EHS
FALL 2010
Safety Bulletin
Yale Environmental Health & Safety

Sustainable Green Labs at Yale

Is it possible to work in a sustainable green Yale lab?

It certainly is! Even small changes can make a big difference when they are implemented all over campus. You can get started by participating in the new Yale Green Laboratory Certification Program. Laboratories are unique from other areas on campus in that research is inherently resource dependant and generates a variety of regulated waste materials. This program's purpose is to raise awareness that even small changes in operation and purchasing habits can have a significant impact and work towards creating a positive outcome. This new certification program is similar in format to the Green Office Certification Program that is under development by Yale Sustainability. These efforts are part of Yale's overall plan to reduce greenhouse gas emissions, improve energy efficiency, and lower our collective footprint.

Like the Green Office program, the Green Laboratories Certification program has four levels of achievement (Y – A – L – E). The process begins when a laboratory commits itself to actively participating in this initiative and conducts a self-assessment of their current laboratory practices. Points are earned for successfully verifying and adopting sustainable laboratory practices. Successful achievement of all four levels may require instituting additional practices over time, as well as a sustained demonstration of previous practices. Points and levels are accumulated, as shown below:

Y Commitment by the Principal Investigator and a majority of laboratory members to participate in the program, performing a laboratory self-assessment and the completion of the Green Lab Certification Survey Form

A Based upon the self-assessment, earn a minimum of 40 total points. At least one action item must be completed from each of the categories.

L Meet all of the requirements for an "A" and have earned a minimum of 80 total points. At least one action item must be worth 6 points.

E Meet all of the requirements for an "L" and have earned a minimum of 120 total points. At least one action item must be from the "write in category" and be approved by Green Laboratory Awards Committee as a valid action item with assigned point value.

Laboratories earning all four stages of certification will receive a written certificate of achievement, and special recognition signage for their laboratory. An annual celebration of labs achieving high levels of certification will also be held. To remain a green laboratory, laboratories must be recertified on an annual basis. For more information and a link to the survey, please visit us at www.yale.edu/ehs/sustainability.

FAQ's

When did this start?

In August, 2010 we officially launched the program.

Is the survey and program enrollment mandatory?

No, but our goal is to have every laboratory fill out the survey.

What does the expanded lab recycling program really mean?

Yale Recycling is developing a collection program for lab materials such as chemical glass, plastic or metal containers that have been triple rinsed and their labels crossed out or removed. This will eventually include all containers EXCEPT plastic coated glass bottles, those that previously contained concentrated acids or bases, solid chemicals, or acutely hazardous materials (contact EHS for more information on acutely hazardous container disposal requirements) . Recycling hopes to begin rolling out this program in the next few months.

I filled out the survey and received my current point level - now what?

We will be reviewing submissions and making field visits to assist labs in gaining additional points and to maintain their certifications. In October, certificates will be emailed to each participating lab to proudly display on their wall. EHS will also highlight certified labs in future newsletters, on our website and through an annual celebration.

INSIDE THIS ISSUE	PAGE
Sustainable Green Labs at Yale	1
Autumn Safety Tips	2
New Enhancements for Research Materials Shipping!	2
Laser Pointers: A Public Health Menace?	3
Safety Word Search	3
New CT Cell Phones Law Take Affect October 1st	3
Laboratory Coats	4
Incident Report	4
EHS Training Insert	Insert

Autumn Safety Tips

Leaves are falling and the air is cooling. As autumn comes into full swing, there are multiple safety issues to remember around your home and on the road.

- **Have your chimney cleaned and inspected:** Call a professional and get them to come out to check your fireplace/ woodstove and chimney. They should be cleaned and inspected at least once a year. Creosote builds up in a chimney as it's used, and can lead to a dangerous chimney fire.
- **Give heating systems a check-up:** Change filters, check for leaks and have a tune-up before winter to avoid breakdowns and carbon monoxide problems.
- **Give Space Heaters Space:** Space heaters need space, too. As the weather gets cooler, space heaters come out of their summer hiding places. Remember to leave at least three feet of space around your heater. Unplug it when it's not being used.
- **Check your smoke detectors:** A good rule of thumb is to change your smoke detector batteries when you change your clocks.
- **Test your CO Detector:** During cold weather, your furnace will be running and your windows will be closed, so if there is a problem with the furnace there is a potential for carbon monoxide to build up in your home. Make sure that you have a CO detector near the furnace and at the top of the stairs near any bedrooms. These should be tested regularly to be sure that they are working.
- **Never Heat with an Oven:** On chilly autumn mornings, avoid the temptation to warm the kitchen with a gas range or an open oven door. The unvented products of combustion can quickly build to toxic levels.
- **Replace Expired Fire Extinguishers:** Make sure that the fire extinguisher in your home is still good. If it has expired or discharged, be sure to replace it promptly.
- **Check your home's roof, gutter and downspouts:** Keep roof drains, gutters and downspouts clear of leaves to avoid water backups. Be sure they're clear before snow season.
- **Save your hearing and your sight:** Wear safety glasses and hearing protection when operating a leaf blower. Keep everyone clear of the air stream and the blown materials, which can cause potential injuries.
- **Drive safely:** Use caution on curves. Fallen leaves, especially wet ones, can lead to skids and crashes.
- **Wipers On – Lights On:** Remember, if you turn on your wipers, turn on your headlights. it's the law.

Exciting New Enhancements to the Research Materials Shipping

Beginning in October, all Research Material Shipping requests will be processed through the new eShipGlobal shipping application. No longer will researchers have to fill out the online shipping request forms through the Environmental Health & Safety Shipping website, except for cross campus transfers (e.g. West Campus to Main Campus and vice versa). Trained shippers will not have to wait for approvals and the system will produce all necessary documentation completely filled out, including, airway bills, shipper's declarations and commercial invoices, where applicable. In addition, all necessary labels, including, UN3373, Exempt Human and Animal specimen, Dry Ice, To and From address labels, etc. will all be appropriately generated based on your specific shipment. All International, Chemical and Radioactive material shipments will be entered into the eShipGlobal system and will automatically be forwarded to EHS for approval.

International shipments will continue to be reviewed by EHS for export control licensing requirements and when appropriate EHS will apply for these licenses on the shipper's behalf. Most Chemical and Radioactive material shipments will continue to be shipped by EHS's shipping team as the training commitment to ship these highly regulated items is extremely onerous and costly. If you have any questions regarding these changes please don't hesitate to contact the EHS shipping team at (203)785-3550.

Links:

- Training Requirements Matrix: http://www.yale.edu/ehs/hazmatshiprequirements.htm
- Check your training profile via the Training Management System (TMS)

Laser Pointers: A Public Health Menace?

Are laser pointers a public health menace? Dr. George A. Williams, a spokesperson for the American Academy of Ophthalmology believes so. A 15 year old boy damaged his eyes while playing with a "laser pointer" purchased on the internet. This was reported in a September New England Journal of Medicine. There were two reports of similar incidents in June of this year.

What are the issues? Lasers, including laser pointers, are regulated by the Food and Drug Administration (FDA) and Center for Devices and Radiological Health (CDRH). Devices that are FDA/CDRH certified as laser pointers are considered to be eye safe. They are considered eye safe as the blink reflex provides protection (we blink and turn away from bright light). Laser devices are marketed and sold with power levels of up to 1 Watt! Anything in excess of 0.5 Watts is a class 4 laser. These lasers belong in a research or industrial setting, not in the hands of the general public or youth. The blink reflex is not adequate protection for power levels in excess of 5 mW.

The October issue of Optics and Photonics News addresses another very serious issue. Green laser pointers/laser devices are inexpensive, highly visible, high powered and quite "popular". The reason for concern is the way in which the green laser light is generated. There are two other invisible wavelengths used to produce that green beam. Both are invisible. Because of the process, the invisible laser light can be nearly ten times the power of the green laser light as indicated in the referenced article. In an appropriately designed true laser pointer, there would have been a filter to block the invisible light. It is left out by design in many laser devices, significantly increasing the risk of injury.

Be sure your laser pointer is FDA/CDRH certified and is 5 mW or less in output. Please be certain your children are not playing with laser devices that can potentially damage their vision or that of others. If you have any questions regarding laser pointers or laser safety, please send an e-mail to laser-safety@yale.edu. Our thanks to Prof. Patrick Vaccaro (Chemistry) for bringing the Optics and Photonics article to our attention!

Safety Word Search

S	E	V	O	L	G	L	A	C	I	M	E	H	C	S
T	E	L	E	C	T	R	I	C	A	L	T	S	L	E
O	D	L	E	I	H	S	Y	E	K	A	H	L	D	L
O	H	V	G	E	S	O	P	X	E	O	A	D	N	B
B	R	A	V	G	F	B	U	D	C	F	H	L	U	A
D	E	L	S	I	O	F	R	K	F	C	L	R	O	S
E	E	V	R	P	K	G	N	O	A	I	A	A	R	I
T	N	E	Y	C	I	L	O	P	T	L	C	D	G	D
C	E	C	N	C	E	T	Q	A	A	U	I	I	N	I
I	R	I	Y	E	N	N	G	V	L	A	N	A	I	A
R	G	X	R	R	R	O	T	O	I	R	A	T	N	T
T	I	O	U	B	U	G	C	R	T	D	H	I	I	S
S	Z	T	J	T	B	K	I	G	Y	Y	C	O	A	R
E	E	S	N	F	D	R	A	Z	A	H	E	N	R	I
R	E	S	I	D	U	A	L	R	E	P	M	A	T	F

FIRST AID
BURN
CHEMICAL
DISABLE
ELECTRICAL
ENTRY
EXPOSE
FALLS
FATALITY
RADIATION
GLOVES
GOOGLES
HAZARD
SHOCK
INJURY
KEYS
LOCK
MECHANICAL
RESTRICTED
FIRE
RESIDUAL
SHIELD
POLICY
TAG OUT
TAMPER
TOXIC
TRAINING

New CT Cell Phone Laws

Five years ago CT passed a cell phone bill and on October 1, 2010 the first changes to this law will take effect. Those that break the state's motor vehicle cell phone laws will now pay a higher price if pulled over for a violation.

What has changed:

- Increases to the existing fines are now $100 for a first offense, $150 for a second offense and $200 for each subsequent offense.
- No more 'get out of jail free' card. You will no longer be able to purchase a hands-free accessory before your fine is imposed to have that fine suspended for a first-time offense.
- The law specifies that it is illegal for a driver to type, send or read text messages on a hand-held cell phone or mobile electronic device while operating a moving vehicle. If you're caught texting while driving you are subject to the same fines as drivers who talk on a hand-held device.
- CT will now give 25 percent of the amount it receives from a cell phone or mobile electronic device to the municipality that issues the summons. Your local law enforcement now has a greater incentive to fully enforce the law.

What hasn't changed:

The law prohibiting school bus drivers and drivers under the age of 18 from using either hands-free or hand-held devices while driving was unchanged and remains in effect.

The exemption for police officers, firefighters, ambulance and emergency drivers or members of the military to use a hand-held device in emergency situations or in situations in which they are performing their official duties remains in effect and unchanged.

Laboratory Coats

Lab coats are an important basic piece of attire for those working in laboratories. Properly sized and worn (i.e., buttoned down), lab coats help keep street clothes clean and also serve as an outer protective garment to protect exposed skin and clothing from minor contamination. To help facilitate the routine use of this equipment, Yale Procurement recently renegotiated the university's contract for the laundering of lab coats. This was conducted through competitive bidding and was awarded to Cintas, resulting in a nearly 50% lower price than what was charged by the previous supplier, while meeting more stringent cleaning and environmental criteria.

For more information about the new contract, contact Tim Tinari in Procurement at 432-6698. To establish an account with Cintas for your laboratory, contact Julius Bonilla, Cintas Corporation, by phone (203-481-2321 extension 390) or by email (bonillaj@cintas.com).

CINTAS
THE SERVICE PROFESSIONALS

Environmental Health and Safety is a resource of highly trained safety professionals who serve the entire community. We are dedicated to reducing injuries, accidents and environmental impact, and ensuring compliance. We achieve this by providing high quality training, comprehensive workplace evaluation, managing regulatory information, emergency response and hazardous materials management from acquisition to disposal.

EVALUATION • RESPONSE • COMPLIANCE
HAZARDOUS MATERIALS MANAGEMENT • TRAINING

Environmental Health & Safety
135 College Street, Suite 100
New Haven, CT 06510
Telephone: 203–785-3550
Fax: 203-785-7588
http://www.yale.edu/ehs

Director: Peter Reinhardt

Safety Bulletin Contributors:

Whyndam Abrams
George Andrews
Brenda Armstrong
Deborah Farat
Kimberly Heard
Cathleen King
Robert Klein
Corinne Mancevice

Incident Report

September, 2010

Description: Radioactive material floor contamination event

Radioactive Phosphorus-32 (P-32) contamination on the floor of a large, busy laboratory occurred when an unrecognized drop of material made its way to the floor while a trained, authorized individual performed a P-32 experiment. The unrecognized contamination was quickly spread about the floor by individuals who unknowingly stepped in the contamination and tracked it to other nearby spaces. A different radioactive material user later detected the contamination while performing a required personal survey of herself and her shoes. Upon finding her shoes contaminated, this staff member alerted all others in the vicinity and contacted EHS for assistance.

Resolution:

Numerous EHS staff members responded and performed surveys to determine the extent of the contamination. A section of the hallway adjacent to the affected lab was cordoned off while this initial assessment was performed.

Removable contamination was identified on floors and on some individual's shoes, no personal contamination was found. Decontamination efforts started at 2:00 pm by both EHS and lab staff and by 8:00 pm the same evening the hallway and all labs, except one, were cleared for normal use. The lab where the contamination appeared to have originated was restricted from access overnight. Decontamination was completed the following day at which time the lab was released for unrestricted use.

Low level, fixed floor contamination was identified in three carpeted non-lab areas including an office, a computer room and a seminar room. The contamination in theses spaces was labeled, covered and secured, or the carpeting was removed and replaced. A few floor mats were also identified with very minor contamination. These mats were collected and removed from service. All hallways on every floor throughout the affected building were surveyed and no contamination was detected.

Lessons Learned:

The personal and post-experimental surveys performed by the individual responsible for the contamination were not performed carefully enough. Complete personal and post-experimental surveys are required to be performed during and following each and every use of radioactive material. These surveys need to be performed slowly and carefully with an appropriate and well working instrument. Personal surveys should include lab coat, hands and wrist area, clothes and shoes. Shoes are an excellent indicator of floor contamination. Post-experimental surveys should include the areas where material was used including both the lab bench and the surrounding floor. Always notify EHS Radiation Safety in the event of personal contamination.

EHS Safety Training Information

Biosafety Training

Mandatory for employees prior to initiating work with agents classified at Biosafety Levels 1 and 2. Available online and classroom.

Biosafety Level 3 Initial

Mandatory for employees prior to initiating experiments with agents classified at BL2+, BL3, or BL3+. Classroom only.

Bloodborne Pathogens

Required annually for laboratory and clinic personnel working with human materials, including blood, body fluids, unfixed tissues, human cell lines or bloodborne pathogens. Available online and classroom.

Chemical Hazardous Waste Training

This is an interactive training course in chemical waste management on the proper collection, storage and labeling of chemical wastes. Available online only.

Chemical Safety for Laboratory Personnel

This required training covers the hazards of chemicals in the workplace, including information on hazard classes, exposure limits, and personal protective equipment. Available online and classroom.

Dry Ice Training

This mandatory course is designed to fulfill performance-specific training requirements for employees sending, transporting, or receiving dry ice with no other hazardous materials. Retraining is required every two (2) years.

Formaldehyde Training

Training is required for all workers who are exposed to formaldehyde. This training must be completed annually.

Office and Workplace Ergonomics

If your job requires frequent or heavy manual lifting or if you need information on the setup of a workstation and the prevention of repetitive motion injuries, review the **"Ergonomics @ Yale"** website.

Powered Industrial Vehicles

This annual training is mandatory for personnel who operate a powered industrial vehicle or PIV. Call 203-785-3211 to schedule.

Radiation Safety Training

Mandatory two (2) part training: Basic and Applied, for personnel working with radioactive material or frequenting an area where radioactive materials are stored or used. Employees must first complete the online session "Radiation Safety Basics-Part I" prior to enrolling in the classroom session.

Respiratory Protection

Respiratory protection training and fit testing is required initially and annually for all respirator wearers.

Safe Use of Biological Safety Cabinets

This training reviews the biological safety cabinets, their limitations, proper use techniques, and certification and repair procedures. Available online.

Safety Orientation for Non-Lab Personnel

This course combines three required training classes for non-laboratory personnel: Bloodborne Pathogens, Chemical Safety, and Radiation Safety. This training fulfills the annual requirement for bloodborne pathogen training. This is a classroom only training.

Shipping Infectious Substances – Category A

This is a mandatory course designed to fulfill performance-specific training requirements for employees who do any of the following: package, label, ship, prepare shipping documents, offer packages of hazardous materials to carriers for shipment, transport and/or receive infectious substances. This also fulfills the requirement for shipping materials classified as Biological Substance, Category B, Exempt Human and Animal Specimens and Dry Ice training. Retraining is required every three (3) years.

Shipping Biological Substances – Category B

This is a mandatory course designed to fulfill performance-specific training requirements for employees who do any of the following: package or label shipping materials, prepare shipping documents, offer packages of hazardous materials to carriers for shipment, or transport and/or receive biological substances. This training fulfills the requirements for shipping dry ice. Retraining is required every three (3) years.

Tuberculosis Awareness Training

TB training is mandatory for personnel in a clinical setting with potential exposure to TB positive patients. Available online or classroom.

EHS Web Trainings

Air Emissions Training
www.yale.edu/ehs/onlinetraining/airemissions/airemissions.htm

Biosafety Training
www.yale.edu/ehs/onlinetraining/BiosafetyPartI/BiosafetyPart1.htm
www.yale.edu/ehs/onlinetraining/BiosafetyPartII/BiosafetyPart2.htm

Bloodborne Pathogens for Lab Personnel
http://info.med.yale.edu/bbp

Bloodborne Pathogens for Clinical Personnel
http://info.med.yale.edu/bbpclinical

Chemical Hazardous Waste Training
www.yale.edu/ehs/onlinetraining/hazwaste/chemicalwaste.htm

Dry Ice Shipper's Training
www.yale.edu/ehs/onlinetraining/dryice/dryice.htm

Formaldehyde Training
www.yale.edu/ehs/onlinetraining/formaldehyde/formaldehyde.htm

Laboratory Chemical Safety
http://info.med.yale.edu/chemsafe

Laser Safety Awareness
www.yale.edu/ehs/onlinetraining/laser/lasersafety.htm

Organolithium Compunds Training
www.yale.edu/ehs/onlinetraining/OrganoLithium/OrganoLithium.htm

P. I. Orientation of Yale's Biological Safety Manual, Procedure & Policies
www.yale.edu/ehs/onlinetraining/Biosafety/BioAdmin.htm

Safe Use of Biological Safety Cabinets
http://www.yale.edu/ehs/onlinetraining/safetycabinet/safetycabinet.htm

Shipping Infectious Substances – Category A
http://www.yale.edu/ehs/onlinetraining/categorya/categorya.htm

Shipping Biological Substance – Category B and Exempt Human or Animal Specimens
http://www.yale.edu/ehs/onlinetraining/categoryb/categoryb.htm

Radiation Safety Training
Radiation Safety Basics–Part I Web Training
www.yale.edu/ehs/onlinetraining/RadiationSafety/RadiationSafety.htm

Radiation Safety for X-Ray Technologists
http://www.yale.edu/ehs/powerpoint/radtechs.htm

Tuberculosis Awareness
www.yale.edu/ehs/onlinetraining/TB/TB.htm

Universal Waste
www.yale.edu/ehs/onlinetraining/universalwaste/universalwaste.htm

Workplace and Office Ergonomics
http://www.yale.edu/ergo/

X-Ray Diffraction
www.yale.edu/ehs/powerpoint/X-RayDiffraction.htm

Yale *Environmental Health & Safety*
135 College Street, Suite 100, New Haven, CT 06510
Telephone: 203-785-3550 / Fax: 203-785-7588
www.yale.edu/ehs

The EHS training room is located in the lower level, Room 15, at 135 College Street. To find out upcoming classroom session date and times, visit Yale's training website at: www.yale.edu/training or call EHS at 203-785-3211. EHS offers a wide variety of safety trainings in classroom sessions as well as online. Be sure to complete your Yale training assessment at: www.yale.edu/training to find out what type of training is required for your job duties.