

Laser Pointers: A Public 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. Another teenager damaged his eyes with a high powered “laser pointer.” A British physician reported his vision was affected for several months after he was “zapped” by his 7 year old son.

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). A device marketed as a laser pointer is limited to a maximum of 5 mW in the visible range (400 to 700 nm). The number of laser devices sold as laser pointers is increasing in number and laser power levels. Such devices are marketed as laser pointers when in fact they are not. Many are not FDA/CDRH certified and have no labeling to indicate what the device is. Some come into the country described as toy parts with no indication whatsoever that what is in the package is a laser!

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 2010 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 lasersafety@yale.edu.

Minors In Yale University Laboratories

As the summer approaches, there are numerous safety concerns with the presence of minors in university research laboratories. The university created this policy in order to comply with federal and state regulations. The minor policy and application are intended to assure compliance and optimize student laboratory research experience.

Please be aware that youths aged 12 to 17 may enter a Yale University research laboratory for a one time educational or recruitment purpose. Tours must be conducted with permission of the faculty member responsible for the laboratory and the Department Chair or his/her designee. The faculty member will be responsible for proper supervision and for providing any appropriate personal protective equipment for the visitors. Tours must be supervised at all times while on the premises, and tour participants may not participate in any laboratory activities. Children under 12 years of age are prohibited from entering laboratory areas under all circumstances.

No persons between the ages of 16 to 18 may enter into a Yale University research laboratory except as a university approved educational program approved by the dean of the Yale school where the research will take place and by Environmental Health & Safety. All minor students must complete required safety trainings and adhere to all restrictions imposed by EHS.

Please complete the application for student minors to enter Yale laboratories at http://www.yale.edu/provost/html/Minors_in_Labs_Application.doc

Each minor student must fill out and return the parental consent form to the Principal Investigator. This form can be found at the following link. http://www.yale.edu/provost/html/Minors_in_Labs_Consent.doc

For additional information please refer to the Minors in University Laboratories Policy http://www.yale.edu/provost/html/minors_lab.html.

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The First Fully Certified Green Laboratory at Yale



The green laboratory certification program continues to gain momentum and participants continue to increase their certification levels. We are proud to announce that the first lab on campus to complete all four levels of certification, earning the full Y-A-L-E green laboratory level is the Peabody Museum Vertebrate Zoology laboratory at the Environmental Science Center. The Vertebrate Zoology group achieved this by filling out the online survey <http://www.yale.edu/ehs/sustainability/greenlabssurvey.htm>, and through additional innovative, write-in initiatives earning them a total of 147 points!

Gregory Watkins-Cowell, Museum Assistant for the Peabody Museum, is the leader in applying sustainable initiatives in his laboratory. Greg and others have implemented other sustainable daily practices such as carpooling and utilizing conference calls rather than driving to meetings that take place off campus. The lab staff buys strictly recycled products and will always first check the Yale recycled office furniture list before any new purchase. Old ways of preserving dried specimens using arsenic have also been eliminated.

The lab earned extra points for having an in-lab solvent recycling system. Back in 2009, the Peabody purchased a recovery still for ethanol recycling. They currently operate the still three days a week

and recycle approximately 240 liters a month. The solvent is used for their thousands of specimen jars stored in their historical collections. Some of these jars contained the original preservatives from the 1860's and a massive project was recently completed that changed out the solvents in many of these jars. Not only has the laboratory saved thousands of dollars by not having to buy new solvents, the hazardous waste generated from this laboratory has also been reduced 90%. The payback for the purchase of the recycling solvent recovery unit is less than five years.

Congratulations to the other labs on campus to have recently achieved full certification. They are Dr. Farek Fahmy's lab in Malone Engineering Center room 402 and Dr. Scott Stroebel's lab spaces in Gibbs. The green laboratory program is a great way to involve others in your working unit to make small changes with the potential for great impact. To learn more about this program or to sign up your lab please visit our website <http://www.yale.edu/ehs/sustainability/greenlabs.htm>.

Join today!


Japanese Nuclear Reactor Event Information

The crisis in Japan is still causing concern around the world. For those interested in information on the Japanese nuclear reactor event, here are some links to information:



- International Atomic Energy Agency - www.iaea.org/
- Nuclear Regulatory Commission - www.nrc.gov/japan/japan-info.html
- Health Physics Society - www.hps.org/fukushima/
- MIT Nuclear Engineering - <http://mitnse.com/>
- World Health Organization - www.who.int/en/
- American Nuclear Society - www.new.ans.org/
- National Academy of Sciences - www.nationalacademies.org/
- Nuclear Energy Agency - www.oecd-nea.org/
- Environmental Protection Agency - www.epa.gov/
- Food & Drug Administration - www.fda.gov/NewsEvents/PublicHealthFocus/ucm247403.htm

National Safety Month - June 2011

Sun	Mon	Tue	Wed	Thu	Fri	Sat
 NATIONAL SAFETY MONTH 2011			1 Take a safety training course!	2 Conduct an at-home fire drill.	3 Remember! Wipers on, lights on. It's the law!	4 Use reflective tape/clothing when walking or riding at night.
5 Clean dryer lint traps frequently to lower the risk of fire.	6 Post emergency phone numbers by your phone and in common work areas.	7 Slow down at crosswalks and stop for pedestrians crossing.	8 Bring safety home. Discuss safety concerns with friends and family.	9 In CT "Click It or Ticket". Always wear your seatbelt.	10 Check garages and sheds regularly for signs of pest infestation.	11 Take all your old paint cans, aerosol cans and cleaning solutions to your nearest hazwaste facility.
12 Check electrical cords for splits, fraying and broken prongs. Don't overload electrical outlets.	13 Decontaminate work surfaces daily to prevent the spread of viruses.	14 Test and replace smoke alarm batteries every six months.	15 Check out the EHS Universal Waste program. Don't throw before you know.	16 When lifting, use your legs and keep the weight of objects close to your body.	17 Take a few minutes to relax and decompress after a stressful day.	18 Replace your home furnace filters.
19 Post a safety message on Facebook or Twitter.	20 Check to be sure filing cabinets are anchored securely to prevent tipping.	21 Replace your car windshield wipers.	22 Know your escape route and where to meet your coworkers outside the building.	23 Keep all tools in good condition and keep all guards and shields in place.	24 Offer a hand if you notice someone lifting a heavy object.	25 Check extension cords. Replace if frayed or damaged.
26 Move Over America! Slow down when approaching a stopped emergency vehicle. Move over one lane if possible.	27 Prevent falls in the workplace by keeping clutter and debris out of walkways and workspaces.	28 "Phone in One Hand, Ticket in the Other." CT campaign against distracted drivers. Show your support.	29 Remember to always wear appropriate PPE, whether you're at home or at work.	30 While driving, check your blind spot for motorcyclists, especially at intersections.	Make a difference this National Safety Month! Your small acts of safety can have a big impact on saving lives. Be part of A Million Acts of Safety.	

Access to University Laboratories and Research Support Facilities

Laboratory research often involves potentially hazardous and regulated materials, such as biological and chemical agents, toxins, and radioisotopes, and potentially hazardous equipment. For this reason, regular access to Yale laboratories and research support facilities is restricted to authorized laboratory personnel, including faculty, staff, postdoctoral associates and fellows, and students whose presence is part of their normal work, supervised research or coursework, or is a consequence of normal academic interaction and collaboration or other University business.

Other employees and students, as well as individuals from other academic or research institutions, business organizations, governmental agencies, and vendors, may visit Yale laboratories and research support facilities on a short term, infrequent basis as long as there is an academic, business, or educational purpose for the visit. Faculty members, laboratory managers, and their designees are responsible for making appropriate arrangements for such visits based on considerations of safety and non-disruption of research activities, and have the authority to deny access to non-authorized personnel. Some laboratories and research support facilities have more restrictive access policies and procedures. In this regard, visitors may not enter any laboratory, animal, or clinical facility that requires specialized training and/or a Yale appointment to gain access without preapproval from all applicable entities (EHS, IACUC, etc.).

Visitors to Yale laboratories or research support facilities must be escorted by laboratory personnel. As relevant, a briefing should be provided regarding activities currently underway in the lab, where not to touch (keeping in mind that potential hazards may not be obvious to visitors), what to do in case of an emergency, and exit routes. Under some circumstances, visitors may be asked to wear personal protective gear appropriate for the hazards present in the laboratory or research facility.

Visitor access under the conditions described above does not constitute authorization to conduct research in a Yale laboratory or research support facility. Performing research in these facilities requires a formal Yale appointment and completion of all appropriate safety and compliance training. *Policy dated March 20th, 2011*

Researcher Reminder

Reminder to All Researchers Working with Controlled Substances

Please remember that all investigators working with controlled substances are obligated by federal and state law to maintain accurate records of their inventory and each use. In addition, on or about May first of every odd numbered year, each laboratory must also perform an additional physical inventory of their entire stock of controlled substances. The type, strength, and quantity of all controlled substances must be recorded at this time, and the person who conducted the inventory must also date and sign the record. Researchers do not need to submit or otherwise forward this inventory, but it must be maintained in your laboratory for at least three years, separate from other records and readily available for potential regulatory review from either the federal Drug Enforcement Administration or the CT Drug Control Division.

Although there is no standardized format for this inventory, a sample is available from EHS at our website (<http://www.yale.edu/ehs/Documents/consub/biennialsampleform.pdf>). If you have any questions about this or other requirements associated with controlled substances, contact your Safety Advisor or call EHS at 737-2121.

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

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Incident Report

A small sampling of incidents Yale EHS responded to during the past few months...

February 2011

Description: *possible exposure to hydrofluoric acid*

A researcher working with concentrated acids, including hydrofluoric acid (HF), noticed a small red mark on her wrist after removing her gloves. Because she had been working with HF, she applied calcium gluconate gel and went to the Employee Health Office (EHO) at Yale Health for evaluation.

Resolution:

Employee Health sent her to Acute Care, who had her transported to YNH. Doctors in the Emergency Room evaluated her wrist and determined that the mark was not caused by HF. EHS was contacted by EHO, and immediately visited the laboratory and verified that no chemical spill occurred.

Lessons Learned:

If chemical burn is suspected, immediately rinse area and contact Acute Care 432-0123 and Yale EHS 785-3555. Never work alone with concentrated acids. Ensure that all required personal protective equipment is properly sized and available before beginning work with hazardous chemicals.

March 2011

Description: *needlestick*

A researcher was injecting a chemotherapy agent into a mouse and accidentally stuck himself when removing the needle from the syringe.

Resolution:

The researcher immediately removed his gloves, squeezed the small wound and washed his hands with soap and water for several minutes. He contacted EHS and went to Yale Health Acute Care for follow-up.

Lessons Learned:

This incident demonstrates the hazards of recapping or manually manipulating sharps. Always use mechanical devices when directly handling sharps.

March 2011

Description: *Chemical permeation through glove*

A researcher was wearing thin nitrile gloves and working with dimethylformamide. She realized that some DMF had spilled onto her gloves, but continued working and did not remove her gloves until she finished more than an hour later. After removing her gloves she noticed wrinkling and numbness of her fingers, washed her hands with soap and water, and went to Yale Health for evaluation.

Resolution:

Yale Health contacted EHS, who sent over an MSDS and information on DMF. Researcher was treated and released. EHS determined that DMF will readily penetrate nitrile gloves, and provided a pair of butyl gloves to the lab to use with this chemical.

Lessons Learned:

Thin exam style gloves offer limited protection from chemical exposure, and should always be removed after direct contact with chemicals. There is no one glove material that is good for all chemicals, so researchers should select that best glove using a glove selection chart. A glove selection chart was provided to the laboratory for their use.

EHS Safety Training Information

Bicycle Safety Training

The course covers state and local laws pertaining to bicyclists, accident avoidance including common situations where accidents occur on roadways and how to avoid them. It will also include bicycling tips, bicycle maintenance info, and the proper use and sizing of helmets. A quiz is included at the end of this course. Classroom only.

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. This is a classroom only training.

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/online/airtraining/airemissions/airemissions.htm

Biosafety Training

www.yale.edu/ehs/online/BiosafetyPart1/BiosafetyPart1.htm
www.yale.edu/ehs/online/BiosafetyPart2/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/online/hazwaste/chemicalwaste.htm

Dry Ice Shipper's Training

www.yale.edu/ehs/Documents/training/dryice.pdf

Formaldehyde Training

www.yale.edu/ehs/online/formaldehyde/formaldehyde.htm

Laboratory Chemical Safety

<http://info.med.yale.edu/chemsafe>

Laser Safety Awareness

www.yale.edu/ehs/online/laser/lasersafety.htm

Organolithium Compounds Training

www.yale.edu/ehs/online/OrganoLithium/OrganoLithium.htm

P. I. Orientation of Yale's Biological Safety Manual, Procedure & Policies

www.yale.edu/ehs/online/Biosafety/BioAdmin.htm

Safe Use of Biological Safety Cabinets

<http://www.yale.edu/ehs/online/safetycabinet/safetycabinet.htm>

Shipping Infectious Substances – Category A

<http://www.yale.edu/ehs/online/categorya/categorya.htm>

Shipping Biological Substance – Category B and Exempt Human or Animal Specimens

<http://www.yale.edu/ehs/online/categoryb/categoryb.htm>

Radiation Safety Training

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

Radiation Safety for X-Ray Technologists

http://www.yale.edu/ehs/powerpoint/radtechs_files/frame.htm

Tuberculosis Awareness

www.yale.edu/ehs/online/TB/TB.htm

Universal Waste

www.yale.edu/ehs/online/universalwaste/universalwaste.htm

Workplace and Office Ergonomics

<http://www.yale.edu/ergo/>

X-Ray Diffraction

www.yale.edu/ehs/online/xraydiffraction/xraydiffraction.htm

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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.