insure that all staff attend required safety training programs;
- C Facilitate required training updates;
- C Serve as a conduit for information between Environmental Health & Safety (EHS) and their department;
- C Update EHS when there are changes in departmental staff;
- C Distribute Lab Safety Inspection memos and insure that 'required' changes are made; and
- C Point out safety issues to fellow staff members.

It is important to recognize that your LSC is there to help you meet safety regulations and guidelines. The position is usually one that has added responsibilities to the LSC without allocating a lot of time to meet the designated responsibilities. Please keep in mind that the LSC is there to help facilitate safety activities and not necessarily to perform all of the tasks that need to be accomplished. Also, if your lab is not represented by one of the departments listed, please call 274-2829 for more information.

<u>Department</u>	<u>Name</u>
Anatomy	Bang Hwang
Biochemistry	Roger Roeske
Biology (IUPU-Columbus)	Ginger Louder
Biology (IUPUI)	Kim Burrows
Cardiology	Alonso Moreno
Chemistry	Keith Anliker
Clinical Pharmacology	Mitch Hamman
Dermatology	Dan Spandau

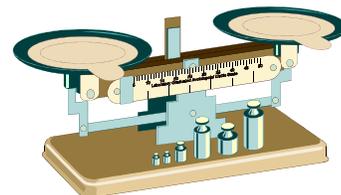
Endocrinology (Wishard)	Reid Gibson
Endocrinology (Non-Wishard)	Bob Considine
<u>Department</u>	<u>Name</u>
Experimental Oncology	Brenda Shelton
Gastroenterology	Ruth Ann Ross
Geology	Vince Hernly
Hematology/Oncology	Colin Crean
Infectious Disease (Non-Wishard)	Barbara VanDerPol
Infectious Disease (Wishard)	Todd Garringer
LARC	Cathy Vogelweid
Medical Genetics	Steve Dlouhy
Microbiology	Steve Larsen
Nephrology	Melanie Hosford
OB/GYN	Robert Bigsby
Ophthalmology	Shao-Ling Fong
Oral Health Research	Robin Johnson
Pathology	Debbie Walters
Pediatric Metabolism	Misty Guay
Pediatric Neonatal	Larry Auble
Pharmacology/Toxicology	Bruce Henry
Physics	Connie Ely
Physiology	Nancy Christian
Psychiatric Research	Stacy Walton
Psychology	Nancy Badia-Elder
Pulmonary	Pat Smith
Radiation Oncology	Brendon Mayhugh
Radiation Safety	Jeff Mason
Rheumatology	Ron Herman
School of Dentistry	Jack Schaaf
Surgery	Richard Sidner
Toxicology Division	Lisa Kamendulis
Urology	Lance Brown

An Ounce of Prevention . . .

How often do we take the time, even when we have recognized a potentially hazardous situation, to alleviate the risk and prevent an accident from happening? Proactive actions often require some time and planning to help eliminate being in the reactive mode when things don't go as planned. Accidents can happen in any laboratory, sometimes with disastrous results. But **every accident has a cause** and most accidents can be prevented if you know how to recognize a potential accident and take steps to prevent it.

Be on the lookout for these "Accidents Waiting to Happen":

- C No eye protection or the wrong type of eye protection for the job
- C No gloves, improper gloves or gloves that are damaged or contaminated from previous use
- C Not knowing what to do in an emergency
- C Not knowing the signs and symptoms of overexposure and what to do if overexposed
- C Improper use of fume hood or not verifying air flow
- C Storing food in lab refrigerator, eating in the lab or using lab equipment in place of cups or plates
- C Frayed or damaged electrical cords
- C Flammable liquids not stored in appropriate cabinets or stored in household-type refrigerators
- C Unsecured compressed gas cylinders
- C Incompatible chemicals stored together
- C Aisles in the lab or storeroom blocked by equipment or chemicals
- C Safety showers or eyewash stations that are blocked by equipment or supplies
- C Physical hazards, such as unguarded moving belts or pulleys or unattended heat sources such as open flames
- C Believing that 'just this once' is a justifiable reason for unsafe behavior



Adapted from *Improving Safety in the Chemical Laboratory*, Jay A. Young, Ed.

Check the EHS website-
<http://www.ehs.iupui.edu/> -
 for the complete 2001
 safety training program
 schedule.

NEW EMPLOYEE TRAINING SCHEDULE	
Union Building Roof Lounge - 6th Floor	
General Safety -For all new employees. 10:00- 12:00 Noon	Jan. 8, 22, 29, 2001 Feb. 5, 12, 19, 26, 2001 Mar. 5, 12, 19, 26, 2001 Apr. 2, 9, 16, 23, 30, 2001
Union Building (North) - Room 542	
Bloodborne Pathogens -For all employees 2001 who may be exposed to human blood, body fluids or tissue. Session held the 2nd & 4th Tuesday of every month from 8:30 - 9:30 A.M.	January 10 & 23, February 13 & 27, 2001 March 13 & 27, 2001 April 10 & 24, 2001
Chemical Lab Safety - For all employees who work with chemicals in laboratories. 13, 2001 Sessions held the second Tuesday of	January 10, 2001 February March 13, 2001

U.S. ENVIRONMENTAL PROTECTION AGENCY INITIATES "MULTI-MEDIA INSPECTIONS" FOR COLLEGES AND UNIVERSITIES

By Kevin Mouser

The United States Environmental Protection Agency (EPA) has recently initiated an effort to evaluate how well colleges and universities adhere to appropriate federal and state environmental regulations (air, water, polychlorinated biphenyl (pcb) management, underground storage tanks, hazardous waste management, etc.). In this light, the different regions of the EPA have initiated a multi-media inspections to determine the compliance status of several college and university campuses.

During a multi-media inspection, a team of federal and state environmental regulation experts visit the facility and conduct a comprehensive environmental inspection. In a recent multi-media inspection at the University of Michigan, a team of eleven inspectors spent five full days on the Michigan campus.

While much of a multi-media inspection centers on programs managed by the Department of Environmental Health and Safety (EHS), the inspections frequently have a special emphasis on the management of hazardous wastes at the point of generation. It has been reported that inspectors have, in fact, visited most if not all of the laboratories on the campuses inspected.

Unfortunately, EPA has found that several of the institutions they inspected to be lacking in their environmental compliance. Past inspections have resulted in fines levied ranging from \$500,000 to in excess of \$2 million.

How are such fines possible? In many cases it is the cumulative effect of repeated hazardous waste violations - violations that many labs overlook day in and day out. Unlabeled waste bottles. Waste bottles left open when not actively being filled. No documentation of chemical waste disposal activities when it is obvious that wastes are being generated. Each infraction in each lab can be cited and can very readily carry a \$1000 to \$10,000 fine.

Closer to home, The Indiana Department of Environmental Management (IDEM) conducted a campus-wide hazardous waste inspection at IUPUI on December 6, 2000. The one-day inspection focused on the day-to-day handling of campus chemical wastes. While the EHS waste handling practices were found to be well within the requirements of state and federal regulations, the inspection brought home the fact that proper hazardous waste disposal on campus is the collective responsibility of all staff or faculty who purchase, obtain or otherwise store, handle, use or dispose of chemicals.

A representative from IDEM randomly toured seven laboratory locations during the inspection in an effort to observe first-hand the waste handling practices on campus. With a few minor exceptions, the laboratories visited were also found to be in compliance.

The IDEM inspection and the possibility of a formal multi-media inspection brought home the need to remind campus generators of chemical wastes of their responsibilities in handling these materials. The following guidelines are to be considered as the minimum in-lab requirements as required under state and federal law. These guidelines can be found in their entirety in the IUPUI Waste Disposal Guidelines as

distributed through Lab Safety Coordinators and is available on the EHS Home Page.

These requirements include:

- C Use only containers in sound condition (no cracks, breaks, tears, etc.) with tight-fitting, sealing lids. Do not use any container larger than five U.S. gallons without the expressed approval of EHS.
- C Use containers that are compatible with the waste product. As a general rule, use containers of like material as what the chemical(s) originally came in (glass, metal or plastic).
- C Keep the different waste types segregated to the fullest extent possible. (E.g., do not mix aqueous metal wastes together with solvent waste unless required as an integral part of the experiment or procedure).
- C Label the contents of the container at the moment-in-time the material is determined to be a waste. In the case of waste dump jugs, label the container when waste is first added to it. Chemicals in their original containers with intact labels do not need to be relabeled. Self-adhesive labels can be obtained, free of charge, by calling 4-4351.
- C Keep all waste containers, including dump jugs, closed at all times when the container is not actively being filled.
- C Store the waste in secure location of the laboratory under the strict control of the laboratory staff. Isolate the waste as much as possible from high foot traffic areas.
- C Date the container when the container is 90-95% full in such a manner: "Filled 01/02/01". Do not overfill the container.
- C Refer the container to the Department of Environment Health and Safety within three working days of being filled by completing and submitting a "Hazardous Materials Manifest".

Staff from EHS will leave behind a signed copy of the "Hazardous Materials Manifest for Intracampus Transportation" once the pickup of chemical waste is complete. It is recommended that each lab keep their copies for at least three years. These signed copies will serve as documentation that your waste chemicals have been discarded in accordance with University policy and subsequently with state and federal regulations.

An estimated 121,000 pounds of chemical wastes were picked up and processed by EHS during the 1999/2000 fiscal year. Most of this 60.5 tons of chemical waste originated from campus laboratories in containers such as those currently sitting in your laboratory. The sheer volume of chemical wastes generated on campus on an annual basis only reinforces the need for individual accountability in campus chemical waste management. Assistance with your chemical disposal questions and needs is available by calling 4-4351 or 8-3328.

Chemical Storage Options – TEMED and Sigmacote

One ongoing issue that we struggle with in labs is the storage of flammable materials in household-type refrigerators. This is a risky practice due to the potential of vaporization of these materials in the closed space and explosion of those vapors from a spark generated by electrical contacts from the thermostat or light. While this has not happened on our campus, there are many reported incidents at other institutions that have caused injuries and property damage from this type of explosion.

How are these and other flammable materials safely stored? If they must be stored cold, an explosion-safe (AKA flammable materials storage) refrigerator must be used. Unfortunately, many labs have only household-type refrigerators due to the higher cost of the explosion-safe type.

Since the only flammable material stored in the refrigerator for many labs is TEMED or Sigmacote, Sigma was contacted concerning storage options for these chemicals. Dr. Jeffrey Howard responded that storage of both of these materials in the cooler is optimal but it is not necessary. Both of these chemicals may be stored in a solvent cabinet as long as the lab is maintained at room temperature without extreme fluctuations. Dr. Howard states that both chemicals are stable at room temperature for several months.

Due to the moderately low cost of both of these chemicals, it is recommended that they be stored at room temperature if there is no explosion-safe refrigerator available. Date the chemical when received and dispose after several months to insure effective results with its use. If you use TEMED or Sigmacote, look in your refrigerator now and remove these chemicals if they are located in a household-type refrigerator.

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Safety Requires Teamwork - Be Part of Our Team